



CABRINI  
UNIVERSITY

ARTS • RESEARCH • SCHOLARSHIP

# SYMPOSIUM

APRIL 28, 2020

COMPENDIUM



**Annual Undergraduate Arts, Research and Scholarship Symposium  
April 28, 2020**

**Symposium Co-chairs:  
Dr. Sheryl Fuller-Espie, Professor of Biology  
Dr. Michelle Szpara, Associate Professor of Education**

## Undergraduate Submissions

### School of Business, Arts and Media

- Barnes, Justin: Digital Communications and Social Media;  
Faculty Sponsor: Dr. John Cordes

#### *“Online Privacy”*

This study will examine the perspectives people have when it comes to sharing information about their lives on social media and their views on online privacy. Specifically, on whether they believe online privacy exists or not. Research and recent events such as the Equifax breach of September 2017 have shown that people are more at risk online than they realize. Multiple studies have even shown that people are split on online privacy with some believing they have nothing to hide and share whatever they want on their accounts and others believing that the best way to maintain privacy is not to post at all. In this study, I will examine my respondents’ views on online privacy and their beliefs as to whether it exists as well as why they feel that way. The data will be collected via a survey in Survey Monkey that will be distributed on multiple social media channels. The participants will be asked a variety of questions such as demographic information (age, education, and race), their views on online privacy and why they have these views. Results will be shared at the Symposium through a poster.

- Fields, Jyair: Communications;  
Faculty Sponsor: Dr. John Cordes

#### *“How many basketball players and professional leagues are there worldwide?”*

This pilot study will ask respondents about the sport of basketball. Hopefully it will persuade a lot of people to start watching college and professional basketball on TV. My research question is “How many professional teams and players are there worldwide?” I will be fielding a survey on Survey Monkey and post its link on Facebook to ask a convenience and snowball sample of family and friends. My goal is for 100 completions. The survey will have 23 questions including demographics and people’s experiences and knowledge about basketball. I want to see if there are differences by demographic categories. Basketball is a fun sport to play and learn about; I hope I capture people’s interests in it at all levels. The study will be fielded in April with data analysis complete for a poster by the beginning of May

- Logue, Maddie: Communications;  
Faculty Sponsor: Dr. John Cordes

*“The Relationship of Social Media with Body Image and Mental Health”*

Today in our society we are constantly comparing ourselves to other people -- especially with social media being so prominent in our lives. We get personal validation from getting likes and comments on social media. This pilot study examines our concern for validation from others through the amount of likes and comments on social media. It examines the question if social media can lead to body insecurities and mental health issues. A convenience sample, from my Facebook and Instagram social media, will complete a ten-minute survey on SurveyMonkey with twelve questions relating to social media affecting mental health and body image. Results will be analyzed and a poster of results will be created.

- Lynn, Evan: Communications;  
Faculty Sponsor: Dr. John Cordes

*“Trump’s Impeachment: Convict or Acquit”*

This pilot study searches for the awareness of and opinions about the President Trump impeachment hearings in the first quarter of 2020. Using convenience samples, a Survey Monkey survey’s url was posted on my personal social media accounts and in emails. Questions included a range of demographic questions; the amount of time spent watching and/or reading about the impeachment; respondents’ attitudes toward the process and result of the impeachment hearings; and their possible effects on the 2020 Presidential election. The survey was fielded in April with results analyzed and presented in a poster by the beginning of May.

### School of Education

- Barker, Taylor: Education;  
Faculty Sponsor: Mary Budzilowicz

*“Universal Design for Learning (UDL)”*

Universal Design for Learning (UDL) is an educational framework, grounded in neuroscience, for the intentional design of curriculum that fosters more equitable learning experiences. The UDL framework includes a way of thinking and designing that supports learner variability and inclusivity. Supported by ESSA in grades K-12, UDL is also gaining prominence in higher education to support student success and more personalized learning. My research questions are as

follows: What is UDL? How is the framework applied in curricular design? What does UDL implementation look like in higher education? I also conducted research to discover if students recognize UDL implementation in their classrooms. As a future educator, it is important to perceive the UDL framework in an operationalized manner. I conducted a brief survey with a special education class, and interviewed Dr. Eric Moore, a UDL specialist and instructional designer from the University of Tennessee, for his expertise concerning UDL in higher education. The results will soon be gathered and available at the Symposium as demonstrated in my academic poster.

### School of Humanities and Social Sciences

- Biddle, Madelyn and Jessica Arocho: Psychology;

Faculty Sponsor: Dr. Ruta Clair

*“Effects of Music on One’s Ability to Complete a Cognitive Task Efficiently and Accurately”*

The researchers have done an extensive amount of review of the literature on the effects of music and have found little to no information on the effects that different genres have on an individual performance during a cognitive task. Since there is no research on genres it is important to see if there are any substantial effects. This study aims to determine what relationship different genres of music have on the accuracy and efficiency when completing multiplication problems as a stand-in for working memory and executive function. Participants will complete math sheets under three conditions that are musically different from each other to determine the effects. The results of this experiment will be available at the Cabrini University Research Symposium.

- Bradley, James: Sociology and Criminology;

Faculty Sponsor: Dr. Katie Farina

*“Drug and Alcohol Use Between College Students”*

The specific purpose of the research that will be conducted and presented at the 2020 Symposium is to compare college athletes and non-athletes and their relationship to drug and alcohol use. The research is important because it helps develop further research on the topic and can help solve on campus problems with substance abuse. The research question will be answered by asking several questions to participants on drug use and alcohol use during the span of their lifetime. There are no results from the research as of yet, but the results will be available at the Symposium.

- Butler, Angela: Sociology and Criminology;

Faculty Sponsor: Dr. Katie Farina

*“Criminology’s Influence on Sentiments: The Felony Murder Rule and Punitive Attitudes”*

The purpose of this research is to examine if criminology majors’ are less punitive than their counterparts, specifically, in regards to punitive punishments that stem from the felony murder rule; a controversial rule that varies from state to state, along with the punishments the states impose. In the era of mass incarceration, it is essential to understand criminology majors’ perceptions on these issues and what effect (if any) a degree in criminology has on their views. This present study surveyed criminology majors at Cabrini University regarding their perceptions of punishments and crime and compared it to non-criminology majors’ perception of punishments and crime. Due to limitations of cross-sectional data, this study examined the factors (e.g. number of criminology classes and class level) that are instrumental in explaining the differences. Additionally, due to the various versions (i.e. some states adopt the agency theory, while some adopt proximate cause theory) of the felony murder rule, participants read two crime vignettes that emulated an actual felony-murder case, whereas, the case information was manipulated in the second vignette with regard to intent and the direct agent of the killing. The main findings will be revealed at the Symposium.

- Croon, Matthew - Fernando Cornejo, James Dougherty, Josh Sanchez, Cheryl Ford, and Yalimet Abreau: Psychology;

Faculty Sponsor: Dr. Ruta Clair

*“Mozart vs. Meditation”*

This study examines how meditation and classical music aim to improve working memory. Research has shown that meditation allows more focus and can rid distraction. Research has also shown that people perform better when listening to background music. We hypothesized that participants would have a greater improvement to working memory when they completed a meditation exercise than when they listened to classical music in the background. Participants completed a baseline test and either participated in a meditation exercise or listened to classical music while completing the test a second time. The participants who went through the meditation exercise completed the test a second time after the meditation exercise was completed. These tests were then analyzed on two factors, sequencing and accuracy, each on a scale from 0-10. Specific results will be available at the Cabrini Arts and Research Symposium.

- Devenney, Deanna: Sociology and Criminology;  
Faculty Sponsor: Dr. Katie Farina

*“Academic Stress and Anxiety and its Effect on the Decision to Drink and Drive”*

Drinking and driving is defined as the illegal operation of an automobile while under the influence of alcohol or when one’s blood alcohol content (BAC) is above the legal limit. Drinking and driving, underage drinking and driving, and/or riding with an intoxicated driver is a pressing matter that must be properly addressed. Although adolescent rates of drinking and driving have declined over the past few years, this remains a serious public health concern, especially among college students (Rehm, 2015). This research project will attempt to determine if there is a correlation between drinking and driving and college students’ mental health status, specifically if one suffers from academic stress and/or anxiety. The data was collected throughout the Spring semester of 2020, and participants consisted of Cabrini University students who consented to the survey. Results will be analyzed and available at the Symposium.

- Faragalli, Noel - Diana VanSickle, Andre Justin, Paulina Repollet, Paola Cabrera, and Sarah Martinez: Psychology;  
Faculty Sponsor: Dr. Ruta Clair

*“The Associations Between Physical Activity, Stress Reduction, and Mood Enhancement”*

This study observed the relationships between physical activity, mood enhancement, and the reduction of stress. It has been evident through decades of clinical research that exercise is not only beneficial, but necessary to live a healthy life. In addition to the prevention and improvement of physical illnesses and complications through consistent physical activity, exercise has also been a factor in enhancing the psychological well-being of others (Parachin, 1996). Moreover, this research has dug deeper in determining how the psychological factors of mood and stress differ in those who are physical active compared to those who are not. Results are not yet available.

- Kuryluk, Alyssa: Sociology and Criminology;  
Faculty Sponsor: Dr. Katie Farina

*“Contact Theory & Views on Currently/Formerly Incarcerated Individuals”*

Many studies have examined and reported on the different prejudices groups of individuals face in society (Calaway, Callais, & Lightner, 2016; Hilinski-Rosick, & Blackmer, 2014; Nordberg, Praetorius, McCoy, Mitschke, & Henderson, 2017; Smith, Meade, & Koons-Witt, 2009). However, scant research has focused specifically on the population of people who are currently or formerly

incarcerated. In this study, the concentration is on this specific population, the prejudices they experience, and how those prejudices can be decreased by applying the Intergroup Contact Theory. A survey using availability sampling was administered to 136 Cabrini University students to investigate the effects that contact with the criminal justice system have on one's views of those who are currently or formerly incarcerated. Results showed a significant relationship between knowing someone who has been incarcerated and the belief that currently/formerly incarcerated individuals are not worse or less than people who have not been incarcerated

- Maslin, Francesca: Writing;

Faculty Sponsor: Dr. Seth Frechie

*“Trauma and Spoken Word Poetry”*

Using spoken word poetry as a processing and coping strategy for individuals who have experienced trauma can foster a healthier mindset while creating lasting positive neurological impacts for this demographic. The qualities of spoken word and the intricacies of this genre, speak to the complexities of trauma. Giving the trauma survivor a voice and a platform to share their story is empowering and inspiring. Through further exploration of the effects of trauma on the brain, body, and mind, the proposed strategy intends to be integrated into pre-existing treatment as an option. In terms of writing as a method of trauma processing, poetry can be useful, specifically spoken word poetry, given the uniqueness of its written and performance components. This is important because this form of expression combines music and theater therapy with the current narrative form of treatment. With very little research on this, my passion for writing and personal experiences have inspired me to develop and model how this would work as a treatment option. Even though there are benefits to including this form of expression as a treatment option, there are also some limitations that could be further explored through additional research.

- Matoney, Sarah and Teddy Burton: Psychology;

Faculty Sponsor: Dr. Ruta Clair

*“The Impact of Music on Academic Task Completion”*

This study examines whether background music increases accuracy and efficiency while completing academic work. This specific experiment analyzes the results of three conditions: lyrical song, non-lyrical song, and silence. The measures include accuracy (how many questions were answered correctly) and efficiency (how many total questions were answered) of worksheets containing math problems. This was completed for all three conditions of sound. The results will be available at the Symposium. It is important to study how background



music affects us while we work because many people do listen to music while completing academic tasks. It is essential to understand how it may hinder or enhance our performance so we can use it to our advantage. Background music is found in a variety of environments such as retail stores, work, restaurants, and at home. Oftentimes, we do not realize how background music or noise affects us in these environments. Understanding how background music can affect our mood and behavior allows us to exert control over ourselves and use it as a tool for our own benefit.

