

Madonna University Center for Research Presents

Symposium for Research, Scholarship and Creativity

Wednesday, April 22, 2020 • 12–5 p.m.

DIRECTOR'S WELCOME MESSAGE

6th Annual Symposium for Research, Scholarship and Creativity



The Madonna University **Annual Symposium for Research, Scholarship and Creativity** proudly continues this year. In keeping with COVID 19 social distancing, guidelines, we have created a virtual symposium – which we are sure you will enjoy.

This year's *Symposium for Research, Scholarship and Creativity* has been constructed to seamlessly provide students and faculty with the opportunity to showcase their scholarly accomplishments in research, practice, performance and creativity with the Madonna University community. Our Blackboard platform contains poster presentations, musical performances, posters with oral presentations, a variety of scholarly presentations, and Madonna Talks. And it will all be introduced with a warm welcome from university administrators.

The annual *Symposium for Research, Scholarship and Creativity* is one of the key activities of the Center for Research. It is designed to promote scholarship, quality research practices, and creative endeavors. Through this event, we continue to provide students with an opportunity to perfect their presentation skills, and share innovative ideas, showcase capstone research, project work, artistic expression, creative performances and many other forms of scholarship. Additionally, **Madonna Talks**, provide a fast-paced update on faculty and student research and scholarship.

Grounded by our values, Madonna University promotes scholarly inquiry and creativity not only for advancing one's own knowledge, skills, and understandings but also and more importantly, for the critical contribution of expanding our capacity to serve others and contribute to the greater good.

Please be sure to explore all the sections of our online Symposium to fully experience the scholarly and creative achievements and endeavors of students and faculty presented at our 6th Annual Symposium for Research, Scholarship and Creativity.

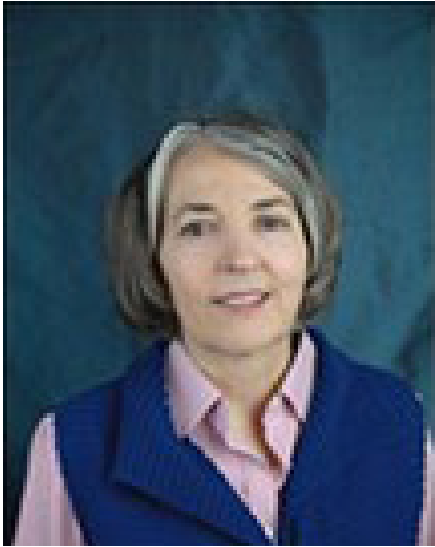
Dr. Deborah Dunn

Dr. Deborah Dunn
Professor
Director Center for Research
Dean, The Graduate School

CONTENTS

- 2** Madonna Talks
- 3** Performance Presentation
- 4** Student Poster Presentations
- 13** PowerPoint Presentation
- 14** Institutional Review Board
Poster Presentation Judges

MADONNA TALKS



Diane Burgermeister PhD, PMHCNS-BC
Professor and Director DNP Program
Madonna University
College of Nursing and Health



Heidi Mason, DNP, RN, ACNP-BC
Madonna University Alum (19)
Clinical Assistant Professor
University of Michigan School of Nursing
Nurse Practitioner Head and Neck Oncology
University of Michigan Rogel Cancer Center

The Doctor of Nursing Practice Projects and The Impact on Health Care Practice

The purpose of this presentation is to provide an overview of the types of Doctor of Nursing Practice (DNP) projects completed over 10 years by students who attended a University Post Master's DNP degree program. The process of translating research into practice will be highlighted along with some ethical issues faced. The American Association of Colleges of Nursing (AACN) encourages innovation in the design of these projects with a focus on change to impact health care. Selected projects will be used as examples to describe the challenges encountered by students when attempting to impact and sustain change within a variety of health care settings.

PERFORMANCE PRESENTATION

Christian Erroll King
Graduated in December 2019
Bachelor of Music, Film Music Scoring
Advisor: Barbara Wiltsie

Spring (A short film which is accompanied by Christian Erroll King's original orchestral film score also titled Spring)

Christian has accepted an offer of admission from the University of Michigan and will begin pursuing his Master of Music in Composition at UM's School of Music, Theatre & Dance this fall.



Spring is an open-source, animated short film directed by Andy Goralczyk. It tells the story of a courageous shepherd girl who, along with her frisky dog, sets out to usher in the season of spring. For my senior Film Music Scoring project, I composed an orchestral piece, also titled *Spring*, to accompany them on their quest to continue the cycle of life. I hope you enjoy!

POSTER PRESENTATIONS

Undergraduate

Poster Number: 1

Using Qlik Sense and Predictive Models to Identify the Market Risks Caused by COVID-19

McKenzie Barrett, Brittney Leist, Magaly Maldonado, David Rodriguez, and Stela Thana

Advisor: Dr. Sau Mui Lau

As the spreading of Coronavirus around the world, the global supply chain of the business was broken that resulted in shortage of a certain products and closing of factory production lines. Therefore, this study aims to find out what industries to be impacted by this incident. The challenge is how to identify the impacted industry. Stock market is one of the good indicators as most companies, experienced investors and broker firms know well how their business's supply chain being interrupted and sell these stocks in advanced. Therefore, this study used correlation analysis and regression model to identify how stock prices being impacted by the Coronavirus case changes. A review on the short term and long-term impacts to a certain industry was done. Results found that they are automobile, transportation, retails and tourism industry. The stock prices of the leading companies in these industries and its corresponding indexes, including Hang Seng Index, Dow Jones, HSEC, and other industrial indexes, from October 2019 to Mar 31 2020 were collected. The results of the correlation analysis between the stock prices and coronavirus cases were studied, and then was compared it with the review results. A predictive model was built as an indicator for other countries to monitor its impacts on their economy. Qlik Sense was used to summarize and visualize the findings in a knowledge map. Health professionals can use this knowledge map to monitor and alert the health risks and business risks, and to develop its strategic plans in advanced.

