Lake Campus Research Report - 2016

Research Initiative Program Overview

The Lake Campus is home to numerous technical, associates, bachelors, and graduate programs. These programs are run across a student population of approximately 1,200 students and facilitated by approximately 40 full time faculty. The scholarly achievements contained in this report represent faculty’s commitment to pedagogy and their respective disciplines as they contribute to their classrooms, disciplines, and community.

The Lake Campus Research Initiative Program provides a unique internal funding source for faculty and students. This program is designed to help drive the scholarly production of the campus by providing monies for research infrastructure, supplies, travel, and publishing costs as well as sponsoring events that contribute to the campus research mission.

The Lake Campus Research Coordinator is pleased to present the second annual Lake Campus report of research activities. This report provides a listing of the scholarly and creative endeavors from Lake Campus faculty during the 2016 calendar year and spans a variety of disciplines and formats. This report has been compiled from faculty submissions of scholarly achievements. Congratulations to Lake Campus faculty for their success and much encouragement as they continue in the future.

Strategic Highlights from 2016

- The first annual Lake Campus Research Symposium was held in 2016. The event was centered around 20+ research projects presented by 30+ faculty and students and was attended by over 150 people from the campus community.
- The internal grants and scholarly expenses program that was launched in 2015 continued to provide research support to both faculty and students.
- Several research related workshops related to building proposals, writing research papers, and identifying grant support were held.
- Faculty and faculty mentored students produced 100+ units of research spanning peer reviewed journal articles, contracts and grants, books, book chapters, book reviews, novelettes, reference works, short fiction works, plays, and scholarly presentations.
Faculty Research Articles - 2016

Faculty Articles in Collections - 2016


Faculty Books - 2016


Faculty Plays - 2016

Faculty Short Fiction - 2016


Faculty Book Reviews - 2016


Faculty Conference Presentations - 2016

- Bettinger M. 2016. Using ALEKS vs Hawkes for developmental math at the Lake Campus. Lake Campus Research Symposium, Wright State Lake Campus, Celina, OH.
• Brake A, Showman SA. 2016. In Search of God's Path: Sikhism. Lake Campus Research Symposium, Wright State Lake Campus, Celina, OH.


• Cavanaugh J. 2016. Make It Stick IGNITE. Annual Conference of the Association for the University Regional Campuses of Ohio, Kent State University Trumbull Campus, Warren, OH.

• Cavanaugh J, Huelskamp D. 2016. Active Learning: High-Tech, and No Tech. Annual Conference of the Association for the University Regional Campuses of Ohio, Kent State University Trumbull Campus, Warren, OH.

• Cavanaugh J. 2016. Practical Applications of Active Learning Activities. Lake Campus Research Symposium, Wright State Lake Campus, Celina, OH.

• Ciampaglio CN, Jacquemin SJ. 2016. Quantifying Heterodonty in the Late Devonian Sharks, Cladoselache and Ctenacanthus from the Ohio Shale, USA. Lake Campus Research Symposium, Wright State Lake Campus, Celina, OH.


• Clayton A, Ciampaglio CN. 2016. Analysis of Patterns and Processes of Chondrichthyes across the Permian-Triassic Boundary. Lake Campus Research Symposium, Wright State Lake Campus, Celina, OH.


• Daniel DT. 2016. Paracelsus’s Letter to Luther and the Theologians at Wittenberg: Authentic or Spurious? Renaissance Society of American, Boston, MA.

• Daniel DT. 2016. Evaluating the Authenticity of Paracelsus’s Astronomia Magna (1537/38). Lake Campus Research Symposium, Wright State Lake Campus, Celina, OH.


• Follo G. 2016. A content Analysis of Police Confrontation Videos on Social Media. *Academy Criminal justice Sciences Annual Meeting*, Denver, CO.

• Hochstein DD. 2016. Test Anxiety and Study Habits in College Students. *Lake Campus Research Symposium*, Wright State Lake Campus, Celina, OH.

• Huelskamp D. 2016. Traditional vs. Block Scheduling and Test Scores in College Biology Courses. *Lake Campus Research Symposium*, Wright State Lake Campus, Celina, OH.


• Junker CR. 2016. Faculty mentoring for faculty who hate mentoring. *Professional and Organizational Development*, Louisville, KY.


• Kich M. 2016. Ignite Talk: Digital memory and Cultural Memory. *Annual Conference of the Association for the University Regional Campuses of Ohio*, Kent State University Trumbull Campus, Warren, OH.


• Simons CW. 2016. Sensory evaluation of Gluten-Free cookies made with Pinto Beans. *AACC International Conference*, Savannah, GA.