- Medina Raya, Jemmy: Sociology and Criminology;

Faculty Sponsor: Dr. Katie Farina

*“Attitudes Towards Police: Examining the Influence of College Students’ Race and Ethnicity on their Perceptions of Police”*

A recent focus on police-citizen interactions has led to a polarization of attitudes towards police officers. Unfavorable attitudes towards police can have a negative effect on citizens’ cooperation with law enforcement. Thus, understanding the factors that influence citizens’ attitudes towards law enforcement officers is imperative when seeking to improve their relationship. In the past, research has shown that generally, citizens hold positive attitudes towards police (Wu, 2014). However, according to Dowler and Sparks (2008), Hispanics and Blacks tend to hold more negative attitudes towards police than Whites. This study will analyze primary quantitative data through the use of surveys which were distributed to Cabrini University students during the Spring 2020 semester. It is hypothesized that non-White college students will possess a more negative perception of the police than White students and that Hispanic/Latino students will possess a more negative perception of the police than non-Hispanic/non-Latino students. The results will be available at the Academic Symposium during the Spring 2020 semester.

- Mojica, Soylymar: Sociology and Criminology;

Faculty Sponsor: Dr. Katie Farina

*“Parenting Behaviors and Mental Health”*

This research question is going to focus on how parenting styles are affecting children in different aspects, especially those who had an “authoritarian” parenting style. By comparing and contrasting the differences among different parenting styles, this research will examine which parenting style is more effective towards children’s mental health. Research is developed in a survey and will be distributed to Cabrini University students. Results will be available at the Symposium presentation

- Pfister, Kyle: Sociology and Criminology;

Faculty Sponsor: Dr. Katie Farina

*“Perceptions of Capital Punishment: The Relationship Between Religion and Capital Punishment”*

The goal of this project is to see if there is a relationship between an individual’s religion and their perception of capital punishment. Past literature has shown that religion does play a role in shaping one’s opinions on controversial topics, including capital punishment. Capital punishment is controversial and highly debated because the process is systematically ending someone’s life. This punishment can, and has been administered to innocent people. This study will be accomplished by asking Cabrini University students what religion they identify as and then ask them if they support or oppose capital punishment. This data will be collected in the form of a survey and through availability sampling, which means that students will be accessed by entering classrooms, the library, and/or the cafeteria. The sample for this study is approximately N=100 students. The results will be available at the research symposium.

- Porter, Mattie - Guilianna McGinniss, Kelsey Crnkovic, and Katherine Buckman: Psychology;

Faculty Sponsor: Dr. Ruta Clair

*“Impact of Athletics on Academic Performance”*

The purpose of this study was to understand the effect of athletics on academic performance on student athletes. Participants for the study included approximately 150 Cabrini University undergraduate students who were enrolled in a psychology course during the spring 2020 research participation tool. Participants completed a timed reading comprehension test followed by PSAT math questions. After ten minutes, participants were asked to move on to the second part of the survey where they completed questions regarding their athletic identity and demographics. The experiment took approximately 15 minutes to complete. The results will be available at the Symposium.

- Rios, Caytlynn - Tiera Johnson and Siyrah Taylor: Psychology;

Faculty Sponsor: Dr. Ruta Clair

*“Anxiety in Athletes vs. Non-Athletes”*

Anxiety between Athletes and Non-Athletes is the study to discover and compare levels of anxiety and stress of athletes and non-athletes here at Cabrini University. Our group hypothesizes that athletes experience more stress due to their conflicting schedules, less class time, and more responsibilities. It is important to understand the groups different stress levels because this could

better help universities offer support to the specific group. It could also help students to deviate from biases when it comes to the idea that Athletes do not experience the normal stress as an average student due to their “advantages.” Our group created an online Google survey that contains Likert Scale questions, specialized for both groups as well as a general set of questions, open-ended questions, and demographic questions. Results will be available at the time of the Symposium

- Scafidi, Mary: Sociology and Criminology;

Faculty Sponsor: Dr. Katie Farina

*“Male Athletes and their Sexual Behaviors: Are Male Athletes More Sexually Coercive or Sexually Aggressive than Male College Non-Athletes?”*

The objective of the present study was to assess whether male college athletes are more sexually coercive or more sexually aggressive than male college non-athletes. These aspects were looked at in relation to the aggressiveness that athletes show on the field. Athletes are praised for aggressiveness on the field and are not able to differentiate between on- and off-field behaviors. The athletes believe that the aggressiveness that they show on the field is a good way to be in their sexual activity. In a sample at a small university (N=150), athletes were asked about their sexual behaviors and how they possible victimized someone who they wanted to be sexual with. The reason that this research was to see if there was a difference male college athletes and male college non-athletes and their sexual behaviors. The results will be available at the Symposium.

- Searcy, Kirsten: Sociology and Criminology;

Faculty Sponsor: Dr. Katie Farina

*“Depression and Binge Drinking among Collegiate Athletes”*

The purpose of this study is to determine the relationship between depression and binge drinking behaviors among collegiate student athletes at Cabrini University. It is important because the increase of alcohol use and depression levels on college campuses is ramped. Therefore, studies should be conducted to further investigate this issue. The research question in this study is, “What is the relationship between binge drinking behaviors and depression levels among collegiate student athletes?” The methodology used in this study will be using availability sampling method, a non-probability sampling method. The data collection tool survey will be passed out to a sum of 150 Cabrini students (N=150), including 75 student athletes and 75 non-athletes. The surveys will be administered to athletes and students in public settings around campus. The survey will include open and close-ended questions about levels of depression

and amount of alcohol consumption, resulting in binge-drinking. The results will be available at the Symposium of 2020.

- Smith, Julia: Sociology and Criminology;  
Faculty Sponsor: Dr. Katie Farina

*“Sexual Assault Prevention Education Effectiveness”*

This study was conducted to determine the relationship between a mid-Atlantic university’s sexual assault prevention education (SAPE) program and freshmen students’ attitudinal and behavioral changes. Specifically, the researcher wanted to focus on the students’ sexual consent knowledge and rape myth acceptance. It was hypothesized that the program would have no short-term, or long-term, effect on the students’ attitudinal and behavioral changes. Participants were chosen using a purposive sampling method. Data was collected from 208 participants at a mid-Atlantic university in August of 2019 and then again in October of 2019. The researcher used a fixed-panel sample design to distribute surveys to students at three time points: before the program, immediately after, and six-weeks later. The independent variable is the SAPE program. The dependent variables are sexual consent knowledge and rape myth acceptance. A one-way repeated-measures ANOVA was run to analyze the collected data. The results for sexual consent amongst freshmen students were found to be not significant,  $F(2,46) = 1.835, p = .171$ . The results for rape myth acceptance were also found to be not significant,  $F(2, 40) = 0.29, p = .971$ . This indicates that the SAPE program had no short-term, or long-term, effect on the participants’ attitudinal and behavioral changes. Collegiate SAPE programs do not provide students with essential information, therefore, universities are contributing to the prevalent rape culture that is occurring within society. In order to properly educate students on sexual assault prevention, educational institutions need to implement peer-led, bystander awareness interventions.

- Turnbach, Emma - Oluwademilade Adefarati, Devyn Levy, Agnes Reed, Britany St. Hilarie, and Nylie Segarra: Psychology;  
Faculty Sponsor: Dr. Ruta Clair

*“The Salience of Gendered Characteristics in Specific Majors at Cabrini University”*

A college major can determine future career paths as well as limit or expand the opportunities that are readily available to students. The aim of the present study was to determine whether different gender traits are predominant in certain college majors. Six majors were reviewed: Social Work, Biology, Finance, Criminology, Education, and Psychology. The researchers hope to identify which majors at Cabrini University maintain and possibly even foster gender traits

generally associated with a specific gender. The students were surveyed in a classroom setting. Students were instructed to identify their own gender characteristics and answered questions about their major. This sample is considered a convenience sample because both the researchers and the participants frequent the same university (ie. Cabrini University). These majors were chosen from the different departments within Cabrini University in order to represent the majority of academic disciplines provided by the school.

- Vernon, Victoria: English-SEC;

Faculty Sponsor: Dr. Seth Frechie

*“Problem and Solution: Mental Health and Education”*

22% percent of students below the age of 18 years old have a diagnosed psychiatric illness. As an aspiring educator about to enter the world of education, this statistic is overwhelming. In light of it I questioned how I, as a future English teacher, could teach literature in ways that would support the mental health of my students. The idea of teaching a demanding curriculum, while being aware of the mental health status of my students consumed me. I concluded that, while these two factors, education and mental health, may not traditionally be integrated, we can modify them to become so. Regardless of the book, writing prompt, or lesson of the day, there are always techniques available to demonstrate and promote mental health. To apply and demonstrate the possibilities that literature presents for conversation around mental health, I have created a sample lesson plan that is academically enriching and promotes mental wellness. The lesson plan is developed from Sylvia Plath’s *The Bell Jar*, but it can be modified to apply to any book. In my lesson plan, I will explain the process of: 1) starting the conversation; 2) easing the concerns of parents who may object to discussion of mental health; 3) offer techniques to engage students; and 4) discuss ways to ensure the lesson is positive and beneficial for students. In greater detail, I provide teacher instruction throughout the lesson that model ways to confidently lead a mental health discussion among diverse student cohorts.

## School of Natural Science and Allied Health

- Bauer, Anna - Alexas Flax, Sawsan Khogali, and Zachary Martinez: Biology;  
Faculty Sponsor: Dr. Sheryl Fuller-Espie

*“The Examination of Urease Activity in Escherichia coli, Klebsiella pneumoniae, Proteus vulgaris, and Salmonella choleraesuis”*

Urea is an important molecule for the metabolism of nitrogen in animals. The urea cycle produces urea from ammonia. A previous study examined the relationship of urea concentration with ammonia concentration and found that there was a correlation with the two. Other acids were found to inhibit urea hydrolysis. Another study looked at various bacteria in soil and measured their urease activity. It was discovered that these bacteria had high concentrations of ammonia present, and therefore underwent urea hydrolysis. This experiment conducted the urease test on *E. coli*, *K. pneumoniae*, *P. vulgaris*, and *S. choleraesuis*. The bacteria were grown on tryptic soy agar slants. The urea broth was prepared prior to the experiment. Each bacterium for the urease test was incubated in 5 mL of urea broth overnight and in 0.5 mL of distilled water with a urea disk overnight. The urea broth results showed that only *P. vulgaris* had a positive result, but for the disks, all bacteria showed positive, some of which were false positives. Using the disks seems to skew the results of the experiment, so this should not be repeated. Examining microbiota for both urease negative and positive for possible health implications in the future could be interesting to examine.

- Bauer, Anna - Lily Bonner and Victoria Profrock: Biology;  
Faculty Sponsor: Dr. Sheryl Fuller-Espie

*“The Role of Helicobacter pylori in Causing Gastric Cancer”*

Gastric cancer is one of the most prevalent cancers worldwide, affecting about a million people and killing around 700,000 each year. Individuals are diagnosed with stomach cancer at an average age of 68 and can affect all races but has an increased prevalence in Latino Americans and Asian cultures. There are many factors that can increase a person's risk of developing gastric carcinoma. One of the leading causes to this cancer is infection caused by *Helicobacter pylori*, a bacterium that lives in the stomach, which causes lesions that later result in carcinogenesis. However, the exact mechanisms of how this bacterium causes cancer is still under a lot of research. Other risk factors include diets that are high in pickled or salted foods, smoking, family history and genetic factors, such as mutations in the *CDH1* gene. Screening for this cancer involves endoscopy, contrast radiography or serological tests. There are various treatment options

which can include improving one's diet or treating *H. pylori* with antibiotics which has become harder due to antibiotic resistance. Information still remains unknown and future work on finding mechanisms will help to prevent carcinogenesis.