Poster Number: 2

Transmitting Patriarchal Inequities: From Brontë's England to Modern America
Cameron Moore

Advisor: Ioana Fracassi

Patriarchy, or the assumption that men are innately superior to women, and entitled to assert dominance over them, has long caused the latter's social immobilization. Consequently, it's tempting to surmise that as women's social mobility increases, patriarchy will decrease. Furthermore, and derivative from this idea, it can be presumed that modern America is less patriarchal than Victorian England, and that patriarchy in general, can be gradually erased by guaranteeing opportunities for women. This hypothesis is unsatisfactory, however, because it doesn't explain how patriarchy has persisted from Victorian England to modern America, despite drastic increases in socio-economic mobility for women, nor does it propose solutions. Nevertheless, this phenomenon can be more coherently explained by viewing patriarchy as a contagion of sorts - an approach supported by modern American research as well as Brontë's own portrayal of Victorian England, as seen in her novel, Jane Eyre. This perspective contends that patriarchy transmits across time and among communities by evolving in response to social changes, and using established institutions as hosts for transmission. Additionally, it treats the social immobilization of women as a symptom of patriarchy, which explains their nonlinear relationship. Moreover, this perspective provides a framework for research, which suggests that the social immobilization of women, as well as the patriarchal ideas that cause it, can be effectively countered by preventing the spread of patriarchal ideas and 'vaccinating' against them with more egalitarian ones.

Poster Number: 3

A Design of an Intelligent Knowledge Map for Tracing and Predicting the Business Risks and Opportunities: A Case Study of Covid-19

Abigail Powell, Ryan Beltz, Craig Granison, Tori Guardiola, and Emily Pendred

Advisor: Dr. Sau Mui Lau

As the spreading of Covid-19 continues, some countries adopted polices of staying home and flight

control to reduce virus spreading. This causes the global supply chain among countries being broken. As a result, industries' production lines are forced to stop for production and commercial goods are limited supply that ultimately create negative impacts to the business and society. Therefore, this study aims to evaluate the impacts of global supply chain being broken to the product supply, business growth, and economy across countries. The global supply chain of United States, China, Italy, United Kingdom and Germany are selected for analysis. The white paper of global supply chain among countries, the import and export data of the products that had limited supply are collected. The research methods including content analysis and prediction model are used to estimate the supply chain risk, business risk and economical risk. The risks of the emerging products such as health product and daily supply are visualized in Qlik Sense. A knowledge map is implemented to keep track and predict the growth of the Covid-19 and its product supply, business and economic risks across industries and countries. The opportunity for business expansion is discussed and concluded in this study.

Poster Number: 4
DNA Determination of Ancestry of Human Skeletal Remains from Unknown Source used as a Teaching Specimen

Taylor Reaid

Advisor: Dr. Jodi Lynn Barta

Multiple femurs from the Clay Adams collection once used as teaching specimens were utilized for this study to extract, amplify, and sequence DNA. Ancient DNA is a valuable tool in archaeological and forensic research that is used to answer anthropological questions. Skeletal remains used as teaching specimens are preserved and prepared in a variety of ways that can potentially cause inhibitors that can make it more difficult to successfully extract, amplify, and sequence ancient DNA. The DNA was extracted using the Wizard® Genomic DNA Purification Kit and a variety of methods are used throughout this study in order to successfully amplify and sequence the DNA, such as Resilica and Rescue polymerase chain reaction (PCR). After multiple attempts with Rescue PCR, DNA was able to be successfully amplified; however, sequencing was deemed unsuccessful.

Poster Number: 5
Food Insecurity and Diabetes Self-Management Amongst Brightmoor Residents in the City of Detroit
Emma Rimatzki, Zaina Aoun, Mohamed Bazzi, and Alaina Snow

Advisor: Dr. Imaobong Vanderpool

Type 2 Diabetes is the most common form of diabetes, with over one million people in Michigan, or 12.4% of the adult population, living with this diagnosis (American Diabetes Association, 2015). Unfortunately, the rate of diabetes is three times higher in people of lower socioeconomic status compared to those living in higher income areas (Davis et.al, 2016). According to the World Health Organization, 15 percent of people with diabetes will develop complications such as a diabetic foot ulcer. In addition, individuals facing multiple social determinants of health such as poor housing and lack of health care are at the highest risk of obtaining foot ulcers and amputations (Rickards and Cornish 2018). According to the 2017 Detroit Food Metrics Report, 48 percent of households in the City of Detroit are food insecure. The literature reports that Food-insecure diabetics have marginally higher A1c levels than food-secure diabetics and are at increased risk for poorer glycemic control. Houle et al. (2016) assumed that three mediating factors, that is, health behaviors (self-management and coping), quality of care, and individual characteristics (such as depressive symptoms and self-efficacy), link socioeconomic status with diabetes outcomes. This quality improvement project aims to provide evidence-based community nursing interventions for the management and education of individuals at risk for food insecurity, pre-diabetes, and complications of diabetes.