• Wilson DH. 2016. Production of “Primacy”. Talk and Q&A for production of play at *UForge Gallary*, Boston, MA.


• Zhang W. 2016. The Euler’s Number in Undergraduate Mathematics. *Annual Conference of the Association for the University Regional Campuses of Ohio*, Kent State University Trumbull Campus, Warren, OH.

**Faculty Contracts and Grants - 2016**


• Crites B. 2016. Purchase of SeaPerch Submarines. Amount $1,130. Funding Source: WOEF Board Grant.


• Crites B. 2016. STEM day with area schools. Amount $500. Funding Source: WOEF Board Grant.

• Crites B. 2016. February STEM day. Amount $100. Funding Source: Kroger Community Grant.

• Crites B. 2016. March Science Day. Amount $100. Funding Source: Kroger Community Grant.

• Crites B. 2016. STEM day with 150 2nd graders from St. Mary’s City Schools. Amount $1,000. Funding Source: WSU - College of Education and Human Services Grant.

• Crites B. 2016. Science Day. Amount $1,000. Funding Source: WSU - College of Education and Human Services Grant.
- Crites B. 2016. STEM day with 150 2nd graders from Parkway Local Schools. Amount $1,000. Funding Source: WSU - College of Education and Human Services Grant.
- Crites B. 2016. Christmas around the world with Celina kindergarten and 3rd graders. Amount $1,000. Funding Source: WSU - College of Education and Human Services Grant.
- Hance DJ, Kender D. 2016. Transition of two BIE Undergraduate Engineering courses from Traditional Instruction to Student Success Center SCALE-UP classroom. Amount: $12,000.
  - Technical Report Citation: Jacquemin SJ. 2016, Swimming Performance of Great Lakes Minnows and Darters. Prepared for: Ohio Sea Grant (Grant #60055609: R/ER-119-PD).
- Junker CR. 2016. Coordinated the integration of service-learning advocates into a range of general education classes across disciplines. Amount: $3,000. Funding Source: WSU – Lake Campus Research Initiative Grant Program.
- Simons CW. 2016. Functional properties of resistant starches and modified protein extracts from edible beans. Amount: $1,100. Funding Source: WSU – Lake Campus Research Initiative Grant Program.
Lake Campus Research Symposium - 2017

Event Program

"The real voyage of discovery consists, not in seeking new landscapes, but in having new eyes."
- Marcel Proust

April 20, 2017

Dicke Hall

11:00 am - 1:30 pm
Research Symposium Overview
The Lake Campus Research Coordinator is pleased to present the second annual Lake Campus Research Symposium. The Lake Campus Research Symposium provides an opportunity for the campus to showcase the scholarly achievements of faculty and students and represents one of the pillars of the Research Initiative Program. The presentations in the symposium demonstrate faculty and student commitment to pedagogy and their respective disciplines as they advance their classrooms, study areas, and community. Congratulations to Lake Campus faculty and students for their success and much encouragement as they continue in the future.

2017 Symposium Presentation and Abstracts


This presentation encompasses preserving the culture, values, gender roles, religion, and nutrition of the Native American culture. All of these aspects are important in understanding the Native American culture. Native American culture began thousands of years ago, long before Christopher Columbus came to what is now North America. More than 50 million people were roaming the land before the Europeans landed their ship in the Bahamas. In 1830, over 100,000 Native Americans were forced off of their land to allow for white people to come in and take over. During this process, Native families and tribal structures were weakened, as well as spiritual ties. Present day, there are 566 federally recognized Indian Nations with a population of 2.9 million total American Indians and Alaska natives. Today, many tribes are beginning to revive their traditions and cultures. This presentation will provide a thorough analysis of the healthcare implications associated with the Native American culture’s customs, beliefs, and practices.

• Barrett L, Simons C. 2017. How does the quality of Plennish high oleic soybean oil compare to four other commodity oils?

Labelling information and other advertising promotes Plenish® soybean oil as not only superior in health due to high levels of unsaturated fats, but also as having increased stability and improved fry-life. Plenish® oil was therefore tested along with four other commodity oils (corn, vegetable, canola and soybean) to compare shelf stability. Samples of oils were stored in duplicate for 30 days in an incubator at accelerated temperature (30°C). At the end of incubation they were tested to determine total rancidity, and the results compared with oils stored at room temperature for the same period. Rancidity of Plenish® oil stored at room temperature was significantly higher than the other oils, and did not demonstrate any superior stability compared to other oils after incubation. This is consistent with theory, given that rancidity tends to increase with increasing degree of saturation. Marketers of Plenish® soybean oil should therefore revisit their marketing information to ensure that customers are being accurately informed.
• Benitez E, Richter T, Ciampaglio CN. 2017. At the intersection of graphic design and science: Implementation of specialized exposure techniques.