- Bennetch, Mason - Kiara Moore, Savante Thomas, and Ellen Ford: Biology;  
Faculty Sponsor: Dr. Sheryl Fuller-Espie

*“Cystic Fibrosis: A Progressively Fatal Disease that Could Soon be Treated Using Gene Therapy”*

This report examines in-depth the genetic cause of cystic fibrosis (CF). CF is an autosomal recessive genetic disease caused by mutations in the cystic fibrosis transmembrane conductance regulator gene (*CFTR*) that leads to poor hydration of mucus and reduces functions in the respiratory, digestive, and reproductive organs. CF is a chronic, progressively fatal disease that tends to result in decreased weight as well. The *CFTR* gene regulates the levels of chloride and bicarbonate secretion and is vital to proper operation of the epithelia, which is where the CFTR protein is located. There are gene therapies currently available that can stabilize lung disease, but not cure it. However, a single pharmaceutical therapy could potentially treat all classes of CF in the future. Ivacaftor is a treatment that potentiates the channel opening of CFTR and displayed a statistically significant efficacy in a clinical trial run in 2012. The genetic cause behind CF is known, but scientists have yet to develop a viable cure for this fatal disease.

- Daye, Heaven L.: Biology;  
Faculty Sponsor: Dr. Sheryl Fuller-Espie

*“Development of a Flow Cytometry Assay to Investigate the Antimicrobial Effects of Protein Extracts Purified from Eisenia hortensis on the Bacterium Micrococcus luteus”*

The objective of this preliminary investigation was to develop a flow cytometry protocol to study the effects on both cell morphology and viability after treatment with a crude antimicrobial protein extract isolated from the earthworm *Eisenia hortensis* using the bacterium *Micrococcus luteus*. This study used flow cytometry to monitor changes in cellular morphology using forward scatter (FSC) measurements in a time- and dose-dependent manner following exposure to the protein extract. Propidium iodide (PI), a fluorescent viability dye that binds to DNA, was used to investigate cell death by measuring changes in relative fluorescence intensity detected by the FL-2 photodetector in the flow cytometer. Significant changes in cell size (FSC) and viability (PI uptake) ( $p < 0.05$ ) were observed after exposure to the protein extract at 0.5 mg/ml after 60

minutes. An expected finding was a significant number of cells showed a decrease in FSC after treatment (small cells), consistent with shrinkage associated with cell death. Unexpectedly, there was also a shift in the geometric mean in the FSC of the remaining cell subpopulation not corresponding to the small cell category. Experiments are underway to incorporate deoxyribonuclease following extract exposure to determine if DNA released from dying cells is responsible for apparent aggregation of cells observed in the FSC profiles of this subpopulation. Future studies will also address the minimum concentration of the antimicrobial protein extract required to facilitate cell death, and the effects on DNA integrity using electrophoresis techniques.

- Daye, Heaven L. and Ifeoluwa Ashiru: Biology;

Faculty Sponsor: Dr. Sheryl Fuller-Espie

*“Gene Therapy and Elevated Fetal Hemoglobin as Treatments for Sickle Cell Anemia”*

The purpose of this research was to explore the genetic disease sickle cell anemia. More than 95,000 cases of sickle cell per year are identified in the United States. However, sickle cell is more prevalent in countries closer to the equator due to its ability for individuals to be resistant against falciparum malaria, which is prevalent in those areas. Sickle cell anemia is a autosomal recessive genetic disorder that is caused by an error in the  $\beta$ -globin subunit of hemoglobin gene which is responsible for the transport of oxygen through the body. This error in the gene causes irregularly shaped blood cells which causes individuals who suffer from sickle cells episodes of extreme pain due to restriction of blood vessels, inflammation and even in some cases stroke. Hydroxyurea is the most common treatment for patients who suffer from sickle cell and has been successful in patients who have more than two painful episodes a year. Hydroxyurea has proven to be able to reduce the number of painful episodes, keep the red blood cells round and flexible to travel through the blood vessels, and decrease the mortality rate in sickle cell patients. In recent research, scientist have explored the possibility of gene therapy in patients who don't respond well to hydroxyurea. Gene therapy has proven to have the ability to be used as a cure for those who suffer from sickle cell. Studies continue to be released which could be the turning point in sickle cell treatment and cure.



- Flax, Alexas and Kaylyn Galie: Biology;  
Faculty Sponsor: Dr. Anna Blice-Baum

*“The Lifespan and Cardiac and Skeletal Function Analysis in *Drosophila melanogaster* Upon RNAi-mediated Gene Knockdown”*

Physiological analysis of gene product function plays an essential role in understanding cardiac and skeletal muscle performance in *Drosophila melanogaster*. Skeletal muscle makes up 75% of the body’s mass and works to allow flight, jumping, and climbing in flies. Expression of FOXO is essential for growth regulation in all cells including cardiac cells. Aging flies results in decline of function due to the weakening of the cardiac muscles. The UAS-GAL4 system is used to activate exogenous gene expression in *Drosophila*. The GAL4 protein serves as a transcriptional activator. The upstream activation sequence (UAS) is a DNA sequence recognized by the GAL4 protein. The genetic enhancement of GAL4 binding with UAS promotes transcriptional activation, which drives expression of the gene of interest, which may include gene knockdown. The RNAi mediated skeletal muscle-knockdown of CG2830 was investigated to see if proper flight muscular function was inhibited. It was hypothesized that the F1 progeny of the Gmh5-GAL4; UAS-FOXO crossed with the UAS-CG2830 RNAi will show shorter lifespan, and knocking down CG2830 in flight muscle will result in reduced flight ability.

- Galie, Kaylyn and Alexas Flax: Biology;  
Faculty Sponsor: Dr. Anna Blice-Baum

*“Temporal Control of Cardiac FOXO Expression Results in Amelioration of High-dose-associated Acute Dysfunction in *Drosophila* and Restored Heart Function at Old Age”*

Cardiovascular Disease, or CVD, is known to be one of the leading causes of death not only within the US, but also worldwide. CVD is characterized by signature conditions including arrhythmia, vasoconstriction, and cardiomyopathy. In this study, the model organism, *Drosophila melanogaster*, was utilized to observe cardiac function. This organism was chosen due to its quick generation time, short life span, and simple genome, which could be easily manipulated. dFOXO is a transcription factor that is endogenous to fruit flies and is homologous to FOXO in mammals. In recent studies, cardiac-restricted *dFOXO* overexpression improved heart performance of elderly flies. Therefore, our hypothesis for this research was that *dFOXO*-overexpression would increase the life span and prevent heart dysfunction of the elderly flies when exposed to RU486 after middle-age (3-weeks). This hypothesis was tested by obtaining the gene switch Hand-GAL4 driver fly line (heart-specific) and crossing it with the UAS-FOXO line. Then, 3 weeks after the initial cross the drug, RU486, which is

a progesterone blocker that is known to increase lifespan in female flies, as well as the control vehicle, was administered to both male and female flies. Finally, several indices of heart function were analyzed and quantified using the free computer software Semi-automated Optical Heartbeat Analysis (SOHA), including to test diastolic function and heart rate. Ultimately, the flies had improved heart function at an older age when expression was controlled temporally.

- Judkins, Stephanie and Katrina Cabrera: Exercise Science and Health Promotion;  
Faculty Sponsor: Dr. Anjuli Gairola

*“NCAA Divisions in Body Image & Food Disorder”*

The purpose of these studies was to examine and compare eating characteristics and the different body image disturbances in female athletes in the NCAA Division’s, and to show the prevalence of disordered eating and to examine the emotional regulation and possible body dissatisfaction of those female athletes. Developing an eating disorder can lead to other illnesses and can affect the performance of the players as well as their health in the long run. The Eating Attitudes Test-26 and the QEDD are some of the most used tests to help determine the risk factors of someone who has an eating disorder or suffers from disordered eating or body dissatisfaction. The purpose of these studies was to examine and compare eating characteristics and the different body image disturbances in female athletes in the NCAA Division’s, and to show the prevalence of disordered eating and to examine the emotional regulation and possible body dissatisfaction of those female athletes. Developing an eating disorder can lead to other illnesses and can affect the performance of the players as well as their health in the long run. The Eating Attitudes Test-26 and the QEDD are some of the most used tests to help determine the risk factors of someone who has an eating disorder or suffers from disordered eating or body dissatisfaction. The results show that females are at greater risk for eating disorders and body image than men, but men are still able to be found with an eating disorder. In addition, some studies found that non-athletes were not as susceptible with dissatisfaction with their body image and eating disorders.

- Khan, Maria - Heaven Daye and Kaila Wilkie: Biology;  
Faculty Sponsor: Dr. Sheryl Fuller-Espie

*“Performance of Lipid Hydrolysis on Spirit Blue Agar with 3% Bacto Lipase Reagent Utilizing the bacteria Proteus mirabilis and Staphylococcus epidermidis”*

The study of lipid hydrolysis positive organisms is a necessity due to the fact that organisms that possess the enzyme lipase, which hydrolyzes fats, are able to degrade phospholipids and increase their pathogenicity. The products produced

after hydrolyzation, glycerol and fatty acids, are then taken up by a bacterial cell and are metabolized by glycolysis,  $\beta$ - oxidation pathway, and the citric acid cycle. Microorganisms that are able to hydrolyze lipids can cause rancidity which leads to the spoilage of food products. A lipid hydrolysis test was completed using *Staphylococcus epidermidis* and *Proteus mirabilis*. The purpose of this experiment was to positively identify that *P. mirabilis* was the lipid hydrolysis positive organism and to calculate the zone of hydrolysis for the organism. A spirit blue agar with 3% Bacto lipase reagent was used to carry out this experiment. A spirit blue agar plate allows for a lipid hydrolysis to be observed due to a pH indicator. The surroundings of the lipase positive organism becomes acidic due to the release of fatty acids from the organism. The acidity is witnessed by a clear halo surrounding the organism. The *P. mirabilis* was correctly determined to be lipid hydrolysis positive because it had a clear halo surrounding the streak of the microbe. The zone of hydrolysis was determined to be 55 mm. *S. epidermidis* had no halo, therefore, the organism was determined to be lipid hydrolysis negative.

- Mazza, Samantha - Rachel Virtue, Elise Fiore, and Georgina Bamaca Ramirez: Biology;

Faculty Sponsor: Dr. Sheryl Fuller-Espie

*“Neurofibromatosis Type 1: Mutations in the NF1 Gene Resulting in Neurofibromas, Cafe-au-lait Spots, and Bone Deformities”*

Neurofibromatosis type 1 is an autosomal dominant disorder with a mutation of the *NF1* gene on the long arm of the 17th chromosome. The *NF1* gene is responsible for suppressing tumors in human tissues such as white blood cells, brain, spleen, lungs, muscle, and breast cancer. Some characteristics include bone deformities, neurofibromas, and cafe-au-lait spots. The mutations are loss-of-function mutations which are insertions, deletions, substitutions, and duplications. It was concluded that many mutations that occur which yield different phenotypes and risks. Also, the inactivation of *NF1* is not caused by promoter methylation or microsatellite instability. Some potential treatments include laminectomy, spinal fusion, and possibly everolimus

- Melendez, Danielle - Triniti Heyward and Praise Yormie: Biology;

Faculty Sponsor: Dr. Sheryl Fuller-Espie

*“Analyzing the Cause and Effects of the Novel Mutations and Experimental Treatments to Reduce the Symptoms of Tay-Sachs Disease”*

Along with being one of the most extensively studied and well known genetic disorder in the genetic field, Tay-Sachs disease is a lethal autosomal recessive disorder that primarily degenerates the nervous system due to mutations in the  $\alpha$

subunit of a lysosomal enzyme comprised of both  $\alpha$  and  $\beta$  polypeptides referred to as hexosaminidase A, or Hex A. It is most generally found in patients from ethnically or geographically sequestered populations similar to French Canadians, Ashkenazi Jewish infants, and most of the Japanese population. It is important to study Tay-Sachs disease in order to spread the information of this fatal disorder of the destruction of the nervous system and the consequences of having no Hex-A to break down ganglioside GM2. As ganglioside GM2 increases, more severe symptoms develop. There are certain populations affected such as the Ashkenazi Jewish population that are more frequent cases because they are carriers of the fatal mutant inherited disorder. If two parents are carriers of this disorder there is a 25% chance the child will have this disorder. Several of the most common symptoms of Tay-Sachs Disease in infants as young as three to six months include loss of motor skills, such as turning over, crawling and sitting up. The baby also suffers from exaggerated reactions when they hear loud noises. They have frequent seizures, vision and hearing loss, cherry-red spots in the eyes, muscle weakness, movement problems, and delayed mental and social development. As the child grows older, it is most likely for them to pass away between ages 4 and 5.