Poster Number: 6
Using Content Analysis, Descriptive and Predictive Analytics to Identify the Potential Market for Online Training Courses

Ian Rush, Paige Clauss, Bryan Gevaert, Connor Greenlee, Evan Miller, and Noah Moore

Advisor: Dr. Sau Mui Lau

Behavioral Intelligence is a set of skills and abilities that enable you to think effectively, making right decision that relative to what you want to be accomplished, and select and execute the right behaviors to be effective with people and situations. In order to create an effective online behavioral intelligence course, the skill sets and knowledge of behavioral intelligence are required to be identified. The challenges of the instructional design are its dynamic content and delivery methods as different

scenario and context may have different decision-making paths and criteria. Therefore, the aim of this study is to identify skills set required in different industry and scenario for behavioral decision making. The skills and knowledge required in behavioral intelligence was reviewed by content analysis of the textbook. The online course syllabus of Behavioral Intelligence from universities, and training and consultancy firms in the United States and Europe, specifically the United Kingdom and Scandinavia was collected. The course content, delivery methods, tuition fee, and target customer groups of these online courses were compared. The data of the types of medium size companies in these countries were collected. A prediction on the trend of growth of behavioral intelligence courses were done based on the potential penetration rate of the course delivered to those companies. A knowledge map summarized these findings using QlikSense allows companies to visualize the potential markets for business expansion.

Poster Number: 7
Propagative Mechanisms of sCJD
Mohamed Jawad Sadek
Advisor: Dr. Veronica Riha

Spontaneous manifestations of Creutzfeldt-Jakob disease (sCJD) may arise as the consequences of environmental and normative-age graded influences that alter the concentrations of assemblage constituents required for liquid-liquid phase separation (LLPS). The author proposes that an initial coacervation of RNA-X followed by cupric dissociation from the complex results in a fully unfolded PrPc molecule - UPrPc - which is then capable of forming PrPres subassemblies that confer infectious status as well as regenerating CtmPrP species for pyroptotic pathogenesis. In order to maintain cellular integrity, defense mechanisms of autophagy, aggrephagy, and apoptosis compete for dominance, with the later producing immense neurological damage to preserve adjacent neuronal populations. Through game theory analysis, a pure strategy Nash equilibrium was found to occur at (1,1) for competing prion-like proteins and another was found at (X,0) for competition among survival and death mechanics. Interestingly, some-prion like proteins display ambivalent characteristics, which suggests that there may be possible mechanisms for its reversal like phosphatases. Further insights into more advanced game applications as well as quasispecies/replicator-mutation models will be crucial to elucidating an ultimate evolutionary basis.

Poster Number: 8
Editing of the Ebony Gene in Drosophila Melanogaster
Justin Schmitz

Advisor: Dr. Jodi Lynn Barta

The CRISPR-Cas9 system used for gene editing is one of the most exciting scientific breakthroughs in recent history. When looking for the easiest ways to be able to test the system, model organisms have been extremely useful, especially the fly *Drosophila melanogaster*. Because it is such a common model organism, it is important to know how we can genetically modify these creatures as well as what parts of their genome can actually be modified. The ultimate goal of this experiment is to attempt to genetically modify the ebony gene of *Drosophila melanogaster* which, when mutated, causes the fly body to be black rather than the wild-type brown. Using the CRISPR-Cas system, the gene will be knocked out by removing a small portion of exon 2 in the ebony gene causing a loss of function. A bioluminescence gene will then be inserted into the fly genome where the small portion of the ebony gene was removed. This new gene will express a bioluminescent protein so that the fly will glow in the dark with the color of the bioluminescence.

Poster Number: 9
Using Descriptive Analytics and Analytics Map to Analyze Business and Marketing Strategies

Jacob Tremonti, Brenden Kozdron, Ryan Lynch, Maria Riggi, and Joseph Sanchez
Advisor: Dr. Sau Mui Lau

Fish & Loaves is a community food pantry that was created by a group of Taylor Churches inspired by the gospel. Their mission is "Ensuring No One Goes Hungry" in the communities they serve. Fish & Loaves assists more than 9100 households and over 13,000 men, women, and children and have distributed over two million pounds of food annually. As there are some other charity organizations around Fish and Loaves that provide similar or some other charity services, Fish and Loaves aims to evaluate and compare these organizations to help them to improve their business operations, and to identify new donors and volunteer group. The challenge of this project is how to evaluate and compare across these organizations, and to provide business insights to Fish and Loaves' management. Therefore, the objectives of the project are to develop an analytics map to help Fish and Loaves to analyze and compare among its competitors' donors, donation activities, support communities, volunteers, donation receivers, responses of followers in social media platforms such as Instagram, Facebook, and Twitter. The

above data was collected by analyzing the content of those organizations' websites. The data such as posting content, number of followers, and number of responses in Instagram, Facebook, and Twitter in those organizations were collected and compared using descriptive analytics. All these findings were visualized by using QlikSense in an analytics map. The analytics map can help Fish and Loaves to better identify the potential donors and volunteer groups, and to plan marketing planning and strategies.

Graduate

Poster Number: 10 **Cooking Matters: When Children Are Included**

Arleen Allen-Hunter

Advisor: Dr. Sue Ann Sharma

A family cooking class and parent forum were initiated in response to the poor eating habits children exhibited in a home day care. According to Ahn (2015), home, school, media, and the food industry are contributing factors in the food decisions that children make. Hammons (2001), suggests that what children learn about food and eating happens at the table during mealtime. This study examines 1) If students participate in food preparation, will they be more likely to try new food? 2) What change occurred in the types of meals families selected after participating in the cooking class? and 3) What effect did parent and teacher collaboration have on children's willingness to try new foods? Data triangulation revealed that the more opportunity children have to create food, the more they will be to make healthy food choices. Parents want their children to make healthy food choices. Thus, parents responded favorably to being asked to collaborate with early childhood educators on healthy food choices.

