

Spring 2016 Honors Capstone Abstracts

Examining Gender Disparities in Mathematics and Statistics Academia: Time Allocation, Sense of Belonging, and Burnout

Brooke Turner

Meredith Shockley-Smith

Women in STEM (Science, Technology, Engineering, and Mathematics) fields has been a hot topic for research in recent years. There have been a multitude of studies about women in STEM fields, both in the professional and academic spheres. As women in Mathematics and Statistics Academia, we wanted to see if these studies' claims were valid only for STEM fields in aggregate. We developed a survey aimed at Mathematics and Statistics staff and faculty. The purpose of this study is to determine if attitudes of faculty members differ among genders. Specifically, we examined differences in attitudes about time allocation, sense of belonging, job satisfaction, and faculty burnout. We also considered discrepancies in areas of service, scholarship, and research of faculty members within their institution. Due to low participation, we were unable to statistically back our findings and generalize the results. However, we hope that the results from this study will lay the foundation for future work. The results of this project were detailed in a report that included areas of interest and future interests.

Helicopter Parenting: Helpful or Hurtful in Relation to the Vocational Identity Development Process?

Brittany Biddle

Robin Bartlett

This study examined whether a new form of parenting, known as "helicopter parenting," may be negatively associated with vocational identity development. College students ($N = 157$) between the ages of 18 and 27 completed a series of questionnaires measuring perceived levels of helicopter parenting and aspects of their vocational identity development. While no significant relation was found between perceived levels of helicopter parenting and vocational identity development, results yielded a positive association between perceived levels of autonomy supportive parenting and aspects of vocational identity development. Students who reported higher levels of autonomy supportive parenting had more confidence in their ability to make career related decisions and had explored more in terms of careers. In addition, the results showed a trend for a relationship between autonomy supportive parenting and higher levels of career decidedness. Results of this study extend the literature on helicopter parenting by investigating its relation to vocational identity development. Furthermore, the results support previous research by documenting the importance of positive parenting behaviors in establishing an identity.

The Power of Reading for Those with Dementia

Melissa Bullock

Robert Zia

For my capstone project I wrote an article suitable to be published in a small trade journal about the interplay/relationship between reading/books, public libraries, and dementia. I did a lot of research and found very little literature about this topic, so I wrote a literature review for the first part of my article. Then I looked for any books specifically targeted at those with dementia. Again, I didn't find much, so the second part of my article was an annotated bibliography of sorts of the handful that I found. The last part of my article was my recommendations to libraries to serve this population. I drew from my research about what some libraries have already implemented and ideas from the studies I read.

Fighting Darkness with Delight

Sarah Brown

Lisa Jameson

This research was initiated by my experience volunteering at an orphanage in South Africa. I chose to share my experience by creating a series of two paintings which each express a holistic lesson I learned during my time abroad. The inspiration for my pieces came from Dutch still-life masters, who painted exquisite flowers and used them to communicate a deeper meaning. The overarching goal of my artwork is to express how student volunteerism has been an important first step for me to pursue a career in the mental health field. I believe that the natural beauty of South Africa became the junction between my personal goals and artistic expression.

Observations into the Role of MSH4-MSH5 Heterodimer in Yeast Genome Stability

Miranda Combs

Erin Strome

BRCA1 is a breast cancer susceptibility gene in humans. This gene has a conserved homolog in yeast known as *RAD9*. Previously collected data suggests that *msh4* and *msh5* could be potential *RAD9* genetic modifiers, which, when mutated, increase the risk of *BRCA1* mutations in humans. *MSH5* associates with *MSH4* to form a heterodimer, which facilitates in meiotic homologous recombination, by forming a holiday junction. Various strains were created and their genomic instability was analyzed. Strains heterozygously mutated for *msh4* and/or *msh5* in wildtype and *rad9*-deficient backgrounds have been created and analyzed. The strains were analyzed with aneuploidy assays that mimic the phenotype of cancer, chromosome fragment loss and whole chromosome loss. Recent data shows that heterozygous mutations of *msh4* and/or *msh5* in *rad9*-deficient strains cause greater genomic instability than in strains mutated for either gene in a wildtype background. Strains homozygously mutated for *msh4* and *msh5* are being created to observe the effects with complete absence of *MSH4-MSH5* protein complex on genomic instability. Future directions include specifying any relationships between *RAD9* and *MSH4/MSH5* by varying *Msh4p/Msh5p* dosage in strains mutated for cell cycle checkpoint genes other than *RAD9*. If the patterns continue to be that when *msh4* and *msh5* are mutated along with *rad9*, genomic instability would be significantly increased, then cancer risk could be more accurately estimated in individuals with these identified mutations.