When we try to record an event at a high speed, the image is moving much faster than the eye can see. This study goes more in depth of what happens during that split second the human eye cannot see. This high-speed phenomenon between two colliding water drops is achieved through a perfectly synchronized system. The techniques which provide a still life photography of these two water droplets is by means of controlling the flash to freeze time and capture the collision. Our system has a focus study in science, technology, engineering, art, and math. Our unique high-speed photography setup consisted of an Arduino Genuino, Nikon DSLR 3200, Altura flash unit, Direct acting solenoid valve, and a Bred board. We first experimented with water however; other liquids such as xanthan gum were used. The mixture of water and xanthan gum gave way higher viscosity. This mixture provided us with more artistic results; dyes were also included to this mixture.


Quantifying swimming performance of freshwater fishes typically requires sophisticated and expensive laboratory equipment, thus precluding many labs from including this component of behavior in niche analyses. Therefore, the objective of this project was to review existing performance chambers, analyze design facets from a hydrological engineering perspective, and incorporate these features into the design of a novel chamber that is feasible and affordable for any ecology lab to construct. A myriad of racetrack, flow through, and submerged tube designs were reviewed and analyzed for balancing cost and efficiency using a combination of financial budget balancing and computational fluid dynamic analyses (conducted using SC/Tetra CFD and Solidworks software) to generate a research grade product capable of producing laminar flow at a reasonable cost. A final ‘how to instructional guide’ was produced outlining a basic oval style design capable of producing laminar flow at velocities between 0 and 125cm/s. The proposed closed chamber system has a tank footprint of approximately 150 x 70cm and includes a 20 x 50 x 15cm swimming section for fish. The system is powered by a variable speed DC motor attached to a propeller controlled using gradual and continuous controls. All proposed materials are commercially available at hardware stores and implementation requires a minimal budget (under $4,000). Ultimately, this project should encourage research into this area of ecology and increase access to research equipment for smaller institutions.


The purpose of this study is to examine the effect of music and instructions on memory recall. This is important to analyze because students are required to learn or are often called upon to recall information, and many students listen to music while they are studying. We aim to investigate the potential benefits and detriments of music on study habits. Instructions are defined as explaining to participants prior to learning that music will assist them in memory recall. This study proposes the following hypothesis: music will have an effect on memory with further effect from music plus instructions, where instructions will assist with recall. Data collection is currently ongoing.
• Bulen D, Showman S. 2017. Problem oriented policing: is it time to expand the scope?

Problem Oriented Policing is a proactive approach to addressing the causes of crime. In theory, if the police can identify the causes of crime and address these root causes, the crime rate can be reduced. The one constant that transcends the crime problem at all levels is education. The lack of education is a root cause of crime. Merton’s Strain Theory suggests that delinquency is a result of a lack of opportunity, particularly economic opportunity, and the lack of educational opportunity is the primary cause of delinquency. Statistics suggest that 75% of crimes in the U.S. are committed by high school dropouts. Urban areas have several commonalities: low socioeconomic status, high dropout rates, and high unemployment. These commonalities contribute to the crime rate. A new approach would have police administrators expand Problem Oriented Policing to include educational administrators in the scanning, analysis, response and assessment (SARA) approach to crime. Scanning would include: identifying crime as a reoccurring concern to both the police and the public; identifying crime as a consequence of the lack of education; determining how frequently crimes are committed by those who lack education and how long this phenomenon has been taking place; and developing goals for addressing the crime problem by reducing the educational gap. Analysis would include: understanding how the educational gap affects the crime rate; present relevant data to educational leaders the correlation between under education and the crime rate; and develop a working hypothesis as to how a partnership between law enforcement and the educational system may effectively reduce the crime rate.

• Ciampaglio CN, Fuelling L, Mason C. 2017. Optimization of the aqueous formic-acid solution formulation and dissolution procedures used in the removal of fossil vertebrate material for carbonate rocks.