- Mukova, Francisca - Shilpa Thomas and Stephen Rossi: Biology;  
Faculty Sponsor: Dr. Sheryl Fuller-Espie

*“Genetic Influences Affecting Huntington Disease Onset and Progression”*

Huntington’s disease is a 100% penetrant autosomal dominant disease that is caused by a CAG trinucleotide repeat in the huntingtin (*HTT*) gene. This disease is characterized as a fatal neurodegenerative disease that is sparked by a mutant huntingtin protein (mHTT). One study used cerebrospinal fluid (CSF) to understand how mHTT levels affect an individual with Huntington's disease. In order to do so, an mHTT immunoassay was developed to analyze the mHTT concentrations in CSF samples of individuals that had the Huntington mutation. Another study used genome-wide association (GWA) analysis to determine which loci affect the age of onset of neurological symptoms. Chromosome 15 and 8 were discovered to harbor loci that directly accelerate and delay the age of onset of neurological symptoms. Due to analysis of genetic variations on chromosome loci in affected individuals, evidence suggests that there exists a relationship between the loci and age of onset of cognitive and psychiatric symptoms. There also exists a correlation between mHTT concentration levels and the progression or acceleration of Huntington’s disease.

- Profrock, Victoria - Lily Bonner, Daisy Morquecho, and Margaret Anarfi: Biology;  
Faculty Sponsor: Dr. Sheryl Fuller-Espie

*“The Genetic Basis of the Four Primary Types of Oculocutaneous Albinism and its Association with Racial Prevalence and Family History”*

Albinism is characterized as the absence of melanin which causes a pale pigmentation in the skin, hair and eyes. It is an autosomal recessive disorder that contains many forms. The most common type is oculocutaneous albinism (OCA), which is characterized by a complete lack or decreased production of melanin. There are four primary types of OCA which includes OCA1, OCA2, OCA3 and OCA4. The notable genes responsible for OCA are *TYR*, *P*, *TYRP1* and *SLC45A2* genes and each is specific to the type of albinism. Eye and clinical examinations are used to diagnose albinism, but severe types can become difficult to diagnose based on the phenotypic expression. Molecular testing can be used to accurately diagnose the specific type of albinism. Individuals with this disorder have certain characteristics that are specific to the different types of OCA. People of African and Japanese descent are at higher risk for certain types of albinism. Although there is no cure for albinism, there are ways to help reduce the side effects. This research seeks to understand albinism’s genes, causes, diagnoses and side effects in hopes to obtain more knowledge about this disease.

- Rivera, Ariana - Darian Labroschiano, Adam Sayed, and Jake Newsom: Biology;  
Faculty Sponsor: Dr. Sheryl Fuller-Espie

*“Mutations in CDKN2A Affect the Development of Familial”*

Familial melanoma is a skin cancer that is inherited through generations. This type of skin cancer is malignant, and is often discovered through the changes in nevi. This is caused as a result of various mutations. Familial melanoma is studied most commonly through the familial atypical multiple mole melanoma model (FAMMM) model. Individuals who exhibit this model often have multiple, irregular nevi which is a common indicator of familial melanoma. Through the studies of the FAMMM model, a series of genetic testing, and panel testing some individuals for further studies, it was found that the most common mutation amongst individuals with familial melanoma is the *CDKN2A* mutation. Concurrently, those exhibiting irregular, atypical nevi are often carriers of the *CDKN2A* mutation. While other mutations such as *CDK4* and *BAP1* were found, the *CDKN2A* was most commonly found in familial melanoma cases. The *CDKN2A* mutation is associated with a higher risk of inheritance amongst family members, early age onset, and a predisposition to various other forms of cancer.

- Scarpone, Sophia: Biology;  
Faculty Sponsor: Dr. Caroline Nielsen

*“An Investigation of the Potential Effect of Leaded Gasoline in Relation to High School Dropout Rates”*

Lead is a toxic metal that has been used for multiple purposes over centuries not only in the United States, but globally. Leaded gasoline was first introduced in 1923 and was persistently consumed until 1973. The switch from leaded gasoline to unleaded gasoline was influenced by the push made by the Environmental Protection Agency when realized there was a “significant risk” to an individual's health. The effects of leaded gasoline persists to this day. Therefore, due to the behavior problems lead is shown to cause, those with higher lead exposure have a higher probability of becoming hyperactive, distracted, and having a lower IQ score. These factors can affect one's success in the classroom and can later lead to the inability to finish high school. To study the relationship between the usage of lead in gasoline and the rate of high school dropouts, an analysis was conducted. Data on leaded gasoline use and dropout rates were collected from the United States Geological Survey and the Department of Education. A relationship between usage of lead in gasoline and high school dropout rates were discovered. The fall of lead usage in gasoline began in 1973, therefore prior to 1991, which is 18 years after the decrease, there is a decrease in high school dropout rates, however it is steeper after 1991. However, there are many other variables that affect an individual's ability to finish high school. For future directions, one could study the relationship between the two variables on a regional scale compared to a national scale.

- Sweeney, Rachel: Biology;  
Faculty Sponsor: Dr. Vinayak Mathur

*“Horizontal Gene Transfer Between Different Bacteria and Microviridae Phages to Identify the Mechanism of Bacteriophage-host Relationship”*

Bacteriophages from the Microviridae family are small, single stranded viruses with 4.5-6kb size circular genomes. These viruses are found in abundance in a broad spectrum of environments from marine ecosystems to the human gut. We used bioinformatic platforms like BLAST and MEGA to explore the possibility of horizontal gene transfer (HGT) between Microviridae and several distinct clades of bacteria. We focused on the major capsid protein VP1 for distinct Microviridae phages which has shown evidence of HGT with bacterial hosts. We identified a positive instance of HGT between *Parabacteroides diastonis* bacteria and a parabacteroides phage that infects it. Phylogenetic analysis of bacteria and phage sequences provides further evidence that these two sequences cluster together in their own clade. Comparative genomic analyses of the bacterial sequences shows a degree of conservation of this phage protein indicating some fitness advantage conferred by this horizontal transfer. We want

to expand this research into other similar Microviridae phages to further investigate the mechanisms of bacteriophage-host relationships.

- Walewska, Klaudia - Deanna Wyche and Hunter Steelman: Biology;  
Faculty Sponsor: Dr. Sheryl Fuller-Espie

*“Performing a Casein Hydrolysis Test to Detect the Presence of Proteolytic Enzymes in Bacillus subtilis, Escherichia coli, and Pseudomonas aeruginosa”*

The overall goal of this study was to detect the presence of proteolytic enzymes in *Bacillus subtilis*, *Escherichia coli*, and *Pseudomonas aeruginosa* using a casein hydrolysis test. This test aids in the identification of bacteria that are able to grow in milk and successfully break down casein using these enzymes. This serves importance in identifying problematic bacterial species that may be introduced into milk products and require casein for successful reproduction. A primary peer-reviewed article incorporated in this study further develops understanding of proteolytic enzymes being isolate-specific, and this relates to why some bacterial species express these enzymes and others don't. Another case study presented in this report puts an emphasis on understanding the impact of hydrolysis on the functional properties of proteins, more specifically, casein. In this experiment, it was expected for *E. coli* to not have a zone of proteolysis, while *B. subtilis* and *P. aeruginosa* were predicted to produce a positive reaction, forming a zone of proteolysis. Plate count agar (PCA) was made and mixed with skim milk broth for these plate samples. The plates were segregated and each of the three bacterial cultures were transferred, in a dime size blot, onto the agar using aseptic techniques. After incubation, it was visualized that the expectations were accomplished as *E. coli* did not have a zone of proteolysis, while *B. subtilis* and *P. aeruginosa* both had zones, proving that the bacteria *B. subtilis* and *P. aeruginosa* secrete proteolytic enzymes in milk.



The Department of Visual + Performing Arts (V+PA) at Cabrini University is not letting the pandemic stop us from celebrating our seniors. We are pleased to feature the graduating Graphic Design majors in our very first virtual Senior Design Exhibition! You can view the online exhibition at [www.cabrinidesign.com](http://www.cabrinidesign.com).



**Annual Graduate Arts, Research and Scholarship Symposium  
April 28, 2020**

**Symposium Co-chairs:  
Dr. Sheryl Fuller-Espie, Professor of Biology  
Dr. Michelle Szpara, Associate Professor of Education**



## Graduate Submissions

### School of Business, Arts and Media

- Connally, Patrick: Organizational Development;  
Faculty Sponsor: Dr. Celia Szelwach and Dr. Anton Shufutinsky  
*“An Integrated Analysis of the Impact of Ethical Leadership, Trust and Project Methodologies, Tools and Frameworks on Project Management Success Outcomes: A System Theory Approach”*  
This paper examines the existence and relationship between team-level trust, ethical leadership and project management methods, tools and framework on project management success in multiteam system (MTS) consulting environments. This study proposes a systems theory exploration of professional services delivery organizations where MTS ( $n \geq 3$ ) teams exist. We adopt and apply the influences, characteristics and evaluators (I.C.E.) model proposed by Marques et al. (2013) to study the proposed phenomenon. A quantitative analysis approach is proposed, integrating trust, ethical leadership, and project management success measures to evaluate any relationships.  
Keywords: Trust, ethical leadership, multiteam systems, project success, team performance  
References : Marques, A., Varajão, J., Sousa, J., & Peres, E. (2013). Project Management Success I-C-E Model – A Work in Progress. *Procedia Technology*, 9, 910–914. <https://doi.org/10.1016/j.protcy.2013.12.10>
- Nyamuomba, Kudzai: Organizational Development;  
Faculty Sponsor: Dr. Anton Shufutinsky  
*“Employee Experiences During Corporate Merger and Acquisition”*  
The merging of two companies is dictated by the dominance of the financially stronger organization. During the merger of two successful companies, employee existence is often ignored, often resulting in poor employee retention, forced cultural transition, and loss of corporate core values. Although employees are the catalysts that drive the moving parts of organizations, the acquisition process dictates they are incorporated into and distributed throughout the merged organizations, force-reconfiguring them into organizational cultures with new artifacts and espoused beliefs—ones they are not accustomed to or even aligned with. As a result, employees may be left feeling unwelcome, ignored, stressed,

dissatisfied, and in fear of job instability. The purpose of this study is to explore the lived experiences of employees in acquired companies as they undergo the merger and acquisition process. The study examines the benefits of merging employees and how it transforms new thinking, specifically related to the talent, the work activities and the values of companies before and after the acquisition. The research design is a qualitative inquiry using a storytelling paradigm exploring employees' living stories through a petal methodology, which consists of abstracting, futuring, historicizing and grounding to bring employees' stories to life. The results of the study are not yet available.

- Rawlings, Cynthia: Organizational Leadership;  
Faculty Sponsor: Dr. Anton Shufutinsky

*“An Exploration of Juvenile Trauma-Specific Treatment in The United States”*

The purpose of this research study is to advance to the body of knowledge of the process of trauma-specific treatment in U.S. juvenile detention centers via a clinical staff perspective. This study will potentially have significant implications for future research into Trauma-Informed Correctional Care (TICC), particularly with the potential expansion of deeper theoretical understanding of trauma and care among incarcerated youth and prison populations. The growth in recognition of the importance of TICC represents a revolutionary opportunity to improve our nation's juvenile justice system and decrease the number of our youth lives damaged each year through the harsh and ineffective responses to youth offenses. However, to maximize these efforts, it is necessary to first develop a consensus-based understanding of what constitutes a trauma-specific treatment approach within juvenile justice from the perspectives of clinical staff. The primary research question explores the experiences of clinical staff that provide trauma-specific treatment in juvenile justice facilities, specifically focusing on their experiences with regard to the process of effective trauma-specific treatment approaches. The study design includes the use of an interpretive qualitative inquiry approach, specifically using grounded theory (GT) methodology to understand the processes of effective treatment in Trauma-Informed Correctional Care (TICC) among incarcerated youth. Understanding the processes, and the discovery or generation of theory, regarding youth TICC may assist with the improvement of practices, a framework for future research, or both. The results will not be available at the time of the symposium.