Poster Number: 11 **Fish and Loaves Social Media Marketing and Global Expansion** **Taylor Baker, Nicholas Atwood, Marchelle Montgomery, and Shivani Patel** **Advisor: Dr. Sau Mui Lau**

The objective of this project is to increase donations to fish and loaves by increasing their social media awareness and online presence. The goal of Fish and Loaves is not only "ensuring no one Goes Hungry" but uniting church, civic groups of individuals of faith into a community partnership to do so. Through social media outreach, Fish and Loaves hopes to increase their online presence through both Facebook and Instagram. Defining the goal of attracting a

broader audience, increasing likelihood to donate, and heightening electronic word of mouth will provide accurate direction for Fish and Loaves to grow. Local non-profit organizations like Fish and Loaves will require some research in order to expand globally. Fish and Loaves has the potential to use marketing strategy from UNICEF. UNICEF's objective is to provide for underprivileged children globally, and this vision needs sustainable funding. To achieve the above goal, UNICEF applies a blended marketing approach that targets social networks service (SNS) users, individuals, and organizations, which can be used to transform other non-profit organizations with a humanitarian mission. Food Pantries and food banks are one of many nonprofit organizations which have alluded to the importance of a social media presence to increase donations and attention to accomplish their goals and objectives. Because many nonprofit organizations rely on the help of volunteers, organizations need to identify more efficient ways to run their organization. Some research and collected data has shown the innovative efforts Fish and Loaves have taken similar to its competitors to expand its market share in receiving more food and monetary donations.

Poster Number: 12 **Using Risk Modelling Approach for Identifying Market Risks and Opportunities: A Case Study of Medtronic's Global Supply Chain** **Jameta Branch, Nga Nguyen, Jianing Yan, and Shih-Hsiang Yen** **Advisor: Dr. Sau Mui Lau**

Medtronic is one of the leading healthcare supplier company in United States. As technological developments continue to advance in the healthcare arena, Medtronic's market share is at risk as smaller startups with innovative next-generation technologies threaten Medtronic's dominant market. Since diabetic is one of the leading causes of death in the US, diabetes care devices market size is predicted to grow over 5.9% from 2019 to 2025. Therefore, this research aims to study the market penetration of the top five diabetes monitors on the market, and compares the features, price, market share, supply chain and marketing strategy of these products by the dominated suppliers. The research challenges of this project are how to identify the market risks of the supply chain and marketing strategy of these products. The import and export data, trading policy of the countries, supply chain of diabetes care plan, types of diabetes devices, diabetes disease trends, and

customer review are collected. The research methods including gap analysis, trend analysis, and marketing mix strategy are used. A risk model to measure the market risks in supply chain for identify market risk opportunities are designed and implemented. A knowledge map and supply chain of diabetes devices are implemented.

Poster Number: 13
Getting Children to Be More Physically Active

Yolanda Brown-Newton

Advisor: Dr. Sue Ann Sharma

This action research project explores the implementation of a physical obstacle course and games that alternated during large group time to address the lack of participation in physical activities by the four-to-six-year old's in daycare. Over a six-week period, the early childhood educator examined 1) How did the behavior of children change after participating in physical activities? 2) How did the children respond to being involved in physical activities/games during a large group? and 3) How did the collaboration between teachers and parents motivate children to play physical games? Parents were encouraged to participate in physical activities with the children and provided feedback on the changes during parent meetings and forums. Data sources included lesson plans, attendance log, observational notes, surveys of parent and children collected, group forums, and child physical activities self-assessment. The triangulated data revealed an increase in the physical activity levels of the children and parents. It also appears that the parents' collaboration with the early childhood educator supported more physical activities at home and ultimately increased the children's overall participation in physical activities.

Poster Number: 14
Creating Organizational Intellectual Capital via Virtual Office and Global Market Expansion: A Case Study

Melissa Clawson, Rodenc Asllani, Chris Glispie, and Chuyoung Kim, and Karamjit Singh

Advisor: Dr. Sau Mui Lau
With constant competition with the top accounting companies, creating organizational intellectual capital and virtual platform are the potential business strategies for PwC to expand the global market. This paper aims to analyze the leadership strategy, market strategy, and marketing strategy of its Big Four competitors and to provide guidance to the managers of PwC in expansion through technological

utilization and organizational intellectual capital management. The challenges of the project are how to create the knowledge assets of PwC locally and globally, and set up the virtual office for working virtually around the world. Case studies, company websites, white paper and social media discussion of the Big Four were collected. Porter Five Forces Model analysis, SWOT analysis, and content analysis were used to analyze and compare the leadership, marketing strategies, market risks, and market opportunities of the Big Four. The technologies for virtual platform were reviewed. A framework of capturing organizational intellectual capital including structural capital, relation capital, and human capital was designed for PwC to create the intelligent virtual team. Some possible areas of expansion were identified along with the various services that PwC can provide to its new customer.