The paleontological literature contains few detailed procedures for acid preparation of macrofossils. While workers have reported detailed procedures for the safe extraction of microscopic conodont elements from carbonates, they virtually ignore the extraction of macrofossils such as teeth, scales, and other bony remains. Many times workers identify the acid reagent used without mention of concentrations or procedures employed. In the past, most workers employed a 10% acetic acid solution. While this system is safe, it is not efficient, and is a relatively slow process. A more efficient acid system is a 10% aqueous formic acid solution that is usually buffered in situ using calcium carbonate. While this stronger acid requires much less volume with regard to mass of sample to dissolved, and a much quicker dissolution time, it does have its drawbacks. These include buffering, which raises the solution pH considerably and thus diminishes the acid solution's ability to breakdown the carbonate matrix, and the formation of calcium formate, which coats the remaining carbonate material, effectively quenching the reaction between acid and carbonate matrix. In this study, we investigated optimization of the formic acid dissolution procedure by: (1) comparing buffered versus unbuffered formic acid solutions; (2) prevention of calcium formate crystals and increased reaction rate via heating and continual stirring of the acid solution; (3) testing various acid concentrations to determine the lowest, yet effective aqueous formic solution that can be employed; and (4) determining the effective length of time the acid solution retains the ability to dissolve carbonate matrix.
• Crites N, Tuthill B. 2017. German American culture and healthcare influences in the United States.

Germans immigrated to America between 1800 and 1920 in search of freedom from the political and economic system in Europe. German Americans encompass approximately 15 percent of the United States making them the largest ancestral group in the nation. Because of their large numbers in the US, they are at risk for many diseases that America encloses. While taking care of a patient with a German decent, the health provider has to recognize their religion, dietary preferences and emotional stressors in order to properly formulate a plan of care. The Germans are very religious and with a background of Lutheran and Catholic, they have aided Americans in the creation of Sunday being a day of rest and religion. Because of their diet that is high in sodium and processed foods, Germans are predisposed to developing obesity and hypertension. Also, the hefty diet of beer helps contributes to German Americans being at risk for cardiovascular disease. Germans value a thorough education and family just like many other American descents. This presentation will dive deeper into the German culture and the aspects that affect their care.


Academic mentoring has become a critical area for scholarly investigation due to its correlation to graduate student success. Consequently, the underpinning tenets of how mentoring relationships develop, along with how these relationships are perceived by both mentor and protégé, continue to serve as fertile ground for exploration among scholars in leadership and educational disciplines. Opportunities for further mentoring erudition became apparent with increased enrollments of graduate students from underrepresented and/or minority groups. It became possible to observe how mentoring functioned when mentor and protege hailed from heterogeneous ethnic and cultural backgrounds. This study was conducted to investigate how one cross-cultural, academic, mentoring dyad was established, in addition to the mentor and protege perceptions of their mentoring relationship. Of particular interest was how the mentoring relationship actually developed, in comparison to the mentoring developmental paths explicated by Kram (1985) and Lechuga (2011). Qualitative data gleaned from interviews constituted the basis of the researcher’s analysis and interpretation for this enquiry.

• Daniel D. 2017. Translating Paracelsus’s Astronomia Magna (1537/38) from early modern German to English.

The Astronomia Magna of 1537 and 1538 is the monumental magnum opus of Theophrastus Bombast von Hohenheim, called Paracelsus (1493/4-1541). Given its influence on such luminaries as Isaac Newton and Robert Boyle, as well as thousands of physicians during early modernity, I have undertaken the task of producing an English-language translation and edition of the 444-page text. I will highlight and speak to the peculiarities of Paracelsus’s Early Modern German (which is technically called Frühneuhochdeutsch, Early Modern High German) and Latin while summarizing main aspects of this Meisterstück. Included are his idiosyncratic definition of “astronomy,” categories of magic, and views on the genealogy of Christ, which is central to his cosmology. Another prevalent theme is Paracelsus’s discussion of the participation of living Christians in the immortal realm, a theme developed in his Eucharistic tracts and ubiquitous in his universal ontology. Paracelsus’s followers, including his editors, often misunderstood or misrepresented the intricacies of their master’s views regarding Christology and the Lord’s Supper. This translation brings new insight into and a better understanding of the Weltanschauung of the bombastic medical practitioner, natural philosopher, and lay theologian.
Faragher M. 2017. Cooper’s Snoopers: women and the cultural history of political polling in World War II.

This project traces the role of women in the early years of institutionalized statistical political polling. While women were not often considered vital to the history of data analytics in politics, the controversy around the Ministry of Information’s domestic intelligence program in the 1940s reveals that the public often saw a connection between women and the collection of public opinion data during the war. Tracing the vital role of women in the works of Mass Observation –particularly Naomi Mitchison and Mary Adams - this article argues that women were strong patrons for the qualitative methods of Mass Observation, and challenged the quantitative and statistical modes of public opinion collection favored by many within governmental bureaucracies. While attacks on MO’s methods, most notably the “Cooper’s Snoopers” controversy, were fuelled by an anxiety about espionage, this essay suggests that they were also undergirded by a disregard for women’s experiences. The backlash against qualitative methodology, which would eventually undercut Mass Observation, also undermined the perspectives of the many women who saw these methods as a way of validating experience over supposedly “neutral” statistics. Mitchison’s novel, in this reading, speaks allegorically to the importance of qualitative methodologies for interpolating public opinion. Within this context, We Have Been Warned similarly stages a conflict between these two methods of understanding public opinion. Despite skepticism from men about the validity of their experiences, through its advocacy of subjective epistemology as a means to interpret public opinion, Mitchison’s interwar novel speaks directly to contemporaneous debates over data collection and polling.