- Rossi, Stephanie: Organizational Development;  
Faculty Sponsor: Dr. Anton Shufutinsky  
*“To Be or Not to Be an Executive? What Influences the Career Choice of Women?”*

Academic and business studies have been conducted surrounding women’s experiences in the workplace, including examination of the contribution of social identity theory and women’s experiences with the phenomena of gender bias, gender sidelining, and the glass ceiling. Another interesting element worth exploration regarding women’s workplace experience is impostor phenomenon (IP). Collectively, these issues can be contributing factors in women’s choices regarding whether they will pursue executive career opportunities. What ultimately drives those decisions? What choices do women make and why? Do organizations need to be more cognizant of how they develop women as leaders? The purpose of this presentation is to review the literature, in preparation for a questionnaire-based quantitative dissertation research study, to measure the extent of IP and the potential relationship between the phenomenon and women’s decisions regarding pursuing executive level career opportunities in their organizations. The research study has not yet been performed; thus, the study results are not available at this time.

### School of Education

- Andersen, Kimberly: Educational Leadership;  
Faculty Sponsor: Dr. Michelle Szpara and Dr. Carolyn Berenato  
*“Restorative Practices: Stakeholder Perspectives”*

The social and emotional learning in school can be overlooked in this time of mandated testing, but it has an impact on student attendance and student achievement, and it carries over into the home. This study looks at restorative practices in a rural secondary campus. The overarching research question being examined through this phenomenological study is: “What are stakeholder perspectives about the implementation of restorative practices?” Interviews were offered to adult stakeholders (teachers, support staff, administrators, and parents) at a rural secondary campus. Through the interviews, the adult stakeholder perspectives on the restorative practices were explored, as well as their impact on

relationships, school climate/culture, and academic achievement. Research from a 2017 meta-analysis completed by Collaborative for Academic, Social, and Emotional Learning (CASEL), a non-profit organization, indicated that schools which had social and emotional learning programs had “significantly improved social and emotional skills, attitudes, behavior, and academic performance” (Collaborative for Academic, Social, and Emotional Learning, 2017). Results of the interviews will be available at the Symposium.

- Benton, Robert: Educational Leadership;  
Faculty Sponsor: Dr. Michelle Szpara

*“Teachers' Ability to Foster Student Creativity in the High-Stakes Testing Environment”*

This study examines a teacher's ability to foster student creativity in the high-stakes testing environment. Through the use of an open-ended survey, this phenomenological study examines the qualitative data from 3rd-5th grade teachers in a well-resourced suburban school district. The intent of this study is to investigate to what extent standardized testing has impacted curriculum in 3rd-5th grade elementary classrooms. A total of nine teachers from a suburban school district participated in the study. NCLB (No Child Left Behind) has impacted the landscape of curriculum in the education system (Longo, 2010). Through the data collected, this study offers a unique perspective of the perceived impact of high-stakes testing on the ability to plan and implement lessons that cultivate creativity. The coexistence of standards-based practices and lessons that cultivate creativity can exist. These two concepts may complement one another, and could be integrated in curriculum (Baer & Garrett, 2010). While no generalizability can be gained from this study, the study found that high-stakes testing does have an impact on teachers' ability to foster creativity in the classroom.

- Booth, William: Education;  
Faculty Sponsor: Dr. Jennifer Gaudio

*“The Effect Differentiated Homework Has On Mathematics Achievement”*

While the study of homework has been in existence for over a century, it is so diverse and examines so many different elements, it's difficult to recognize any definitive conclusion reached as the results of similar studies have often contradicted each other or the studies are not similar enough to compare. The majority of the 8th-grade math students in this sample do not spend the voluntary, yet expected, time on homework. The

purpose of this study is to examine the effect mathematics homework has on the achievement of 8th-grade math students while utilizing choice (a set of scaffolded problems and students select six) as a means to provide appropriate and thus effective homework assignments. Providing choice in homework assignments allow teachers to differentiate to better meet the needs of the individual students and thus an improved learning experience. This extra opportunity to develop their knowledge results in a greater level of academic achievement. Student completion rate, in-class participation as well as assessment scores will all be recorded and monitored to explore the impact of the intervention. Other teachers like me who want to increase their student learning in an efficient, differentiated method may utilize the strategy as described in this study. The results are not yet available but will be at the Symposium.

- Bowman, Sheila Lynn: Education;  
Faculty Sponsor: Dr. Jennifer Gaudioso

*“Writing to Enhance Student Achievement in the Math Classroom”*

It is becoming common knowledge that the need to improve mathematics performance in America is vital. Students have difficulty with content mastery and achievement in the math classroom. With this lies difficulties in reading, interpreting, and discussing mathematical concepts. All of these student-centered problems are overall hindering their content mastery and achievement in the math classroom. Research suggests that increasing writing and vocabulary development in the classroom is essential because without it, there is a negative impact on learning content. Studies have shown that an increased writing and knowledge of content area vocabulary engages students, empowers their thinking, deepens their understanding, and increases their procedural knowledge of mathematics. The purpose of this study is to determine if increased writing and mathematical vocabulary in the math classroom can positively impact students’ mastery of content and achievement levels. The study will be conducted in a rural public high school setting in southeastern Pennsylvania. Students are in grades 9-12 completing any of the following mathematics courses: Algebra I, Algebra II, Geometry, and Consumer Math. Data will be collected through observations, archival data of grades, and student writing pieces. Through data collection a potential relationship between an increased amount of writing to learn strategies using mathematical vocabulary and both student comprehension and achievement will be explored. Results of this study will benefit classroom

teachers and schools interested in improving student mastery and achievement in math.

- Campbell, Susan L.: Educational Leadership;  
Faculty Sponsor: Dr. Michelle Szpara and Dr. Carolyn Berenato  
*“The perceptions of teachers regarding the impact of teacher/student relationships on academic achievement with trauma-affected students in low socio-economic schools”*

This study examines teachers’ perceptions of fostering relationships with students and its impact on student behavior and academic outcomes. The goal was to ascertain whether the relationships between teachers and students have an impact on student achievement with trauma-affected students in low socioeconomic schools. Participants were chosen to represent three different grade levels as they pertain to student social, emotional and academic development. This approach offers valid perceptions of student maturity and the ability of students to connect with teachers in varying grades. In addition, consideration was made to include data from two middle schools within the same school district to offer a valid triangulation of data which would support the varying impact of trauma across the school district. The end goal was to offer opportunities to further evaluate the need for future studies that may support professional development opportunities and a greater understanding of student needs within low socioeconomic schools. Through an interview process at the beginning and end of the study, I will examine the impact of teachers’ self-reflective evaluations of fostering relationships with students. Consideration will be given to trauma-informed care training provided by the school district and how that training dynamically affects the way teachers build relationships with students. The purpose of this phenomenological study is to understand the impact of teacher-student relationships on student academic achievement as it relates to students experiencing trauma in a low socio-economic setting.

- Chisholm, Laura: Educational Leadership;  
Faculty Sponsor: Dr. Michelle Szpara  
*“The Perceptions of Center for Student Success Staff Members Regarding Supports and Barriers for Latinx Students at an Emerging Hispanic Serving Institution”*

With the large discrepancy between the graduation rates of Latinx students and students from other racial and ethnic backgrounds, it is both an equity and an economic imperative that higher education institutions focus on the

retention and socialization of Latinx students. This phenomenological study asked a subset of the staff at an Emerging HSI's Center for Student Success about their perceptions of the supports for and barriers to Latinx students' persistence and completion. The study attempts to describe and interpret the patterns and possible meaning behind the campus culture at an Emerging HSI. This study fills a gap in the literature in which the perceptions of supports and barriers to Latinx student success has not been gathered from Center for Student Success staff at an Emerging HSI. In this mini research study, the researcher surveyed 9 staff members to examine the supports and barriers that Center for Student Success Staff at an Emerging HSI perceive as affecting the success of Latinx students in order to add knowledge to the educational research field and benefit Latinx students. Results indicated that supports and barriers are related to employee representation, language barriers, and financial barriers.

- Czyszczon, Lauren: Educational Leadership;  
Faculty Sponsor: Dr. Michelle Szpara

*“Impacts of Assigned Classroom Settings on the Professional Satisfaction of Special Education Teachers”*

Since the establishment of the Individuals with Disabilities Education Act (IDEA) in 1975, implementing special education services has become more vast and complex for special education teachers. Their immense job responsibilities often have them feeling occupational exhaustion and low self-efficacy. The purpose of this qualitative study, employing a phenomenological methodology, surveyed eight suburban, high school special education teachers to better understand their experiences of professional satisfaction based on their assigned classroom settings. Four isolated program (Autistic Support, Life Skills Support, and Emotional Support) teachers and four inclusion classroom teachers completed a GoogleDoc survey that included two self-rating scales and three open-ended questions to identify contributing factors of burnout, stress, and low self-efficacy, and supports either already in place or suggested for implementation to help ameliorate professional satisfaction. Results confirmed a combination of common and differing factors and supports dependent on job assignment. The most notable factors of burnout amongst both groups included the abundance of paperwork and large caseloads; however, isolated teachers note the stressors of handling challenging behaviors while their inclusive colleagues mention struggles with student apathy and their inadequate feelings to fully support special education students. The most prominent support deemed necessary from

both groups was the need for more time; though, it is noted that the two groups of teachers identified varying uses of this time. It may be necessary for administrators to take into consideration the differing job duties when creating schedules and planning professional development in order to retain highly-qualified and effective special education teachers

- Davidson, Jaclyn: Educational Leadership;  
Faculty Sponsor: Dr. Michelle Szpara

*“The Perceptions of Middle Level Educators on the Prevalence and Academic and Social-Emotional Impact of Bullying on LGBTQ Students”*

The purpose of the research is to determine teacher perceptions regarding the academic and social impact of bullying on middle school students. This qualitative, phenomenological study asked teachers and educational support professionals of 7th and 8th grade students in a suburban public school about their perceptions of the impacts of bullying, with a focus on students who identify as LGBTQ. By using anonymous, online surveys, I was able to determine the views of teachers, and also determine potential areas for future study. This pilot study may lead to greater understanding of both student needs, and also the needs of the teachers, as well as if the teachers feel adequately equipped to work with students who identify as LGBTQ. The results indicate that teachers observe a number of microaggressions aimed towards LGBTQ students, as well as bullying having a significant impact on both the emotional and academic health of students. In addition, educators felt that there was inadequate training, and that they are not fully equipped to deal with the issues and needs that arise when a student who identifies as LGBTQ is bullied.

- Diszler, Suzanne E.: Educational Leadership;  
Faculty Sponsor: Dr. Michelle Szpara

*“Perceptions of Teacher Attendance on Student Academic Performance”*

Teachers are constantly looking for areas in which they can improve classroom instruction, as new strategies are being developed, and best practices are being put into place, but teachers must also look at the effect that their attendance has on their students’ academic performance. The purpose of this qualitative study was to look at the perceptions that 21 general and special education teachers in a large suburban school district have on the effects that their attendance has on their students’ performance. The participants in the study answered a 14-question open-ended survey as part of a regularly scheduled staff meeting. The findings of the study showed that both general and special education teachers felt



that student misbehavior, interrupted learning and disrupted routines were the largest areas of concern when teachers were absent. It was also found that many classroom teachers would leave substitute plans that included assignments that reviewed previously learned material or were modified to meet the needs of a substitute who was not familiar with the grade level or teaching style. The data shows that when study participants reported taking discretionary days off they felt as though their attendance did have a negative effect on their students' academic performance. Teachers reported that their students were happy or excited to see them once they returned to school. Many factors can contribute to the academic success of elementary age students, but one must not overlook the importance of the classroom teacher being present each day.