The Experiences and Perceptions of Women in Law Enforcement

Hannah James

Michael Bush

When deciding on a subject for my Honors Capstone, I knew I wanted to research how women in law enforcement feel about what it is like to work in a society that is against them as a woman and officer. I wanted to know, *what is it really like to be a woman in law enforcement?* To do this, I conducted a series of interviews in local police departments. I used a guided interview to research six variables including gender roles, sexual harassment, physical abilities, feminism, media, and mental health. I looked for common themes and key words to analyze my results. I found that women mostly felt equal within their departments, but the public still had drawbacks about women as police officers. Sexual harassment was the only significant concern the women felt needed improvement in the workplace. All the women agreed that mental health disorders such as PTSD, depression, and anxiety were concerns for all officers, not just women. They also all believed in aspects of feminism, even if they did not identify as a feminist. Overall, the women believed in empowered women achieving their goals. Working on my Capstone not only allowed me to explore research across disciplines, but prepared me to work in my career field.

The Importance of Animals in Japanese Folklore

Ashley Niece

Makoto Nakamura

Japanese folktales have a wide array of subjects, with animals being the main focal point within a great amount of these tales; being a rural nation for most of its history, these animal folktales are very prominent in Japan. This is observed with a literary analysis of seven of the most prominent animals in Japanese folklore: the raccoon dog, the fox, the snake, the badger, the cat, the spider, and the dog. An original translation of two stories, *The Wet Woman and the Ox Demon* and *The Razor Fox* from *Nihon no Obake Banashi* by Keisuke Nishimoto are analyzed and presented with some background information, also translated from Japanese. The sheer amount of superstitions and legends featuring animals in Japan is conclusive evidence of their importance in Japanese traditional folklore.

Characteristics Predicting Income Inequality: An International Analysis

John McDowell

Linda Dynan

Income inequality is a topic that is important on many levels, and this study examines the causes. My overarching hypothesis for the two part study is that the characteristics of a country can be used to predict the level of income inequality present within that country. To do this the study was done in two parts, the first of which looked at the issue from an economics standpoint, and the second expanding to include other disciplines. For each study regressions were run and results were taken from there. The results of this first study were that GDP per Capita and Population growth rate were found to be significant; while in the second study, which included the aforementioned variables, GDP per Capita; Member of a religious organization; roads, a proxy variable for infrastructure; and women's rights were found to be significant. While the results are telling, it was also concluded that farther research was needed in the area.

Navigating the PR Cultural Terrains: An Analysis of German versus U.S. Public Relations Agency Culture

Nathan Garbig

Jacqueline Emerine

Communication and organizational structure within German and United States' business settings show the complexity and variety that culture can have within the professional world. However, do PR agencies need to build more relational environments conducive for creativity and a strategic, out-of-the-box structure? By taking a deeper look into the lifestyle of German and U.S. PR agencies through a review of previous literature and qualitative research, we can begin to understand the similarities and differences between German and U.S. agency organizational culture, as well as examine the impact of globalization within agency culture and communication.

Observational research and in-depth interviews were conducted in order to understand organizational and workplace environment within different cultural settings. Interviews with PR practitioners indicated that there is diversity in agency organizational culture, regardless of the location on a PR agency. Instead, this study suggests that PR agency culture is contingent upon agency expectations, relational and business-oriented communication styles, and establishment of structure within the business. Implications for students completing a study or work abroad, future and current PR practitioners, and those conducting global business are discussed.