Poster Number: 15
Low Appetite in Older Adults: Increasing Nutritional Intake

Bridget Coffie

Advisor: Dr. Joy Oslund

The population of older adults is increasing. As people age, they fail to adequately regulate their nutritional intake and experience unintended weight loss and malnutrition. This has devastating consequences on quality of life and increases the risk of morbidity and mortality in older adults. Age-related changes in the regulation of appetite and lack of hunger are clinically termed as anorexia of aging. The etiology of aging is multi-factorial and this includes physiological changes, reduced energy expenditure, and pathological changes. The study aimed to analyze factors influencing low appetite in older adults and develop interventions to increase their nutritional intake to attain and maintain quality health for them. The study recruited five women and two men of long-term care residents, aged between 86 and 98 years old. The Council of Nutrition Appetite Questionnaire (CNAQ) was deployed to assess the risk of anorexia of aging in long-term care residents. One-on-one conversations and direct observation were used to determine resident's perceptions and attitudes towards food to evaluate the levels of their appetite and nutritional intake. The results revealed that 57% of the participants are at risk of weight loss and developing malnutrition. The ideal situation for good appetite and increased nutritional intake accounted for the level of hunger. For this project, individualized interventions were designed and studied to determine their effectiveness. The interventions proved to increase the nutritional intake of the participants.

Poster Number: 16
A Study of Weekend Discharge Factors that Contribute to Discharge Delays and Increase Hospital Readmissions
Erin Freshwater

Advisor: Dr. Sau Mui Lau

In 2012 the Center for Medicare implemented a prospective payment system called the Hospital Readmission Reduction Program. This payment model holds hospitals financially accountable for patients up to 30 days post-discharge. Readmissions potentially reflect a breakdown in the discharge process. This research aims to identify what factors contribute to discharge delays and increase in hospital readmission rates. Therefore, a research model and questionnaire including potential weekend discharge barriers and their influence on readmissions was implemented. The subjects including case managers and social workers (n=50) at an acute care hospital in Michigan was selected. Data was collected from December 16, 2019 until January 10, 2020. Pearson's correlation analysis was used for data analysis. The results found that only guardianship issues were positively correlated with weekend discharge barriers and an increase in risk for readmission ($r= 0.36, P< 0.36$). Family and patient readiness and availability were not significantly correlated ($r= -0.06, P< 0.72$). The weekend staffing ($r= 0.09, P< 0.62$), physician coverage ($r= 0.08, P< 0.65$), insurance authorizations ($r= -0.02, P< 0.92$), diagnostic testing ($r= 0.28, P< 0.10$), and physical therapy consultations ($r= 0.22, P< 0.21$) were not significantly correlated to weekend discharge barrier and increased readmission risk. Some other factors included housing ($r= 0.03, P< 0.86$), home health care ($r= 0.10, P< 0.58$), outpatient pharmacy ($r= -0.01, P< 0.93$), transportation ($r= -0.05, P< 0.79$), and meal assistance ($r= 0.26, P< 0.14$) were also not significantly correlated to weekend discharge barrier and increased readmission risk.

Poster Number: 17
Empowering Early Childhood Education with Strategies to Reduce Screaming in the Classroom
Rachel Geyer

Advisor: Dr. Joy Oslund

This research project studies eight classrooms early childhood educators in an Early Headstart setting that are challenged by infant/toddler use of screaming as a means of communication. Multiple data sources of surveys, observations, and professional development was triangulated to investigate 1) How do early childhood educators respond to the communication of infants and

toddlers? 2) Were there changes in early childhood educators' understanding of supports for infant/toddler communication expressions after participating in professional development? and 3) Were there changes in infant/toddler behaviors after the early childhood educators implemented strategies taught during professional development? Data revealed that the educators gained confidence and felt more knowledgeable on how to implement strategies to reduce the screaming of and support the development of communication skills of the infants and toddlers in their classrooms.

Poster Number: 18
Consequences of Bullying in the Workplace and the Effect it has on Employees
A'leen Hudson

Advisor: Dr. Sau Mui Lau

Bullying in the workplace has been shown to cause harm to employees, workplace culture and harm the performance of employer organizations. This systematic study of existing academic research reviewed the consequences of bullying in the workplace and discusses the effects of bullying on employees. A keyword search method was used to analyze the consequences of bullying and the effects on employees chronicled by research published between 1976 and 2019. The database from EBSCOhost at Madonna University's library was used to find and identify the relevant academic research. The results published in 32 papers indicated that the following consequences of bullying in workplace occurred in the literature at the following listed frequencies: anxiety (AX=recurred at the frequency 78.12%); physical effects (PA=50%); work performance (WP=50%); workplace violence (WV=43.75); suicidal thoughts (ST=28.12%); increase in employee absenteeism (EA=78.12%); sabotage (S=46.87%); loss of sleep (LS=82.25%); depression (DP=68.75%); toxic work environment /negative culture (TWE=65.62%); increase in employee turnover (ET=60%); and lower productivity (LP=71.8%). The results contributed to the development of a measurement tool for employers to assess the impact of bullying on employees and the organization and enable employers to plan an intervention to reduce the impact of bullying. Keywords: Anxiety, Physical Effects, Work Performance, Workplace Violence, Suicidal thoughts, Absenteeism, Sabotage, Loss of sleep, Depression, Increased employee turnover, Toxic work environment/negative culture, and Lower productivity.