This paper examined the lived reality of women in addiction recovery and perceptions of their experience in a self-defense program. A feminist self-defense modeled program was used within this setting. The self-defense program was designed to address gender issues, situational awareness and provide physical self-defense techniques. These aspects of the self-defense program appeared to complement the goals of Recovery House, an alternative incarceration facility. Utilizing a qualitative research approach, the women of Recovery House felt an increased confidence in their ability to protect themselves, increased their sense of safety, increased their situational awareness level, and increased their decision-making ability. Reflective of their experience with violence, many of the women of Recovery House indicated that a female instructor was ideal. Lastly, many of the participants stated that the self-defense program “fit” the facility’s programing where intended outcomes were an increase their confidence, independence and good decision-making. Overall implications suggested that a feminist self-defense modeled program could be used to compliment/re-enforce the goals of a recovery program.


This presentation is a synopsis of Chinese American culture, including cultural values and family life, fertility and socialization, gender issues, aging and death, religion, nutritional preferences, and family stressors and problems. Each of these cultural components directly affects the overall well-being of the Chinese American and will then determine the type of care that nurses will give to each individual in the healthcare setting. Today in America, there are a reported 3.3 million people who identify themselves as Chinese (Hoeffel 2012). With this ever-growing Chinese population, it is important to understand the different aspects that are essential to Chinese culture in order to be a more culturally competent nurse and to administer the best care possible.
Hochstein D. 2017. The effects of study habits on Lake Campus students’ test anxiety.
A particularly effective studying strategy, taking online practice quizzes, could potentially be linked to higher or lower levels of test anxiety for students. The current study is an initial examination of the effect that class type and student personal characteristics play on anxiety and study strategies, as well as students’ experiences taking online practice quizzes. In this initial examination, students (n = 156) at a small rural university campus completed a survey which collected personal characteristics and the following questions for each of the courses they were currently enrolled in: course type (e.g. engineering), their experience of online practice quizzes, and strategies used while studying. Results were analyzed through t-tests and repeated-measures ANOVAs. Females reported statistically higher test anxiety than males overall, and specifically for Math and Science classes. Students who took online quizzes associated them with reducing anxiety for 37.7% of individual classes and increased anxiety for 5.3% of individual classes, with this effect being more pronounced for first-year respondents. In 94% of the individual classes, practice quizzes were reported to be helpful in learning the material. Additional significant differences between the average reported use of particular study strategies based on personal characteristics and based on class type were also found. Students are likelier to employ less effective study strategies than practice quizzes, despite finding practice quizzes helpful and being more associated with decreases in anxiety than increases.

Hochstein D. 2017. The effects of personal characteristics and class type on Lake Campus students’ time.
While the number of hours college students spend studying has been extensively used as a variable in past psychological research, little work has been done to examine the roles student personal characteristics, and type of class play on this factor. In this initial examination, students (n = 156) at a small rural university campus completed a survey which collected personal characteristics and answers to the following questions for each of their current courses: course type (e.g. engineering), test anxiety, and hours studying per week (during weeks with and without tests). Time spent studying was positively correlated with anxiety in both test weeks and non-test weeks. Third year and above students reported significantly more time studying per week (M = 1.88 hours) than did the first year students (M = 1.19 hours). Additionally, a significant three-way interaction informed the relationship between test presence, gender and academic status on hours reported studying per week. Males increased hours of studying per week with increased academic status, while females’ hours of studying per week related to the interaction between test presence and academic status. Finally, significant gender differences in reported hours of studying within particular class types were only found for the Anatomy/Biology/Chemistry classes, with females reporting more time studying than males, for both weeks with and weeks without tests. In conclusion, personal characteristics were demonstrated to have an impact on the number of hours of studying reported per week, with further clarification based on presence of an exam during week and class type.