The Synthesis of Histone Deacetylase Inhibitors to be Used as a Potential Cancer Treatment

Emily Hogle

Lili Ma

One of the main causes of lung cancer is the overproduction of cells. One enzyme that has a role is cell regulation is histone deacetylase (HDAC). Therefore, it is appealing to consider histone deacetylase when finding new treatments for lung cancer. Histone deacetylase inhibitors help with transcription and cell regulation, so it is promising for new treatments. Santacruzamate is a natural marine byproduct, which literature has reported to show inhibition against HDAC.¹ The compounds synthesized in this project are based on making improvements to previously made HDAC inhibitors. Three types of improvements were focused on, which include chiral centers, thioamide compounds, and compounds with triazole moiety. Once synthesizing, the compounds will be confirmed through Nuclear Magnetic Resonance (NMR). The bioactivities of these compounds were determined in Dr. Paula's research group and the cell viability of these compounds will be tested by Dr. Merino's research group.

Australia and United States: Are Marketing Regulations Consistent with the Nation's Constitutional Rights

Jamie Kohls

Christopher Gulinello

This research project was conducted for the purpose of deciding whether or not the differences in the constitutions of both, the United States of America and Australia, would be restrictive in implementing stricter laws on the advertisement and packaging of cigarettes. This project was formulated through much research on constitutions, court cases, regulations, and oppositions of both nations. Organizations such as the World Trade Organization and the Federal Trade Commission were also assessed throughout this process. I then furthered my research through interviews with law professors at Chase Law School including Professor John Bickers, Professor Jennifer Kinsley, and most importantly Professor Christopher Gullinello. Through all of my data, I found that the extremity of the Australian Plain Packaging Law is too restrictive to be put in place in the United States today. This report is a summary of my findings highlighting the important parts of research that lead to my decision.

An Analysis of the Anti-Viral Effects of Botanical Extracts

Emily Igel

Joseph Mester

Cat's Claw tea, extracted from the bark of *Uncaria tomentosa*, is often used in South America as a cure-all for common diseases. Curcumin is another botanical found in turmeric, which used in India as an ingredient in curry, and is also gaining attention for its anti-cancer effects. To study an anti-viral effect for these two botanicals, human neurons and macrophages were treated, looking for down-regulation of virus entry receptors. Cat's Claw-treated neurons were challenged with live herpes simplex virus and measured herpes viral entry receptor expression, level of viral entry genomes, and final infectious yield. We found that human cells cultured with 0.8% Cat's Claw extract in media had a potential anti-viral effect by downregulation of arbovirus receptors among others. Curcumin showed a possible anti-viral effect through the downregulation of HIV co- receptors. These results indicate an anti-viral effect of Cat's Claw and Curcumin due to the decreased expression of viral entry receptors.

The Effects of Community Service Activities on Undergraduate Students

Mac Payton

Julie Olberding

This study investigates the effects of participating in community service activities as an undergraduate student. Research shows that students who participate in community service tend to earn better grades and are more involved members of their institutional communities. This leads to students being more successful after graduating.

These benefits are seen through both service-learning courses and through service activities that occur through a student organization or some other event planned by the institution. However, the academic benefits are seen more clearly through service-learning courses.

This study includes a survey sent out and responded to by current undergraduate students, current graduate students, alumni, and faculty and staff members of numerous institutions, as well as interviews with current undergraduate students, alumni, and staff members at Northern Kentucky University.

Addressing Infant Mortality in Cincinnati

Yasmeen Daher

Adele Diminno

Infant mortality is defined as the death of an infant before his or her first birthday. The national average infant mortality rate is 5.98 death per 1000 live births. Cincinnati trails behind with a rate at 9.5, almost double that of the national average. With some of the best hospitals in the country, including one of the top pediatric hospitals, it raises the question, why are Cincinnati's babies dying? This project aims to better understand the problems causing infant death in Cincinnati as well as the creation of a community action plan through the development of a website. More specifically, this project aims at better understanding social determinants of health and how they can make us sick.