- Elhady Abdelhalim, Ahmed Mohamed -International Guest Student: STEM Education; Faculty Sponsor: Dr. Michele Oswald  
*“Effectiveness of STEAM approach in developing achievement and mathematical creativity for Egyptian governmental language primary school students”*

Mathematical creativity and achievement are considered as challenges facing both teachers and researchers in the field of education. STEAM – Science, Technology, Engineering, Art, and Mathematics – is a new approach especially in Egypt, which can impact students in many areas. This study aims to identify the effectiveness of the STEAM approach at the primary school level. The main question is: What is the effectiveness of the STEAM approach in developing Mathematical creativity and achievement for primary school students enrolled in the Egyptian official language schools? The study results will help in drawing attention toward improving teaching/learning using the STEAM approach. The study sample consists of grade 5 (70) students of a language school in Egypt. The sample was divided equally into two groups: the first is the experimental group, who were instructed by the STEAM approach; the second was the control group, who were instructed by traditional ways used in Egyptian official schools. The same teachers teach the two groups. The curricular tools were prepared by the researcher: (1) STEAM-approach based unit; (2) Mathematical creativity test; and (3) Achievement test. The results show (1) a statistically significant difference  $\leq 0.05$  between the achievement posttest means of the two groups (experimental and control group) in favor of the experimental group, and (2) a statistically significant difference  $\leq 0.05$  between the

creative thinking posttest means of the two groups (experimental and control group) in favor of the experimental group.

- Eubanks, Aisha: Educational Leadership;  
Faculty Sponsor: Dr. Michelle Szpara

*“Implementation of Trauma Informed Practices in Title 1 Urban Schools: Educators’ Perceptions”*

There is an increasing need for service providers who service the most vulnerable communities with high adverse childhood experiences (ACE) to identify prevention strategies that support and reduce the potential risk of high ACE scores. Few studies focus on the perspectives of educators and educator support professionals who are working directly in schools within communities where African-American /Black students have disproportionate rates of community or personal traumatic experiences. This qualitative grounded theory study provided open-ended surveys to educators and educator support professionals to examine current perspectives regarding incorporating trauma-informed practices in a high school deemed an under-resourced, low socio-economic, urban school district or Title 1 urban school. These schools are known to have a high percentage of African American/Black students. Data collection methods included participant selection based on the criteria that they work within a Title 1 urban school in a large metropolitan area. The research gives an overview of the following perspectives from educators and educator support professionals: 1) Necessity and effectiveness of Trauma-Informed practices in their current schools; 2) Potential barriers and challenges with adopting a Trauma-informed approach; and 3) Potential barriers preventing staff members from adopting a Trauma-informed approach. By examining the educator and educator support professionals’ perspectives, recommendations of trauma-informed intervention strategies useful in Title 1 urban schools are identified in order to establish a positive learning environment for African American/ Black students experiencing traumatic and challenging events.

- Forgrove, Brittany: Education;  
Faculty Sponsor: Dr. Michelle Szpara

*“Positive Behavior Reinforcement: What Ways Can It Improve A Middle School Environment”*

This paper explores the different ways a positive behavior reinforcement system impacts a middle school environment. Over the past decade, many school districts across the United States have implemented a school-wide

positive behavior system. This paper will outline research conducted by others detailing the history of positive behavior support in school systems (PBSIS), determining how the system works and outcomes from implementing the system. My research will consist of classroom observation, office referral data, and student and teacher interviews to focus on the ways the system improves the middle school environment as a whole. Research will be conducted at a school in a suburban region in the northeastern United States. Focus will be specific to grades sixth through eighth to determine what ways a PBSIS program impacts a middle school environment. The results of my findings will be available at the Symposium.

- Gauthney, Joy: Education;

Faculty Sponsor: Dr. Jennifer Gaudioso

*“Comprehension in Kindergarten: Helping Students Find Meaning”*

There are many milestones which kindergarteners reach as they settle into their new roles as life-long learners. Of those milestones accomplished by kindergarteners, learning to read is an achievement that has a lasting and significant effect on early learners. The lack of a sound early literacy skill basis in kindergarten is so profound that its absence impacts learning in third grade and above. The purpose of this program evaluation is to determine if the practices and strategies implemented in an urban kindergarten reading program aligns with research based practices as well as the Pennsylvania Core Standards. Kindergarten reading programs aim to focus on early literacy skills (alphabet instruction, phonological awareness, and phonics) which support future comprehension of text. Additionally, reading programs established for kindergarten, are designed and executed in alignment with the Pennsylvania Core Standards. To conduct this program evaluation, the initial step was a review of research based practices surrounding early literacy and comprehension skills. The examination of the research facilitated a creation of a benchmark which indicated common best practices. The research based practices were then used as a guideline to analyze and evaluate the reading programs. Through the assessment of the reading programs, the goal was to capture the programs' embedded objectives to determine if they either meet or lack the components necessary to meet the literacy needs of early readers. This program evaluation would benefit educators who seek to apply researched based practices within their classrooms that will support the necessary foundation for early readers.

- Hale, Jennifer: Educational Leadership;  
Faculty Sponsor: Dr. Michelle Szpara and Dr. Amy Gratch Hoyle  
*“Courageous Conversations: Teachers’ Perspectives about the Students They Teach”*

Studies on the preparation of pre-service teachers suggest that they are not adequately prepared to interact with students from diverse backgrounds. The purpose of this qualitative study was to examine how Courageous Conversations can shift the perceptions or biases that teachers may or may not have about minority students from low socioeconomic backgrounds. By utilizing interviews, novice and seasoned teachers will share their beliefs and experiences of engaging in Race Talks and how it impacted their work with minority students from low socioeconomic backgrounds. Findings from the interviews will highlight the importance of this type of dialogue to influence a more in-depth understanding that teachers have of the populations they serve. Exploring these perceptions through this type of open discussion can shift the thinking the teachers have, which may lead to a better understanding of the students, parents, and their community. The information gathered from the data sources may also provide evidence for low performing public schools who struggle with finding strategies for addressing teacher attrition and aiding teachers, especially novice teachers, with building stronger relationships with the students and parents in their school.

- Hanbeck, Diana: Educational Leadership;  
Faculty Sponsor: Dr. Michelle Szpara  
*“Incidental Social and Emotional Learning in Middle School to Support Student Mental Health”*

The purpose of this qualitative phenomenology is to explore teacher perceptions of their responsibility to support student mental health in schools and investigate their understanding and use of incidental social and emotional learning strategies when no social and emotional learning (SEL) curriculum exists. Though there have been numerous studies on specific curriculum-based SEL programs, there is limited research on how SEL strategies are used when no universal curriculum is in place. Identifying methods, needs, and barriers can help districts create programming based on their specific school needs, since research-based programs have different focus areas. Ten teachers in a suburban middle school completed a Google form containing a mix of fixed-choice and open-ended responses. Random purposeful sampling was used. Following the framework developed by the Collaborative for Academic, Social and

Emotional Learning (CASEL, 2017), teachers identified the areas of social and emotional learning which they support most frequently in the classroom: self-awareness, self-management, social awareness, relationship skills, and/or responsible decision making. Teachers were also asked to identify barriers to supporting social and emotional learning. Results will be available at the symposium.

- Heft, Elizabeth: Educational Leadership;  
Faculty Sponsor: Dr. Michelle Szpara and Dr. Maria Schwab  
*“The Emotional Impact of Disruptive Behaviors on Inclusive Elementary Teachers”*

Inclusion is a popular term. The concept is not new, as it has been part of United States educational policies for over fifty years. Current research focuses on teacher attitudes and training in regard to inclusion. There is limited research exploring the emotional impact of inclusion on teachers, and in particular, general education teachers in the United States. The purpose of this critical disability theory study is to understand the emotional impact on general education teachers at the elementary school level who include students with disruptive behaviors. In a pilot study, four teachers, in grades 1 and 2, were individually interviewed. In examining the data collected, I discovered a pattern of teachers questioning their decisions to remain in education when faced with the emotional stresses related to their feelings of inadequacy, as well as the toll on their physical and mental well-being when providing an inclusive learning environment. The addition of a survey to this research will set the foundation for a broader sample and support triangulation of the data for an anticipated case study. The results of the pilot interviews suggest that more needs to be done to prepare and support general education teachers for meeting the needs of diverse learners, but also to address the emotional management needs of the teachers themselves. The results of the survey instrument will be available for the Symposium.

- Houston, Kelly: Educational Leadership;  
Faculty Sponsor: Dr. Thomas Conway and Dr. Michelle Szpara  
*“Math Anxiety, Self-efficacy, and Motivation in the Flipped Math Classroom”*

The purpose of this qualitative, phenomenological study is to discover how learning in the flipped classroom model impacts math anxiety, self-efficacy, and motivation at the middle school level. The researcher noticed that many of the studies that have been done about flipped classrooms have focused on academic achievement and materials that are available to

implement this type of learning, and there seems to be a gap in the literature when relating this style of learning to these three attributes (math anxiety, self-efficacy, and motivation). Flipped classrooms allow students to begin to create an understanding of the material prior to the class meeting. The direct instruction usually occurs at home, utilizing some type of technology, while the classroom time is designed to strengthen and deepen the understanding of each concept. The participants of this study are 22 eighth grade students that are members of a pre-algebra class. These volunteers will complete a survey designed to identify their levels of math anxiety, self-efficacy, and motivation when learning math utilizing the flipped classroom model. This study will also use focus groups and individual interviews to determine common themes among the students' experiences relating to the designated attributes. These themes could identify the initial triggers of math anxiety as well as possible strategies to alleviate the stress and increase levels of self-efficacy and motivation, so that students can be successful in math on a daily basis

- Jimenez, Tequila Amber Precious: Educational Leadership;

Faculty Sponsor: Dr. Michelle Szpara

*“Analyzing the effects of trauma on the African American males who have been incarcerated within the American judicial system”*

The apprehension experienced by African American males leads to the research question on the long-term effects of being incarcerated, potential traumatization, and the effects of individual quality of life post-incarceration. Encounters that have happened between the criminal justice system and the African American male population, in general, raise the question as to the population being an unconscious target as evidenced by the illegalization of racial profiling. The reality of being involved within the penal system can possibly lead to different levels of traumatization. The research will focus on the potential development of emotional and/or mental health disorders that stem from traumatization experienced during their incarceration. The sample size will consist of 5 to 7 participants between the ages of 25 to 40 years old who are not incarcerated, but who have experienced incarceration more than once. The methodology will include eight interview questions along with field notes on the observation of the interviewee's responses. The participation is specifically voluntary. The interview questions were developed in order to obtain individual reports by the former detainees of possible traumatization due to incarceration, as well as examining pre- and post- mental health statuses.

In addition, I will examine by comparison the pre- and post- incarceration traumatization effects on the individual. The results of the research findings will be provided at the Symposium.

- Justice, Janine: Education;

Faculty Sponsor: Dr. Michelle Szpara

*“Impactful classroom management practices in culturally and linguistically diverse classrooms”*

This study explored classroom management practices and strategies used by teachers who are culturally and linguistically different from their students in an under-resourced school. Today, more than ever, students are from diverse, non-White backgrounds. This leads to more English language learners in the classroom or English as a Second Language. I conducted this research during the 2019-2020 school year. The research consisted of interviewing five teachers in different schools who have diverse classrooms. All the teachers work in an urbanized school district in a state in the Northeast section of the country. The interviewees have been teaching for longer than 10 years in a K-8 school. Further research was conducted using empirical journal articles and prior studies on the same subject. It is my goal to learn the most impactful practices to meet those students’ needs and help them succeed, once I am in my own classroom. Results are not yet available but will be available at the Symposium.

- Laffend, Karin: Educational Leadership;

Faculty Sponsor: Dr. Michelle Szpara and Dr. Carolyn Berenato

*“Perceptions of Students from Low-Income Backgrounds on Preparedness for Transitioning to High School”*

The purpose of this study is to give a voice to students who have successfully transitioned from the familiar environment of the charter school they attended in primary grades, to a high school that mirrors, more closely, the demographics of higher learning environments as well as wider society. Findings from this study may impact strategic planning and, in turn, contribute to more equitable opportunities for minorities from a low socioeconomic background in the United States public school system. This study asks what is a successful transition from middle school to high school for a low socioeconomic minority student from an inner-city charter school; specifically, what is the perspective the students have regarding what should happen between eighth grade and high school years? Both Critical Theory and Critical Race Theory (CRT) focus on

empowering individuals to transcend imposed restraints, including race, gender, or social class constructs (Creswell, 2013). This ethnographic study will counter the stereotype regarding the subjects' ability to succeed academically in a white-middle-class society. Through surveys and interviews, data will be collected to create the counter-narratives, which will be available at the symposium.