There are approximately 50 million Hispanic Americans currently living in the United States, while most are prominently found in Arizona, California, New Mexico, and Texas. Hispanics are often described as family oriented, hard-working, religious, and independent individuals. Catholicism is the most common religion practiced in the Hispanic culture; moreover, religious beliefs are the center of all marriages and families to strengthen faith and family in a home. Generally, men are viewed as the authority figure of the family to protect and provide while the women focus on maintaining the household and taking care of their children; however, spouses come together during decision making in family matters. Some family obstacles can arise from socioeconomic status, racism and adapting to a new society, which causes many stressors in their life. The culture’s intake of bread, rice, beans, spicy sauces, and alcohol all play a role in overall health, causing Hispanic Americans to be at high risks for cardiovascular diseases due to the occurrence of high blood pressure, obesity, and diabetes. As nursing professionals, it is important to keep in mind the unique cultural differences that individuals may hold that affect their beliefs and values; therefore, it sets the standards of how they want to be cared for and respected.


Haiti is one of the poorest countries in the hemisphere. The majority of Haitian families live on less than two U.S. dollars per day. Haiti is about the size of Maryland with a population of 10,962,028. It is a Caribbean island with a republic government consisting of two legislative houses, the Senate and the Chamber of Deputies. Haitian Creole and French are the official languages, and Roman Catholics make up over half of the population. Within the family men are the head of the household, and women are in charge of taking care of the children. Rice and beans is the most common meal. Lack of money causes the people in Haiti to have less access to nutrient rich food; this can pose a problem with malnutrition and related conditions. This presentation will be about the population of the United States that are Haitian immigrants and the differences in culture that will affect their care in a hospital setting.

• Huelskamp D, Cavanaugh J. 2017. What makes a student responsible? How can faculty encourage it?

At all levels of education it is widely accepted that superior learning outcomes are achieved when students take an active role in their studies. Unfortunately, there is often little effort made by instructors to help students become more responsible for their own learning. This presentation outlines approaches that instructors can use to inform students of the importance of being responsible for their learning, activities that will encourage this behavior, and ways to develop courses that will facilitate students to take a more active role in their education. A preliminary pilot study is conducted to investigate if responsible students achieve better grades and if student’s recognize the value of being responsible for their own learning.

Understanding variability in swimming performance of freshwater fishes has implications for improving descriptions of ecological niches, establishing evolutionary relationships, and providing management and conservation recommendations. Swimming performance is associated with anatomical, physiological, and environmental variation, although the vast majority of swimming performance research to date has focused on larger game species to the exclusion of smaller non-game taxa, which represent the largest portion of North American freshwater fish diversity. Thus, the objective of this study was to assess a previously unstudied area regarding how swimming covaries with body size, sex, watershed, and habitat types of these smaller non-game taxa. A Blazka style swimming performance chamber following a stepwise critical swimming performance (Ucrit) protocol was used to quantify individual variation in four species of common Ohio Minnows (Cyprinidae: Bluntnose Minnow, Spotfin Shiner, Sand Shiner, and Redfin Shiner). Using a series of general linear models at both a global (taxa combined) and local (taxa specific) scale trends were identified across all individuals (N=150 total individuals). First, species differed in swimming performance, even after controlling for cofactors such as body size. Second, slopes depicting relationships between swimming performance and body size were not consistent among taxa and moreover, sex did not appear to play a role in swimming ability. Lastly, species specific models indicated inconsistent differences among taxa related to watershed and habitat variation. Overall, these results provide an important contribution to furthering our understanding of small bodied non-game fishes.

Junker C. 2017. From spinster domesticity to spinster gothic: Mary Wilkins Freeman’s haunted houses.

Over the course of her decades long writing career, Mary Wilkins Freeman’s stories are strongly preoccupied, obsessed even, with houses whose modesty belie the layers of meaning behind these unassuming spaces that are often tense with contradiction. Not surprisingly, then, Freeman’s work is well-known for its depictions of domesticity, and most feminist critics read her version of domesticity as paying homage to the expectations of sentimentalism during the time period in which she was writing, while also providing her female characters with a sense of liberation and autonomy, in spirit if not in fact. Freeman’s haunted house stories, published beginning in 1903, expose a remarkably different view of the possibilities of domesticity offering long-term liberation and comfort, however. Though representative of a brief period and body of works for Freeman, her supernatural tales offer a forceful critique of, and perhaps, personal loss of faith in the triad of nineteenth century womanhood: domesticity, sisterhood, and motherhood. Moreover, the specter of female embodiment that haunts her earlier works, while still a figure of horror, transforms into a kind of wisdom that her female characters would do well to heed. In revising our readings of the significance of the figure of the house in Freeman’s work, we can better understand both the female gothic and domestic literature that was so significant during the nineteenth and early twentieth century for American women writers.