Food Preference in *Podarcis muralis* Based on Diet Content and Prey Abundance

Allison Litmer

Richard Durtsche

Understanding the impact an introduced species is having on an environment can be crucial. In many cases, introduction events lead to invasive species that have negative impacts on the environment through declines in biodiversity and alteration of community structure. The European wall lizard (*Podarcis muralis*) is an introduced species in Cincinnati, Ohio that has now expanded into northern Kentucky and Indiana, while successfully maintaining a stable population. This can be attributed to the suitable habitat and weather conditions, as well as having potentially low competition. The question addressed in this study was are *P. muralis* foraging selectively or opportunistically during the non-breeding season in the Cincinnati population? This was achieved by collecting lizards in northern Kentucky and identifying their stomach contents, as well as conducting an invertebrate census to determine what prey taxa are available in the environment. Selectivity was compared through abundances based on volume and frequency of prey. *P. muralis* were found to be selective in this location with a high niche breadth, foraging upon prey items such as isopods, insect larvae, earthworms, and adult flies. Males were found to be more selective than females, but as a population they consumed a wider variety of prey taxa than established locations. This information is valuable in determining if they are having an effect in Cincinnati, and if actions should be taken to control their growth.

A Qualitative Study of Mental Health Care in an Ohio Nursing Home

Lauren Gross

Belle Zembrodt

The elderly population is one of the fastest growing in the world, but is perhaps the most overlooked in regards to mental health. Many residents who live in nursing homes, assisted living, or rehabilitation

facilities are faced with mental illness, isolation, and loneliness. This project consists of a series of Creative Observation pieces that serve to illuminate real experiences faced by the elderly population. Each account is written about an encounter I have had while working or volunteering as an aide in two different nursing home settings. Five different residents were chosen for observation, all with unique challenges. Each resident was presented with a plant, and their reaction has been detailed throughout a series of four observation times from January to April. All names and any patient identifiers have been changed or omitted to protect their privacy.

Consumer Beverage Products and Partnerships with Charitable Organizations

Alexander Rainford

Bridget Nichols

For years, consumer product companies have struggled with the task of developing productive and meaningful Corporate Social Responsibility (CSR) partnerships. These companies have long been trying to figure out the perfect partnership between them and a charitable organization. The tasking of choosing the correct charity that matches the company's values, attitudes, and goals has remained difficult with several company's experiencing positive gains, while others suffering from ill-fated partnerships.

The general purpose of this study was to identify the impact of brand and charity collaborations in consumer beverage products. The study aimed to measure the perceived value of a brand based on the brand's partnerships with various forms of charitable organizations. The study measured the consumer perceptions of various purported causes related to marketing partnerships between a fictional bottled water company and a charitable organization, while also doing the same for a fictional tea company. This study also measured participant general attitudes about charitable organizations and their effectiveness. The results of this study are used to suggest and recommend beneficial partnership, as well as, recommendations based on consumer aptitudes about charities and the importance of CSR partnerships. Alexander Rainford conducted months of preliminary research, developed and launched an online survey, collected and analyzed the results using SPSS, and prepared the presentation for the Posters at the Capital and Conference of Honors.

The Identity Crisis of the European Union

Kathryn Sills

Kimberly Weir

The European Union has become an international power with major influence. In order for the Union to maintain that influence the member countries must give up a part of their sovereignty to give the EU more power through political integration. Both the European citizens and the member states are reluctant to allow for that integration because of a distrust and lack of desire to fully commit to the idea of the European Union. It is important to create a strong European identity in order to unite citizens and give them incentive to participate in the EU. Once the stakes are realized and citizens are invested, the member states will follow and the Union will be able to continue its growth and integration. Integrating before the citizens or states are ready will only serve to create further rifts with a two-speed Europe or even countries leaving the Union, such as the UK with the Brexit. With the European Union already dealing with high tensions and being so close to a breaking point, this slowdown and reevaluation is necessary to keep the Union intact and lead it into the future.

Digital Advocacy for Poverty in Cincinnati

Kelsey Bungenstock

Bradford Scharlott

Over 13,000 people in Cincinnati are living below the poverty line. In fact, Cincinnati is currently the tenth poorest city in the country. From the Cincinnatians I have spoken to about this issue, not many are truly aware of the issues this city faces when it comes to poverty and unemployment. These factors have an impact not only on the individuals, but on the community as a whole. There are awareness organizations for many different issues, so why not have one for issues relating to poverty? As a Public Relations major, I have dedicated my college career to learning how to develop a brand, and I wanted my Capstone to not only reflect these skills, but to raise awareness of the impact poverty has on our city. I decided the best way to do so was to create my own advocacy blog. Available to the public at cincimpact.weebly.com, the site contains a variety of pages and blog posts dedicated to either be a resource for those suffering from poverty, or as a way to raise awareness of the issue to the more fortunate Cincinnati resident.