Post Number: 19**Exploring Permanent Supportive Housing Residents' Creative Expression: An Asset-Based Community Development****Deshayla Jackson, Jerrick Breckenridge, and JoCharta Rogers****Advisor: Dr. Sarah Twitchell**

This study utilizes the Asset-Based Community Development approach to engage Cass Community Social Services (CCSS) and their Permanent Supportive Housing (PSH) residents in participatory action research. The purpose of this research is to identify the past and present creative abilities of residents living in PSH at CCSS and to recognize how CCSS can support the community's creative expressions. The tools developed for the study was a 12-question survey and an activity that ranked 48 creative expressions as interesting or not interesting. Ten residents participated in the survey, while 9 participated in both the survey and the activity. The residents' responses varied when asked about their creativity before, during and after homelessness. Fifty percent of the residents felt they would be comfortable teaching or leading an activity to others. Two-thirds listed creativity as an important part of the CCSS community. The results from the research may provide opportunities for CCSS to design inclusive, community-oriented programming based on residents' creative abilities and interests.

Poster Number: 20**Awareness of Food Waste Among Toddler Caregivers****Noor Karkoukli****Advisor: Dr. Karen Schmitz**

There is a lack of research regarding food waste resulting from caregivers of toddlers (5,6,7). When toddlers waste their food, this indicates they will not be consuming their full nutrition benefits and may consume higher energy foods later (5). Food waste resulting from meals provided by toddler caregivers impacts the environment negatively and is a financial loss for the mothers and daycare/preschool programs (6). A study by Parizeau et al., found that it is important to identify and understand factors that lead to food waste in order to design waste management systems and policies to reduce food waste; factors include food awareness, waste awareness, family lifestyles, and convenience lifestyles were all related to food waste production (7).

Poster Number: 21**The Effects of YouTube Nutrition Lectures on Dietary Intakes and Self-Efficacy of Female Volleyball Players****Karlie Kelly****Advisor: Dr. Karen Schmitz**

According to recently published research, the Internet was among the most popular sources of nutrition information obtained by athletes. Females were more likely than males to use the Internet and other media sources for their nutrition information than males. Since the Internet and other forms of media may not always be accurate sources of nutrition information, the researcher created an evidence-based YouTube nutrition lecture to distribute to female volleyball players. This study assessed the lecture's effectiveness on increasing the athlete's self-efficacy regarding healthy eating and improving the athlete's dietary intake. Eighteen volleyball players from Madonna University (Livonia, MI) and ten national club volleyball players from Legacy Volleyball Club (Novi, MI), that ranged from 16-23 years of age, were recruited to participate in this 4-week study. Athletes filled out an initial 3-day diet diary electronically which required them to log everything they consumed over a period of three days. After the diet diaries were turned in, email surveys were administered to participants to assess their self-efficacy regarding healthy eating. YouTube nutrition lectures were assigned and viewed by all participants before a second 3-day diet diary and survey were sent out. Differences in pre-/post- intervention surveys/ diet diaries determined the effectiveness of the YouTube lecture.

Poster Number: 22**Comparing Next Generation PDQeX Nucleic Acid Extractor to Common Silica membrane, Silica Resin, and Magnetic Bead DNA Extraction Protocols in Degraded Human Remains****Jaclyn Metcalfe****Advisor: Dr. Jodi Lynn Barta**

Efficient isolation of DNA from degraded samples is fundamental in the field of forensic science. Both the quality and quantity of DNA obtainable from a degraded sample relies largely on the extraction process. This study compared a new approach to DNA purification, MicroGEM PDQeX Nucleic Acid Extractor, to three conventional methods, Promega DNA IQTM, Qiagen® DNA Investigator Kit, and Promega Wizard,® using degraded remains. The remains were discovered and excavated in 2017 while installing a new sewer line in Riverside, Illinois. While the remains are thought to be older than the village itself, an anthropological analysis proved to

be of limited use in identifying the biological profile of this individual. Using samples cored from the left femur, the four extraction protocols were carried out to determine if one delivers more DNA yield than the others. The new PDQeX Nucleic Acid Extractor provides an enzymatic approach to traditional DNA extraction techniques. This automated method claims to generate PCR-ready samples in just 15 minutes, where other methods may take hours. Additionally, quick sample prep frees up laboratory technician time, and minimal handling of samples protects the integrity of the samples by preventing opportunities for contamination. After extraction, a polymerase chain reaction was performed to amplify human mitochondrial DNA. An inhibition test and DNA quantification was also performed to determine if there are any underlying inhibitors present and to provide a DNA yield for each extraction method.

Poster Number: 23
Using Process Maps, Social Media and Corporate Data to Identify: Market Risk and Opportunity of the Coca-Cola Company

Richard Miller, Marlon Brezinsky, Walid Jaward, and James Bazylewicz
Advisor: Dr. Sau Mui Lau

The Coca-Cola Company is one of the world's leading beverage companies. However, new brands continue to enter the market as consumer preferences have changed recently to healthier alternative drinks. Therefore, the aim of this study will identify the potential risks to The Coca-Cola Company and to develop new marketing strategies, while maintaining its branding and leadership position. The Coca-Cola Company's Global Marketing, Organizational Leadership, Operations Management, and Strategic Management were examined. Case study methods were used to identify how Coca-Cola maintaining its global market share and supply chain, while competing with their rival Pepsi-Co. The company reports were used to examine Coke's new markets in East Europe and Russia. SWOT Analysis, Porter's Five Forces, process mapping, opinion mining, and network analysis were used to analyze Coke's branding, leadership, consumers' persona, marketing strategies, and potential markets. Market predictions and consumer preferences are analyzed using predictive model and social media analytics. The results found that Coca-Cola should increase use of Artificial Intelligence and Big Data to market healthier choice beverages, in addition to further streamline global operations to maintain Coca-Cola's leadership position within the non-alcoholic beverage industry. A knowledge map on its global supply chain management, consumers' persona, market share, market risk, and potential market were implemented.