- Lawrence, Morgan: Education;

Faculty Sponsor: Dr. Michelle Szpara

*“The impact of teacher consistency on a school-wide behavior program within the elementary school setting”*

My research will address the following question: how does teacher consistency impact the implementation of a school wide behavior system within an elementary school? Many schools today institute a school wide behavior system to improve the climate and behavior of students in the school. While these systems have good intentions and look great on paper, teacher consistency and follow-through need to happen in order for these programs to work with fidelity. This study focuses teachers' (K-5) consistency within a newly implemented behavior system at a suburban elementary school in the northeast section of the United States of America, and their views and attitudes regarding consistency in implementing the behavior program. Data was collected through voluntary surveys as well as interviews over the course of 8 weeks. It is my goal to determine the impact that teacher consistency has on running the school wide behavior program with fidelity.

- Mallaghan-Rasco, Suzanne: Educational Leadership;

Faculty Sponsor: Dr. Michelle Szpara

*“Experiences of first-generation female-identifying undergraduates leading to success at the university level”*

This study (through interviews) will examine the needs of first-generation female-identifying undergraduates across diverse racial, socio-economic, and immigration statuses in a four-year institution of higher education (IHE). Much of the current research focuses on individual ethnic groups versus all female first-generation IHE students in general. My purpose is to understand the needs of female and female-identifying students rather than looking at each ethnic group individually. I hope that results of this study will lead to recommendations for enabling students to utilize their strengths while minimizing their challenges. As diversity increases in the United States, professors and advisors need to be attuned to these



students' needs and struggles in order to best support them in their IHE endeavors. First-generation women attending IHEs today are different than those of years past, more diverse in nationality, culture, language and socio-economic conditions. Familial responsibilities and expectations, cultural sensitivities, and feelings of belonging or disconnect may also influence students' abilities to persist through degree completion. With increased awareness of student needs, institutions of higher education may better support students towards completion of their degrees. The information derived from this research may be used to enhance recommendations for professional development for professors and advisors, as well as programming and support for students. The key research question is as follows: what do first-generation female undergraduates identify as needs in order to complete their higher education goals, and what supports and interventions do they identify as most helpful in assisting them in meeting their goals? Results will be available at the symposium.

- Marsden IV, Thomas Jay: Education;  
Faculty Sponsor: Dr. Jennifer Gaudioso

*“Improving Civil Online Reasoning at the Secondary Level”*

The methods of active citizenship through analogue means are eroding and the future of an informed electorate must use the proper skills and strategies to navigate digital resources. Through examinations into the intervention needed to measure student competency at the secondary level, this study investigates curricula that can inform students about the digital domain by evaluating and improving informed decision making from genuine sources. The research of the Stanford History Education Group found widespread confusion between news and advertisements as factual evidence by secondary students. Using fact checking skills and digital literacy tools, students can improve critical thinking about political topics. A baseline assessment on media literacy will be used to evaluate digital literacy prior to a series of research challenges, which will be evaluated using national standards. Merging new models of engaged and participatory politics develops a framework from media literacy for students and future constituents. The key results, conclusions and recommendations will be presented during the Symposium.

- McShay, Ryan P.: Educational Leadership;  
Faculty Sponsor: Dr. Michelle Szpara

*“Through the perceptions of 7th-8th grade mathematics teachers, what are some of the self-identified reasons they persist and retain in Title I schools?”*

In an era of education defined by standards and accountability, teacher retention continues to be a leading factor contributing towards student achievement levels. Particularly in under-resourced, Title I-funded schools, the challenges of maintaining adequate staffing of highly qualified educators, especially in mathematics and sciences, remains a pressing challenge and obstacle towards learning outcomes. While much research exists on the reasons for teacher attrition and movement out of the education field, limited accounts explore the converse of this issue – what causes teachers to continue working in high-turnover schools. This qualitative case study explores the reasons for teacher retention and persistence in one of these schools and highlights recurring themes within the self-reported perceptions of beneficial supports and incentives which decrease turnover. Data collection utilizes online GoogleForm surveys distributed to 7th-8th grade mathematics teachers who have three or more years of experience in a Title I school. The results from this survey will be available for the Symposium.

- Mignogno, Stephanie: Education;  
Faculty Sponsor: Dr. Jennifer Gaudioso

*“Increasing Student Engagement with Novels in English Language Arts: A Curriculum Evaluation”*

As students move from elementary school to middle school and high school their engagement can decline. In English Language Arts classrooms this disengagement is apparent during reading instruction. This curriculum evaluation will serve to measure the engagement level of an 8th English Language Arts curriculum at a local junior high school. Specifically, this evaluation will focus on the particular novels used throughout the year. Using a reading engagement survey that was given to the 8th grade English Language Arts teachers working at the school, along with research on the curriculum considerations and best practices that should be employed in an English Language Arts classroom, the following was found: 1. Curriculum texts must be relevant and relatable to students while fostering autonomy and self-efficacy. 2. Texts should reflect students’ culture and interests. 3. At some point during the year students should be given the opportunity to choose what they will read. In order to determine if the curriculum under review meets these needs, more

research on best practices and text choice considerations will be completed. This will be used to create a rubric that reflects the highest bar possible for an engaging English Language Arts novel curriculum. The Curriculum under review will be compared to this rubric, and recommendations will be made.

- Moore, Kristen: Education;  
Faculty Sponsor: Dr. Michelle Szpara  
*“Regular education teachers’ views on creating successful inclusive classrooms”*  
My research centers around the following question: what are the views of regular education teachers regarding the preparation, training, and support they receive to create successful inclusive classrooms? More frequently students with special needs have been integrated into regular education classrooms, which has impacted the way general education teachers structure their classroom to meet the needs of all students. This study focuses on the views and attitudes of general education teachers in Dragon Hills Middle School (pseudonym) on how well prepared and trained they are to create and maintain a successful inclusive classroom. I primarily focused on teacher data through the application of surveys and face to face interviews for 8 to 12 weeks. It is my goal to help organize and establish more professional development for the teachers who do not feel they have an adequately inclusive classroom. The results will be available at the Symposium.
- Norton, Joseph: Education;  
Faculty Sponsor: Dr. Michelle Szpara  
*“How can technology impact academic achievement in 5th grade mathematics?”*  
The purpose of this paper is to help educators take a look at the impact of technology on academic achievement in a fifth-grade mathematics classroom. In today’s educational system, many school districts are beginning to incorporate many uses of technology into the classroom and curriculum. Teachers are being asked to use this technology in many ways that they are not trained to do, in order to raise standardized test scores and increase rigor in the classroom. When used properly, technology can be a valuable tool for teachers and students alike. How can we use this technology to increase scores? Does technology impact academic achievement in a positive way? The district where I currently teach is a district that has pushed the one-to-one student to technology initiative to grades fourth through tenth grade and has plans to have each student in the district K-12 be equipped with their own device in the near future.

Participants in this study were asked to follow normal educational practices within a mathematics classroom for two units in a fifth-grade math curriculum. Participants from two separate classes were asked to complete a unit with the use of their school-issued device and a unit without their Chromebook. Normal curriculum assessment scores were collected and kept confidential for this study. Participants were asked to complete a survey at the end of the second unit of the study that asked their preferences in the use of technology and how they think it helped them succeed. Results are not yet available but will be available at the Symposium.

- Pardini, Patricia: Educational Leadership;

Faculty Sponsor: Dr. Michelle Szpara

*“The Impact of a Scripted Reading Program on a Title I Middle School through the Perspectives of Teachers”*

With the rise of high-stakes testing, scripted reading programs have gained popularity in schools all over the country. These programs are alluring to districts because of their promise of quick results on standardized testing and their “cover everything” model that forces every classroom to follow the same script, therefore providing the same education for each student. The districts can pay for specific programs or school-wide reform programs that claim to help the entire school progress towards better outcomes on state-mandated tests. These programs are more likely to be found in high poverty, urban schools that are struggling with meeting the state requirements on scores, attendance, etc. These schools are also more likely to have teachers with less teaching experience, which can explain the appeal for principals who want to ensure that content is being covered in the same way across their buildings. This qualitative study will focus on the impact of a scripted reading program on a Title I middle school through the perspectives of teachers. The ontological perspective shows that they perceive the impacts differently because the reality of the program looked different in each of the classrooms and in how they chose to implement the program. The results of the research could help districts understand what impact scripted programs may have on their schools and if this type of program will benefit their district. The results of the study will be available at the symposium.

- Parris, Jaime: Educational Leadership;  
Faculty Sponsor: Dr. Michelle Szpara

*“Exploring the Perceptions/Experiences of African American Young Males in Under-Resourced Public School Districts”*

The purpose of this study is to examine how African American young males, in 12th grade and 18 years or older, perceive their public school education experiences in an under-resourced school district. The study will address the feelings African American males have towards their under-resourced school district and possible misconceptions African American males have in regards to the concept of education and the educational system. The goal of the study is to examine any themes that arise among the students who have experiences with public school education in an under-resourced school district. The study will bring to light ideas and goals of new teaching techniques targeted to reach African American males.

- Petras, Jennifer: Education;  
Faculty Sponsor: Dr. Jennifer Gaudioso

*“A Study of Inclusive Best Practices in Math Education in the Least Restrictive Environment for Students with Learning Disabilities”*

Oftentimes, students have difficulty learning in the least restrictive environment. The purpose of this study is to increase learning of special education in an inclusive co-taught math classroom in terms of number sense. Guided by the 2004 Individuals with Disabilities Education Act (IDEA), this study examined four learning disabled students in an inclusive regular education co-taught math class and the best inclusive practices surrounding small group math instruction using the CPA (concrete-pictorial-abstract) delivery of service model in daily instructional learning. The question one needs to ask is how to best teach students inclusively in the least restrictive environment. Over the course of the intervention, student instruction in the core math curriculum was driven by performance data, such as observational checklists, progress monitoring in small group instruction, exit tickets, and end of unit assessments. Data was analyzed qualitatively. In conclusion, the study found an increase in study proficiency for the four students with learning disabilities following the study of the unit five curriculum on number sense concepts. Moving forward, this study would benefit the research which suggests the positive benefits of co-taught instruction in conjunction with a regular education and special education teacher. To provide students with a free, appropriate, public education (FAPE),

students can learn alongside grade-level peers in the inclusive setting to increase the least restrictive environments percentages in the general education setting.

- Reels, Serita M.: Educational Leadership;  
Faculty Sponsor: Dr. Michelle Szpara

*“Unseen and unheard: Experiences of racial microaggressions and homelessness among Black male college students”*

Higher education has always been a path towards upwards mobility for Black Americans. However, Black students, particularly males, struggle to achieve academically while battling racial microaggressions at predominately-White institutions (PWI’s). To complicate matters further, Black male students are more likely than their non-Hispanic White male counterparts to experience homelessness and/or housing insecurity during college. Consequently, housing instability can significantly affect academic performance and reduces the odds of Black men completing a college degree. An exploration on the intersectionality between race and homelessness among Black male college students has received little attention in the literature. The objective of this study was to examine how experiences of racial microaggressions and homelessness for Black male students intersect to affect the college experience. Utilizing qualitative research methodology, a focus group discussion was conducted with six Black male students at a private four-year PWI. The focus group data was tape-recorded, transcribed, coded, and analyzed for themes and patterns using grounded theory. Findings show that most students experienced racial microaggressions from both teachers and peers, and students described their college experience as “neutral” because of feeling stereotyped, unwelcomed, and not engaged in student life. Of those who experienced homelessness or housing insecurity during college, invisibility and competing demands were common feelings expressed. Findings from this study are intended to foster deeper understanding and meaningful inquiry to guide future research on the intersection between racial microaggressions and homelessness and its impact on academic success for Black male students at PWIs.