The Effects of Religious Priming on Belief in the Paranormal

Samantha Fitzpatrick

Doug Krull

The purpose of this project was to determine the effects of religious priming on beliefs in the paranormal (e.g. ghosts), unusual creatures (e.g. Bigfoot), and superstitions (e.g. picking a penny on heads up will bring good luck). In study 1, participants were primed with religious symbols and were asked to indicate the religion each symbol was associated with. In study 2, participants were primed with either a religious word scramble or were given a word scramble of U.S. States. Participants then completed questions about their belief in the paranormal, unusual creatures, and superstitions, as well as their religious views. The effect was not significant. Several possible explanations for the results are discussed.

Construction and Efficiency Studies of Fullerene-transition Metal Sensitized Solar Cells

Hannah Hearn

Keith Walters

In the face of a world becoming ever-more dependent on energy resources to get through every day life and to continue advancements in areas across all fields of work, finding a sustainable, green alternative to our energy needs is becoming even more important. Dye sensitized solar cells (DSSCs) are a rising option in the solar energy field, largely due to the potential for a higher energy conversion efficiency from these multi-component devices as compared to current silicon based cells on the market. Utilizing organometallic based compounds, specifically those incorporating a fullerene structure, as dyes in these cells is of significant interest as well due to their expanded light absorption range into the visible and UV portions of the spectrum. This capstone detailed over the construction of these cells, as well as the design and fabrication of an arduino-based device that was used to run efficiency tests on the resulting products. Concluding efficiencies of F-1 and F-2 dyes have been reported (showing efficiencies in the range of 2-3%), and while not within an ideal range of 10-20%, these efficiencies are the result of three years of much work and progress on the design and testing of these systems.

Love Untold: Love Stories Told Through Photography and Personal Narratives

Alma Onate

Michele Day

The theme of love has inspired countless works of art, poems, literary works, and even wars. But what is love and how do humans experience it? What does it mean to love? I set out to investigate these questions through a combination of photography and personal narratives. In this project, I interviewed strangers and acquaintances about their definition and experiences of love and compiled their stories into a project that seeks to question the societal assumptions of love. From this project, I discovered

that strangers have less to lose, that people are naturally beautiful beings, and that often life, experiences, and love are so deeply intertwined that it is impossible to separate them. Most importantly, however, this project is aimed at reminding us that love is much more complex and beautiful than is depicted in media and that “average” humans can have intense love lives—often more intense than anything shown by the media.

Website: <http://onpd55.wix.com/loveuntold>

You're Never Fully Dressed...

Gretchen Priddy

Michael Hatton

There has been so many different learning capacities that I have been experienced at NKU. I have learned to teach myself with online classes, push myself with performance classes, challenge my critical thinking with management classes, and more. With my Capstone, I have never felt such an urge to go out and simply just experience in order to learn more about a subject that intrigued me. I found myself having more discoveries about me personally than the other people I was working with. More than anything, I love the fact that I had the opportunity to shine a positive light onto the hair and makeup world. I have found that in theatre and the real world it can be used to increase your confidence tremendously. Makeup and hair will always continue to grasp my attention, and I can't wait to one day go further into the industry to experience more encounters with the effects of makeup and hair.

A Study of Power Law Distribution with Infinite Means

Eden Foley

Dhanuja Kasturiratna

This work is building upon research done in the Summer of 2014 on power law distributions with a scaling parameter of 2. Specifically, it was to model the sampling distribution of the mean for the St. Petersburg Paradox, a famous special case in the history of probability. This research can be found under the title “A New Look at the St. Petersburg Paradox” with SIURO (SIAM's undergraduate research journal). This work involves the modeling of the specific case of the St. Petersburg Paradox for any percentile and any sample size and then adapting this distribution to use for similar distributions (other power laws with scale 2). This work has been to solve for the sampling distribution of the mean for power law distributions more severe than the St. Petersburg Paradox (scale parameter between 1 and 2). This creates a problem to model in 4 dimensions rather than 3, which greatly increases the inherent complexity of the task. Thankfully some simplifying assumptions appear to reduce this complexity significantly. The dimensions which to be modeled include the sample size, the percentile, the scale of the power law distribution and then the actual desired value which corresponds with the previous 3 dimensions.