Recommendations for large corporations maintaining a global market and supply chain were done.

Poster Number: 24
The Impact of Homelessness on School Age Children
Philip Ogbuaku

Advisor: Dr. Sau Mui Lau

Homelessness has become a national complex problem. Its growth is diverse comprising of families, abused children, veterans, and the elderly. Homeless families with school age children project them towards a cyclical trend of homelessness in the future. While children from middle income families enjoy hot meals, warm jackets, roof over their heads, and other amenities of life, their peers from homeless families only dream of warmth in a near-by alley, make shift gas station huts, glorified packing lot/street, or at best a public shelter. The focus on the family of school age children who are homeless makes this project unique in that, not enough have been written on them as part of future leaders who, are struggling in an unequal economic standard that are expected to compete with their peers and win.

Poster Number: 25
Electric Vehicles: Strategic Supply Chain and Marketing Challenges
John Rehm, Suhad Abou-Rjaily, Mariah Douglas, Hala Dubaybo, and Marchelle Montgomery

Advisor: Dr. Nermine Atteya

In recent years, automotive companies have announced plans to expand their production and sales of electric vehicles. In this paper, we examine the challenges that automotive companies will face in accomplishing this goal. Our analysis focuses on the challenges in market segmentation, targeting, positioning, creating a competitive advantage, developing a competitive strategy, and challenges in marketing channels and supply chains. Although our research does not exclusively examine one company, our discussion focuses on General Motors to provide an example of the real-world application of our research. Infrastructure, range anxiety, and cost are common themes that we found most impact the adoption of electric vehicles. Automobile companies, like General Motors, who aim to secure a large market share in the electric vehicle industry and encourage mass-use of electric vehicles should invest in the electric infrastructure, improve the technology of the vehicles, develop more vehicle options, and decrease the costs of the vehicles.

Poster Number: 26
Acceptability of a Plant Based Pudding Made with Jackfruit Seed Flour as a Replacement for Cocoa Powder
Laurie Santavicca
Advisor: Laura Kull

The practice of clear-cutting tropical rainforests and use of child labor for harvesting cocoa beans can be reduced or ended by the utilization of a waste product, Jackfruit seeds, to replace cocoa powder. This experiment was designed to investigate the potential of jackfruit seed flour (JFSF) as a replacement for cocoa powder (CP) in the production of chocolate pudding, due to its cocoa aroma and thickening power. Jackfruit seed flour was substituted for cocoa powder in two mixtures, 25:75 and 50:50 jackfruit seed flour to cocoa powder. The control was 100% cocoa powder. Physicochemical properties were evaluated to determine consistency of viscosity and pH among the mixtures. JFSF had a lower viscosity than CP, by 1cm, as determined by a line spread test. The pH of the mixtures was higher than expected, based on past studies. The pH of CP was 6.78 and JFSF was 7.2, while the mixtures fell in between the two. The acceptability of the mixtures was determined by a sensory panel (n=10) through the use of a Difference test and a Descriptive test. Acceptability of the 25% JFSF substitution was comparable to the control, cocoa powder. The 50% JFSF substitution was not acceptable, though, that does not discount its possible use in industry. Jackfruit seed flour in chocolate pudding is a novel use of a waste product. This study demonstrates its feasibility as a cocoa powder replacement. Further studies are strongly recommended.

Poster Number: 27
An Analysis of Fish and Loaves Social Media Marketing Strategy
Melissa Sheppard, Beverly List, Kai Paige, and Brandon White
Advisor: Dr. Sau Mui Lau

Using multi-dimensional classification and complexity theory methods to identify donor persona for social media marketing and supply chain management: Fish and Loaves is a local non-profit food pantry, that assists low income families with food resources. The goals of the company are to increase donation and reduce cost in business operations. In order to achieve the goals, the existing supply chain and social media marketing at Fish and Loaves are reviewed. However, the research problems are how to identify the supply chain bottleneck and apply advanced technologies to improve its supply chain, and how to analyze the exiting social media marketing strategies to attract new donor and to

maintain its donor relationships. Therefore, the objectives of the project are to develop a knowledge map on potential donor persona for identifying potential donors and improving the social media marketing content design. The second objective of this project is to evaluate the existing supply chain donor behavior and social media. The research methods used multi-dimensional classification method to identify the characteristics of potential donor to a certain of posts in social media. In addition, a process map and complexity theory are used to determine the bottleneck of supply chain management in Fish and Loaves. A knowledge map of potential donor persona and social media content are implemented that can help Fish and Loaves to develop the social media marketing strategies. A supply chain intelligent-based network analysis was implemented for monitoring and advising the logistic management of food supply and reducing the costs.

Poster Number: 28
A Study of the Market Demand and Supply Chain Risks in Telehealth
Kathryn Ventura-White
Advisor: Dr. Sau Mui Lau

Healthcare has come a long way from the 1920's when the average life expectancy was 60 for men and 61.8 for women. Today the average life expectancy has increased by 15 years or more in some cases that caused the ageing problem. The healthcare companies are required to develop new technologies and telehealth devices to overcome the problem and meet the future needs in healthcare. Therefore, this research aimed to study the current healthcare devices development of the top five healthcare companies: Medtronic, Johnson and Johnson, GE Healthcare, Abbott Laboratories, and Philips and to identify business opportunities of telehealth devices and its supply chain business risks. A comparison of current healthcare devices development among these five companies was done. A systematic review of the potential supply chain business risks will be identified. The results found; pulse oximeter and spirometers devices in demand for patients who developed chronic obstructive pulmonary disease (COPD), glucose monitors to address patients who developed diabetes mellitus, blood pressure monitors for patients who have hypertension and heart disease. The top five companies developed telehealth devices to monitor healthcare needs of patients and are constantly developing advancements to address the ageing population. Meeting the demand of the increased population to address the increase in chronic diseases does not come without supply chain risk. Some of the risk include quality; findings the supplier with the ability to produce and exceed the standards of the population it serves and

supplier risk include the ability to deliver a product when unexpected events occur such as natural disaster, unexpected disease outbreaks, and natural catastrophe. The results can be used by the healthcare companies on its product development analysis and implementing the business risk management in its supply chain management.