- Roulston, Robert: Education - CIA;  
Faculty Sponsor: Dr. Jennifer Gaudio

*“Best Practices for Demonstrating Number Sense through Place Value”*

Student ability to explain place value is an area students find challenging. This was a recurring challenge for students as observed through

assessments, discussion, and general problem solving. The purpose of the study was to identify and evaluate the program and practices currently available to students. They have had difficulty demonstrating and communicating number sense through place value of integers and decimals. This program evaluation explored how use of instructional strategies could improve upon a pre-existing curriculum for areas of need in regards to place value acquisition. The research explored instructional practices currently used in the core program and explored the integration of number-sense building strategies, such as Number Talks, as a core program strategy to improve a student's understanding of place value. By the end of the study, the instructional program will be evaluated for strengths and weaknesses in approaches related to a providing a progression of instruction designed to build student number sense of place value. Recommendations will be made for students to obtain a deeper understanding of place value and therefore have a deeper sense of understanding of numbers and their values. This research was intended to foster a mathematical environment of deeper learning and understanding for future students.

- Scanlon, Jordan Elizabeth: Educational Leadership;  
Faculty Sponsor: Dr. Michelle Szpara

*“Impacts of Project-Based Learning in the ELA Curriculum on Student Engagement and Performance at the Third-Grade Level in a Low-Income School”*

Project-based learning (PBL) has gained popularity as an alternative to traditional instruction and learning. Research has shown PBL’s positive impact on student engagement and learning, especially at the middle- and high-school levels. Based on the ideas of John Dewey, Jean Piaget, and Lev Vygotsky, PBL promotes student autonomy in the classroom, supporting a more student-centered approach to instruction and learning. However, much of research surrounding PBL focuses on the higher-level grades and content areas like Science, Mathematics, and Social Studies. Two areas that show a gap in the literature are: (1) PBL in the English Language Arts (ELA) Curriculum and its impact on student engagement and performance; (2) PBL at the elementary level in low-income schools. The purpose of the qualitative research study was to determine teacher perceptions regarding the impact PBL in the ELA Curriculum has on student engagement and performance at the third-grade level in a low-income school. Teachers selected from an urban public elementary school in Pennsylvania completed an online, open-ended survey. The data

showed that participants had a general understanding about PBL, and agreed that it impacted student engagement and performance. Participants admitted that although they believed in the importance of PBL, they felt they were unable to adequately use it in their classrooms without certain supports.

- Shookster, Angela: Education;

Faculty Sponsor: Dr. Michelle Szpara

*“Determination of Socioeconomic Status and its Impact on the Over-Identification of Students in Special Education”*

My essential purpose for this research is to investigate the following question: How might socioeconomic status impact the over-identification of students with a disability or special needs? I’m working to find if students who reside in a low socioeconomic area are eligible for special education services based on a true disability or because they are not provided with the necessary resources, instruction, and supports needed to progress through the general education curriculum. My data will be collected primarily through a teacher survey/questionnaire and a parental interview. I am focusing on teachers who are employed by and parents that send their children to Garland Elementary (pseudonym). I will be distributing an electronic survey to the teachers. There will be 5 questions, and it focuses on the specific resources and tools that are available in our area. I will also be conducting interviews with parents. The questions pertain to availability of services, relationships with staff and administration, and parent/guardian abilities. Finally, I will be looking at public data to see how Garland Elementary ranks against other schools in the area or in the state. It is my goal to bring awareness to this problem. The results will be available at the Symposium.

- Taddeo, Julie: Educational Leadership;

Faculty Sponsor: Dr. Michelle Szpara

*“Supports needed to help first-generation students graduate in the Allied Health Science Programs”*

In this phenomenological study, the researcher will survey students in the nursing and occupational therapy assisting (OTA) programs to better understand, from the student perspective, what supports are needed in order to successfully complete and graduate in an allied health science program. First-generation, low socio-economic students have a lower graduation rate than their peers who have at least one parent who graduated from a bachelor’s degree program. Students participating in the



survey are currently attending a small, private, two-year institution, have taken their general education courses, and are now enrolled in classes specific to their major. The results of the study show that first-generation students often do not have financial support at home. The financial supports affect the amount of time the student has to study because they have to work more hours to help support their family.

- Toombs, Christien: Education;

Faculty Sponsor: Dr. Michelle Szpara

*“Restorative Practices Within the Classroom”*

This study explored the implementation of restorative practices within the classroom environment and examined how establishing relationships decreases behavior referrals that remove a student from the school community. I conducted this research during the 2019-2020 school year with my 7th grade secondary homeroom class at Beacon Hills Middle School (pseudonym). There were 30 students and 5 teachers who participated in this study. For the purposes of this study I primarily focused on the use of restorative circles in secondary homeroom once a week for 8-12 weeks to establish and maintain relationships with my students. It was my goal to build positive relationships in the hopes that behavior referrals would decrease from the previous school year prior to the initiative of Restorative Practices at Beacon Hills Middle School. The results are not yet available, but will be available at the Symposium.

- Trexler, Megan: Educational Leadership;

Faculty Sponsor: Dr. Michelle Szpara

*“Exploring the Impact of Structured Word Inquiry on Developmental College Students’ Perceptions of Self-Efficacy in Reading”*

Developmental education plays a major role across the nation’s community colleges and public, four-year universities (Center for the Analysis of Postsecondary Readiness, 2020). Although developmental education has many benefits, research shows that developmental students have a lower self-concept than that of their college-level peers (Martin, Goldwasser, & Harris, 2017). This is problematic because self-concept, as well as its precursor of self-efficacy, influence general academic performance and persistence (Bong & Skaalvik, 2003). Within the context of reading instruction, self-efficacy influences motivation, processes, and achievement (Cantrell, Correll, Clouse, Creech, Bridges, & Owens, 2013). Despite the importance of self-efficacy on reading performance, prevalent literacy instruction frames the English language as illogical and irregular.

These representations reinforce learning methods such as memorization of spelling and vocabulary, that do not maximize self-efficacy. Therefore, this study explores the impact that Structured Word Inquiry (SWI)—a linguistic approach to literacy—has on developmental college students’ perceptions of self-efficacy in reading. To explore this impact, a grounded study was conducted among approximately 52-60 students across four sections of developmental college reading. During 12 weeks of SWI instruction, data was collected through word sorts, surveys, interviews, and blogs. Drawing on this data, I argue that by framing English orthography as a logical, well-ordered system and engaging students in shared inquiry into language, SWI enhances students’ beliefs in their ability to develop literacy. These findings suggest that SWI can aid in the formation of self-efficacy; consequently, community college faculty and administrators should consider integrating SWI into developmental reading programs.

- Voroscak, Chrystal: Education;

Faculty Sponsor: Dr. Michelle Szpara

*“Examining the Needs of Students with Emotional Support”*

This research study took place in order to evaluate the needs of students with emotional support. Students who were in a self-contained emotional support classroom were compared to students who were mainstreamed, but all students were in the Anchor program at my school. At the beginning of the study, students were asked to assess how much they believe they are receiving access to support methods. Students were then observed during the core reading and math classes to see if supports were being offered, if needed. The results of this study will be made available at the symposium.

- Whitmore, Sarah: Education;

Faculty Sponsor: Dr. Jennifer Gaudioso

*“Metacognitive Learning and the Productive Struggle of Complex Math Problems”*

Motivating students to productively struggle through perceived difficult math tasks is a challenge that middle school math teachers face, especially when working with students who have historically struggled in math. The goal of this study was to see if teaching students about metacognition as well as challenging them to metacognitively reflect before and after completing an assignment would help them be more comfortable with persevering through perceived difficult math problems. To conduct this

study, students first completed a survey to determine their metacognitive awareness and a survey to identify their comfort level and attitude towards math. Next, they completed a series of assignments that required them to answer reflective questions prior to and upon completion of complex math tasks. While students completed these tasks, they were observed for task initiation and task completion. The goal of this study is to qualitatively analyze students' responses to reflection questions, student task initiation and task completion, and student benchmark scores to determine if teaching students about metacognition impacts students' willingness to productively struggle through complex tasks. The results of this study may benefit others who are looking to improve students' willingness to productively struggle through complex math problems. Results will be available at the symposium.

- Williams, Kimberly: Educational Leadership;  
Faculty Sponsor: Dr. Michelle Szpara and Dr. Amy Gratch Hoyle  
*“Factors that support or hinder the transition to college for high school students from high poverty schools”*

This proposed qualitative study seeks to address the question of how best to serve and support the needs of secondary-level students from high-poverty areas, as they seek to transition to post-secondary education. For the purposes of the current pilot study, students in the US educational system, over age 18, will be contacted to explore their experiences with the transition process. The specific research question is as follows: What are the factors that support or hinder the transition to college for high school students from high poverty schools? Preliminary results will be available at the symposium.

### **School of Natural Science and Allied Health**

- Muller, Patrick: MSBS - Biology;  
Faculty Sponsor: Dr. Sherry Fuller-Espie  
*“Analysis of Methylated TET2 and EZH2 Genes and the Use of Purified Leaf Extracts of Malva pseudolavatera as Therapeutic Approaches for Acute Myeloid Leukemia”*

Cancer of white blood cells, known as leukemia, can take on different forms, depending on the nature of the transformed cells, and how these affect homeostasis. Acute myeloid leukemia (AML) is an example of

such. AML renders early developed myeloids unable to properly differentiate into a corresponding immune cell within the monocyte lineage. This in turn causes the numbers of immature, precursor myeloblast myeloids, to increase in the bone marrow. Those progenitor cells divide rapidly, and are able to incur mutations, over a short period of time - a hallmark of cancer and transformed cells. Most cases of AML involve mutations in epigenetic mechanisms and modifications, usually in DNA methylation or histone acetylation. This can render genes encoding for DNA methylation, chromatin modification, transcription factors, and tumor suppressor proteins, to become silenced, contributing to the transformed cells' uncontrolled, rapid cell proliferation and division. Within the past year, developing technologies and advances in medicine have led to the development of therapeutics and cures for AML. This includes, but not limited to, the study of the altered gene expression of the methylation of the epigenetic regulator genes, *TET2* and *EZH2*, via Sanger sequencing. The isolation and purification of the extract of the leaves of the plant, *Malva pseudolavatera*, has also been used as a therapeutic to alleviate symptoms of AML. These give rise to the ultimate development of gold standard treatments for AML, that can effectively and safely treat any patients, taking into account their genetic backgrounds, overall physical health, and age.

- Veriga, Entleva: MSBS - Biology;  
Faculty Sponsor: Dr. Sherry Fuller-Espie

*“Current Research Findings and Treatment Challenges of Pancreatic Cancer”*

Pancreatic cancer is the third most common cancer of the gastrointestinal tract. This cancer has low patient survival rates due its asymptomatic progression and late stage discovery. By the time this cancer is diagnosed it has spread to the other organs, making it harder to treat. The only curative treatment approach is surgery with the goal that the cancer is still confined to the organ itself. Other therapies used today include chemotherapy treatments and in some cases radiation with minimal curative effectiveness. PARP inhibitors, immunotherapy agents, radiation therapy are tested in clinical trials. The purpose of this research is to discover new research developments in pancreatic cancer therapies and to explore the factors that play a role in its carcinogenesis driven by genetic and epigenetic factors. Cancer microenvironment studies have been of high interest in predicting the progression or shrinkage of pancreatic cancer. Current research involves ways to find new markers for detecting pancreatic cancer in the early stages through blood testing or different

molecular testing techniques using cancer samples and comparing them to normal tissues. The research has shown that the inactivation of *P53*, *P16*, *DPC4* tumor suppressor genes are common in pancreatic carcinoma. Up to date there is no effective therapies and more research is necessary to help in pancreatic cancer improved outcomes. The main discovery that can change pancreatic cancer outcome is early detection using cancer biomarkers specific to pancreas.

# Special Thanks

## **Symposium Committee**

Ruta Clair  
Thomas Conway  
John Cordes  
Kerry DiNardo  
Sheryl Fuller-Espie (Undergraduate Co-chair)  
Richie Gebauer  
Lilly Hatheway  
Anton Shufutinsky  
Michelle Szpara (Graduate Co-chair)

## **Academic Affairs**

Chioma Ugochukwu  
Kerry DiNardo

## **Faculty Support**

MaryLou Denesowicz  
Sonja Carassai-Haus  
Patricia Stocker

## **Technology Support**

Robert Getz  
Andrew Pron

## **Program and Abstract Book**

### **Cover Designs**

Nicole Passaro ('20)