Harry Potter: The Boy who Lived...Twice?

Becky Von Handorf

John Alberti

This project focused on one of the key moments in *The Deathly Hallows* and dissecting what exactly is occurring. The chapter in question occurs immediately after Voldemort strikes Harry with the Avada Kedavra curse and Harry is transported to a purified version of King's Cross station where he converses with Dumbledore; ultimately, Harry returns back to his body and goes on to fight and defeat Voldemort. This scene is never brought to light and it has been a source of discussion for many Harry Potter fans. Through my research, I have found that there are three explanations for what is occurring during this chapter: Purgatory, a form of clinical death, and the Lazarus Phenomenon. All three of these theories offer a different perspective on the novel and the series as a whole. But not one is correct; in fact, all

three are correct. As Albus Dumbledore has said, “Just because it’s happening in your head, why should that mean it isn’t real?”

Creating an Online Store

Casey Loehrke

Steven Weiss

This project was the creation and running of an Etsy store, complete with an accompanying Facebook page to run for publicity. This store, still active on Etsy, sells Clay dragons (about the size of a hand) bracelets, earrings, necklaces, and mini dragons (no larger than a quarter) as well as various clay pendants. My final documentation is a reflection on that project and how it was conducted, how it might be improved, and what I did in its course. I also take some time to infer the possible future applications of my Etsy store, as well as the emotional growth stemming from it.

Ivory is a Color

Kerry Skiff

Brad Scharlott

My project started as a general campaign to educate the Greater Cincinnati community about the international ivory trade and how our habits affect elephants and rhinos in Africa. It was meant to be a brand, consisting of a Facebook, Twitter and website that I updated on a regular basis. Instead, I decided to just focus on a website and blog, to emphasize my writing and interviewing skills. This helped me determine key sources to interview and to do more research on the current trends and news happening around ivory. After I built my website using Weebly, I focused on my blog, choosing both a title and a focus. While my website talks about elephants, rhinos and other animal species that have ivory, I chose to devote my blog to following the ivory trade in our area. This meant I could maintain a local focus and find more familiar sources in order to engage my audience. Throughout this I strengthened my research and investigative skills in reporting, and was able to explore more creative storytelling forms as both a blogger and a journalist. Overall, this project is an effort to educate the community about an important and complex global issue as a freelance media professional.

Increasing the Value of Education: Internships for the NKU Student

Lindsey Newton

Eileen Weisenbach Keller

The purpose of this study is to explain what motivates undergraduate business students to pursue an internship, why others do not pursue them and the outcomes of having worked one. Using previous research on student attitudes toward internships and the impact of internships on student academic and career success, a survey was created and distributed to Northern Kentucky University undergraduate students enrolled in the College of Business. The survey measured how many students completed internships, whether or not they received course credit, and how many students obtained full time jobs as a result of their internship. The survey also used qualitative data to measure students’ general perception of the internship. The results were used to develop a recommendation for Northern Kentucky University College of Business to increase the number of undergraduate students who complete internships.

Resonance: Psychology, Writing, and Animation

Jillian Goins

John Alberti

Resonance is an experimental film revolving around two college students who find an MRI machine in their school library. The story takes place in a futuristic alternate universe where MRI technology is

outdated and *useless*, but the students use the machine anyway. I wanted to study different aspects of experimental filmmaking, so I wrote, directed, drew, and composed the soundtrack for the film. I made each new scene its own Photoshop slide, and combined all the slides into iMovie. From iMovie I added the vocals I recorded with my two voice actresses and the soundtrack I composed in Garageband. Creating *Resonance* taught me so much about individual filmmaking, and time and money management. It took me 11 months and I only spent money on crayons, but I can easily see how a larger production would require more people and money. I am very happy with the end product and plan on expanding on *Resonance* and my filmmaking abilities in the future.

Hold Me Fast and Fear Me Not: A Playwright's Exploration of Appalachian Culture and the Tam Lin Narrative

Rebecca Campbell

Kristin Hornsby

In this play, I use the medium of playwriting to explore Appalachian culture and the themes of the traditional folk ballad of Tam Lin. I did research into the ballad's historical and social context to adapt the ballad into a more modern setting. In doing so, I hope to normalize LGBT characters and relationships for the audience, as well as illustrate the potential for theater as an art form to embrace elements of magic and fantasy. It is my hope that this work will inspire its audience to create and develop new art and theatre that also features LGBT characters and fantastical elements.