Poster Number: 29 **Implementing Child Assessments**

Barbara Vicars

Advisor: Dr. Sue Ann Sharma

This qualitative research explores the implementation of formative assessments in a well-established home day care with six children ranging from six months old to three years old. Mangione, Osborne, & Mendenhall (2019) suggest that formative assessments are an essential part of high-quality practice. The CORAdvantage assessment tool created by HighScope (Epstein, et al., 2016) was used to assess the children. The domain chosen out of the nine recognized by the COR (Child Observation Record) was Physical Development and Health. To investigate the implementation of an assessment tool in a home day care, the following questions were examined 1) What happens when administering Physical Development and Health assessments to the children in day care? 2a) How did my practice change as a result of implementing the COR assessments? 2b) How did my relationships with the parents and/or children change as a result of implementing the assessment-driven lesson plans? 3a) How did my daily schedule change when executing the assessments? and 3b) What parts of the assessment process changed my practice? Over the course of four weeks, multiple data sources were collected: lesson plans, journal entries, anecdotal notes, parent newsletters, student portfolios, assessment results, and a family survey. Data triangulation revealed that it is feasible to implement assessments in a home day care with a single provider. The implementation of lesson plans presented the most significant challenge. The assessments, weekly parent newsletters and parent/teacher conferences offered opportunities to increase parent communication.

Poster Number: 30 **Do Teacher Evaluations Correlate to Student Achievement**

Kenya Vincent

Advisor: Dr. Anne Morris

Teacher Evaluations are a way to show teachers how effective they are in the classroom and in turn let the Principal and School District know how effective the teachers are. I am sure that every principal wants all of their teachers to be great teachers. Teacher evaluations have been put in place based upon a

school reform effort to reveal if teachers are effective. (Eric S. Taylor and John H. Tyler) Since there is a need in place to set the barometer of an effective teacher, then evaluations were created. Teacher evaluations are not the same across districts. Several articles had teachers complain about how they are evaluated. In my search I came across that teachers are not being evaluated the same. There are set criteria online, but the wording of what each district go by are not the same. The Department of Education in Michigan states that highly effective teachers are people who have evidence of average to high impact on student growth. Teacher evaluations may be good one year and not so good the next. Teachers are always working on something because what worked last year doesn't work the following year. The purpose of this research is to find out if the effectiveness of Teacher Evaluations correlates to students being proficient on state tests.

POWERPOINT PRESENTATION

Using Predictive Analytics to Analyze the Coronavirus Spreading Patterns and Consequences

Christine Surerus

Advisor: Dr. Sau Mui Lau

The first outbreak of the Coronavirus (COVID 19), is an infectious disease caused by the recently discovered. Due to the high speed of spreading of the virus, it caused over thousands of people's death around the world, including China, Italy, United Kingdom, USA, etc. Till now, there is no research understanding the life cycle and spreading pattern of Coronavirus. Therefore, the aim of this research is to analyze the lifecycle of coronavirus and implement a predictive model to predict how Coronavirus being spreading. The data of the Coronavirus cases from the countries of China, Italy, United Kingdom, and USA were collected from internet. The trendline analysis, time series model, predictive model and chi-square testing were used to find out the spreading life cycle of the Coronavirus, and to compare that across different countries. The results can be used to predict the spreading lifecycle of Coronavirus in USA, and level of impacts to the community and economy. It can help the health professionals and institution to better plan the human resources, ward space planning, and economy impacts of Coronavirus in USA.

Madonna University Institutional Review Board 2019-2020

Diane Burgermeister, Ph.D., RN
College of Nursing and Health

John Critchett, Ph.D.
School of Business

Deborah Dunn, Ed.D., Director
Center for Research

Elizabeth Goulette, Ph.D.
College of Arts and Sciences

Matilda Isaac-Mustapha, Ph.D.
School of Business

Lara Kovacheff-Badke, Ph.D.
College of Education and
Human Development

Rachel Mahas, Ph.D.
College of Nursing and Health

Patricia Rouen, Ph.D., RN
Community Representative

Christine Seguin, Ed.D.
College of Arts and Sciences

Sue Sharma, Ph.D.
College of Education and
Human Development

Kenneth Thiel, Ph.D., Chair
College of Education and
Human Development

Mary Urisko, J.D.
College of Arts and Sciences

Thank you to our poster presentation judges

Andrew Domzalski

Marian Gonsior

Tara Kane

Karen Obsniuk

Susan Panek

Sue Ann Sharma

Kenneth Thiel

Susan Toma

Stewart Wood

NOTES



NOTES





Center for Research

36600 Schoolcraft Road • Livonia, MI 48150 • madonna.edu

The Mission of the Center for Research

is to provide leadership, coordination and support to faculty in identifying, securing, and managing resources to solve real-world problems.

To encourage multi-disciplinary research, scholarship and creative endeavors that benefits the University's faculty, staff, students, alumni and community members.