Higher education research pertaining to student descriptions and successes have classically been directed towards traditional four- and two-year institutions while those institutions referred to as “branch” campuses have been largely ignored. Our research used a cohort methodology to track a single group of students for six years to compare a branch to main campus of a large (>15,000 students) Midwestern university relative to demographic, academic, socioeconomic, and institutional variables. Overall, the branch campus was characterized by older students, a lower percentage of minorities, similar ratio of male to female, lower average high school GPA, a higher percentage of first generation students, and a higher percentage of Pell-eligible students when compared with the main campus. Moreover, the graduation rate of branch students was found to be less than the main campus – a difference found to be independent of all other demographic, academic, and socioeconomic factors in general linear modeling analysis that indicted a 7% reduction in graduation likelihood tied to the branch campus. As branch campuses expand these sorts of patterns will need to be assessed on a broader scale and strategies to improve the learning environments of this large portion of the public higher education institution need to be discussed.


During a recent small-scale excavation a geologic unit, within the Mississippian Leitchfield Formation (Chesterian), was exposed along State Route 259 in Grayson County, Kentucky, south of the city of Leitchfield. The lithology of the unit is composed of shales, mudstones, sandstones, and limestones. Within this unit, there is a fossiliferous limestone which upon weathering turns yellowish in color due to the oxidation of its iron content. The unweathered unit is light to medium grey in color. The layer is 1.5 centimeters thick at its thinnest, and 28 centimeters in thickness at its maximum. In addition, a 6 centimeter thick shale layer sits atop the thickest part of the limestone layer and is also fossiliferous in content. These two units, within the Leitchfield formation, contain both terrestrial and marine vertebrate remains, including chondrichthyan teeth, denticles, and scales; osteichthyan jaws, teeth, scales and boney elements; sarcopterygian remains including teeth and bones, and amphibian remains consisting of boney elements. Furthermore, these two units appear to be a vertebrate bone-bed layer. Currently, analysis of the lithology, depositional environment, and taxonomic identification and description of the vertebrate material contained within the unit is underway. Additional research will help define the lateral extent of this bone-bed layer at other Leitchfield Formation exposures in Grayson County.

Eutrophication is one of the greatest threats to water quality today. This phenomenon is borne out of excess nutrients flushing into watersheds at both a local and regional scale. This project will assess the efficacy of a series of retention ponds coupled with a riparian saturated buffer tile system in an effort to reduce nutrient and sediment loads prior to discharge into waters of the state. This alternative to conventional agricultural drainage design reroutes existing field tiles to feed retention ponds which can then be used as an irrigation source for existing fields or riparian areas. The retention ponds prevent excess nutrient rich non-point source runoff from entering into streams while providing a reservoir opportunity for crop land irrigation. This approach facilitates an organic remediation of water by allowing nutrients to be reapplied or absorbed by the natural riparian vegetation instead of passing directly into streams where they would ultimately contribute to eutrophication. Reduction of nutrients and sediments into streams would not only provide a valuable ecosystem service locally but also contribute to mitigation on a much larger scale, such as widespread eutrophication trends in downstream areas of the Lake Erie watershed. The proposed project outlines a multi year monitoring program that would provide quantify data pertaining to volume as well as nutrient and sediment load retention potential of a new type of agricultural and water quality system and provide a unique contribution to Ohio and the overarching Nutrient Management Strategy.

• Reymann CA. 2017. Freeing American literature.

This poster explores the life and work of Anne Bradstreet, America’s first poet. Although literary scholars respect Bradstreet as the founder of American poetry, they often dismiss her poems as constrained and lackluster. In reality, Bradstreet was torn between a need to conform to society’s values and fit in, and an equal need to express herself honestly. The Puritan doctrines that dominated early American life and the typical restrictions that came with female authorship vied for influence in Bradstreet’s writing. Bradstreet dealt with these conflicting ideals by adopting a split personality. When she writes as Mistress Bradstreet, her work presents the attitude of a proper religious lady and self-deprecating public poet. However, when she writes simply as Anne, this other side reveals glimpses of a more passionate woman who discusses the fears, joys, and intimacies of life. Anne Bradstreet’s poetry should be examined in relation to her place in history, as an early American woman writer. In the moments when docile Mistress Bradstreet gives way to quietly rebellious Anne, the true value of her work is evident. Bradstreet not only initiated the legacy of uniquely American poetry, she also laid the foundations for one of its most common and debated themes - freedom.
Every day, companies across the United States are looking for ways to improve their processes while saving money. One of the ways this can be done is by implementing automation into their processes. By replacing an employee with a robot and end of arm tooling (EOAT), the job can be performed in a more effective manner, and reduce the cost of the process. Machine Concepts provided our team the opportunity to develop a complete engineering design of an EOAT for a real-world application of lifting two variations of engine blocks. By considering the recommendations of Machine concepts and completing our own research, testing, and analysis we developed conclusions on which components to select. A completed budget resulted from the research and selection of components. After presenting the completed engineering design to Machine Concepts in December 2016, the finalized design was tested and manufactured. To complete the tasks presented, skills of each team member were utilized and improved upon. All aspects of the project were completed by April 2017. Guidelines presented by Machine Concepts, Accreditation Board for Engineering and Technology (ABET), and Wright State University were considered and met throughout the duration of the project. Along with the guidelines presented, specific focus was given to reducing the cost of the EOAT while boosting productivity and efficiency in the manufacturing process. By utilizing and improving upon our engineering skills, a completed engineering design was developed, testing was completed, manufacturing of the EOAT was done, and all reporting and documentation were submitted electronically and in hardcopy.