Attitudes Toward Nontraditional Others

Jessica Sellers

Jeffrey Smith

This study examined females' attitudes toward traditional-gender-role-stereotype-deviant individuals. The purpose of this study was to further investigate people's attitudes toward nontraditional individuals, and to measure the perceptions of stereotype-deviant individuals' levels of femininity, masculinity, fulfillment, happiness, successfulness, and acceptability. In order to test this, female undergraduates participated in an online survey designed to measure these opinions. The results of this study suggested that traditional females and nontraditional males are viewed as less masculine than traditional males and nontraditional females, respectively. However, both traditional and nontraditional females are more feminine than traditional and nontraditional males, respectively. In addition, the results suggested that traditional females and nontraditional males are perceived to be less fulfilled, happy, and successful than traditional males and nontraditional females. As well, the results suggested that people view stereotype-following individuals as exhibiting less acceptable behaviors than stereotype-deviant individuals, regardless of gender. Based on these findings, it is suggested that being a woman is intrinsically tied with perceived femininity, male-typed characteristics positively influence one's perceived levels of fulfillment, happiness, and acceptability, and people are more willing to consider the behaviors of nontraditional individuals acceptable than traditional individuals.

Engineering a Solution for Children's Health at School

Liz Reeves

Sayed Majdod Din Allameh

Sanitizing items within the classroom is difficult for any teacher to accomplish alone. The automated toy sanitizer is a solution to assist the teacher keeping up with the bacteria surrounding the children he or she watches throughout the day. This technological innovation explores the design process as well as the simplest and most effective way to achieve a germ-free environment through the use of ultraviolet bacteria light. Several tools and techniques were used throughout the process to identify areas of

concern, create drawings, build a prototype, and evaluate the device. These tools include the use of AutoCad, machining, electrical circuit work, and testing of the equipment.

Static versus Dynamic Stretching

Elizabeth Hamann

Catherine Pence

Martial artists should properly stretch their muscles in order to prevent injuries. This pilot study using a cross-over design randomized eleven subjects to test whether static or dynamic stretching made a greater immediate impact on flexibility. A pre-stretching test was conducted, followed by a five minute warm-up, stretching, and a post-stretching test. Flexibility was measured using goniometry. No statistical difference was found between variables. Recommendations for a future study include using at least 40 subjects in order to determine if there are any statistical or clinical significance in the usage of dynamic or static stretching in particular muscles.

Nest Site Selection by Carolina Chickadees

Danie Frevola

Lindsey Walters

Nest location is a vital factor that determines the nestlings' success. Poor nest location could lead to exposure to predators a lack of nearby resources. We examined nest site selection by Carolina Chickadees (*Poecile carolinensis*) from 2011-2015 at a field site with 38 artificial nest boxes. In this cavity-nesting species, both members of a breeding pair inspect multiple cavity choices before deciding on a location to building a nest. We examined whether Carolina Chickadee nest location preference was related to factors such as proximity to the forest edge, a water source, neighboring cavities, and buildings, as well as the forest type the nest was located in. We found that Carolina Chickadees nests along the forest edge are depredated more frequently than nests in the interior forest; however, despite this unequal risk of nest loss, the chickadee pairs chose boxes along the forest edge as often as in the interior. The other factors that we measured were not related to cavity occupancy or predation risk. By determining what factors lead to nest box occupancy and what factors are insignificant, we can predict where Carolina Chickadees will be nesting in future breeding seasons.

Cincinnati's Oldest Playground

Lilly Cook

Ali Godel

Coney Island: Cincinnati's Oldest Playground is a film that I created to help showcase the past, present, and future of Coney Island and what all it has been through since 1886. Even though it has been around for so long, many people around our area have never visited Coney Island and some do not even know that it exists. By showcasing this park in my film, I am able to show people what Coney Island is and what all it has had to offer since the beginning. I want this film to send a message to others that we should be grateful of what we have around us so that we may pass on the memories that we gain to the coming generations so they may be able to enjoy Coney Island as well. By enjoying the little things around us, it makes life so much better.

Consumed

Emma Clixby

Ana England

This installation is a response to America's wasteful consumption habits. My ceramic dishes, Jell-o-esque forms, and home wares are made with the intention of challenging the "cultural anesthesia" that our mass-produced society has induced on individuals with a constant push towards material possessions. I

use Jell-O as a symbol of America's shift from the homemade lifestyle to cheap and artificial. Consumerism is urgent, loud, bright, repetitive, and potent much like the room you are standing in right now. Americans account for 5% of the world population but create *half* of the world's global waste. In America 200,000 tons of edible food are discarded daily.

Student Housing Retention: The Impact of Communication Satisfaction and Sense of Community

Zoe J. Welch

Stephanie Klatzke

This study examined the population living on-campus at a midsized college in the Midwest to determine if there was a relationship between students' intent to leave on-campus housing, their perceived communication satisfaction with resident hall personnel and sense of community within the resident halls. Participants (N= 270 undergraduate students) completed self-report measures while reflecting on their current resident hall placement and the resident assistants who lead their community. Significant relationships were found between each variable and intent to leave suggesting that both sense of community and communication satisfaction are important factors for students when deciding where to live. Suggested action for improvement within our residential housing is proposed and further points of research are given at the conclusion of this paper.

The Civil War - On the Front and at Home: An Examination of History Through Television

Zachary Lanham

Kristin Hornsby

The American Civil War is the darkest period in American history. The issue of slavery in the United States of America wrought violence in Congress and on the streets. Families were torn apart and forced to choose sides during the war. This era in American history has been intensely studied and analyzed by historians and others, but my project instead uses the medium of television to tell a broad and diverse audience the daily lives of those involved in the war. This project is meant to tell the stories that are not heard. Through the power of television, we are able to tell a story that is relatable to everyone. I created a script for the pilot episode and an outline of the entire series, as well as a show bible. The end result is a television show that can spread the tales of the Civil War to anyone willing to listen.

Transgender Youth and Support: Making of a Children's Book

Daniel Ginn

Brandelyn Tosolt

When it comes to growth, nothing has helped me grow more than my transition into the man I always knew myself to be. For my Honors capstone, I could have done anything - but I wanted to create something for a community that I identify strongly with and which truly needs it. I have created a children's book on the topic of transgender identities, and a companion guide. Within the pages of the children's book, you'll find a story about three friends with three separate identities educating youth on the spectrum of gender. Likewise, the companion guide serves to educate parents and educators on gender identity, assist them in answering questions, further the dialogue/discussion, and provide additional resources to guide them in their learning. Together, this duo of books will serve the community at large by opening people's eyes and contributing a new perspective on the topic of transgender identities.

The Cincinnati Zoo and Botanical Garden: A Photographic Study

Lizzy Nickell

Matt Albritton

The Cincinnati Zoo has always been a source of inspiration for my photography. For my honor's capstone, I decided to use this inspiration to create a photographic study of the zoo. To exhibit my photography, I chose the format of a book, to allow viewers close and intimate interactions with each photograph. This book is a culmination of this year long project. Through much editing and processing, I chose these images to represent the work I have completed. Every image in this book shows special adaptations that allow these species to survive in the wild, and at the zoo. The conservation status of each species is detailed in the description, and tidbits about the individuals that live at the zoo are included.

Torture or Enhanced Interrogation Techniques? An Investigation of Public Opinion

Jennifer Korth

Shauna Reilly

This is a two-part piece investigating two different subjects related to the U.S. Military. The first examines public opinion with regards to the use of enhanced interrogation techniques (EITs). Do Americans consider EITs as torture? The theory analyzes cues provided by political elites, the reputation of the United States within the international community, and the opinions of women to determine whether there is a positive or negative outlook on the use of EITs. The second piece highlights the perceptions of women in the military. Topics of discussion are sexual discrimination in terms of females experiencing limited access to combat roles, as well as sexual harassment and sexual violence. This topic was ultimately inspired by my passion to be an advocate for current military members and veterans. A special thanks to all our men and women in uniform for their dedication and sacrifice to keep our nation safe. We are all truly grateful for your service.