• Simons C, Henry N. 2017. Production of resistant starch from edible beans.
Foods high in resistant starch such as cooked edible beans, digests slowly, resulting in lower glycemic index for diabetic patients. After drying and milling, resistant starch decrease due to greater access of α-amylase enzymes to the starch polymer. Therefore, in order to enhance resistant starch properties of milled edible beans, various methods need to be applied such as starch gelatinization, enzymatic modification, and retrogradation. Four methods were used to create resistant starch (RS3) and their effect on yields of RS3 compared.

• Stevenson M, Hennon M, Simons C. 2017. Effect of centrifugal mill speed on particle size and characteristics of pinto bean flour.
Characteristics, functionality and usability of legumes and grain flour can be affected by particle size. Therefore, pinto beans were milled at increasing speeds from 6000 rpm to 18,000 rpm in a centrifugal mill. Milled flours were then analyzed to determine the effect on proximate composition (starch, protein, ash, lipids, and moisture), color, water absorption index and water solubility index.

• Sudhoff E, Post K. 2017. Amish healthcare and customs in rural America.
The American Amish culture has been a visible population since the 18th century. They predominantly reside in the states of Ohio, Pennsylvania, and Indiana and are known for their simple living, plain dress, and devotion to God. Most of the Amish follow the rules of the Ordnung, which outlines their faith, beliefs, and rules for living. A typical Amish family consists of 8-9 people, each having distinct jobs and responsibilities. The Amish men make all of the decisions and take care of the farm while the women take care of the household and children. This presentation includes a synopsis of Amish cultural values, family life, and nutritional and health related issues. By living in a region that has a significant population of Amish Americans, it is important for the nurse to understand the culture fully to be able to provide high-quality culturally sensitive care.

D. Harlan Wilson's biocritical study of J. G. Ballard is the first book to account for the entire life and work of the eccentric, prolific SF author. Ballard began his career publishing short stories in SF magazines. Rather than explore outer space, his fiction explores “inner space,” drawing on the aesthetics of Surrealism and Freudian psychoanalysis. In the 1960s, he became associated with the New Wave movement in SF, which eschewed the principles of pulp SF in favor of literary modernism. Ballard’s oeuvre maps the unfolding of the mediapocalypse from the dawn of the Space Age into the 21st century; pathologized by the technology of electronic media, his characters are chronically harrowed by an implosion of real and cinematic landscapes as they struggle to find agency from the “death of affect” incited by the forces of late capitalism. Some scholarship has tried to remove Ballard from SF, arguing that he abandoned the genre halfway through his career, especially after publishing the fictional autobiography Empire of the Sun. As Wilson avows in this book, however, Ballard began as, and always remained, a SF writer.


Exam question banks that accompany textbooks are routinely pirated and sold on the internet. One remedy is to establish an OpenCourseWare collection of exam questions available to all. This public bank could be combined private reserves of questions maintained by instructors on private wikis. These private wikis could be also used by students tasked with creating questions and/or explanations in a secure environment that precludes students seeing each other’s work. The private wikifarm Miraheze can be configured to allow instructors to view student contributions in real time. Advanced students are quite proficient at reading chapters and producing quality questions, with little or no supervision. Less advanced students can asked to contribute by changing the wording of questions already published on Wikiversity. This helps them study for upcoming exams, and also enriches the public OpenCourseWare collection of questions. And it can inspire new versions of these questions that reside in the instructors’ private banks. While these measures will not prevent questionbank piracy, the banks (all written in wikitext) could grow to become so chaotic and spread out among various wikis that the information would be "hidden in plain sight".