

# THE WRIGHT STATE — LAKE CAMPUS 2020 — 2021 SCHOLARLY REVIEW



\* ANNUAL RESEARCH REPORT (2020)

\* RESEARCH SYMPOSIUM PROGRAM (2021)

## Lake Campus Research Report - 2020

### 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 1,750 students and facilitated by 37 full time faculty. The scholarly achievements contained in this report represent the Faculty's commitment to pedagogy and their areas of study as they contribute to their classrooms, disciplines, and community.

The Lake Campus Research Initiative provides a campus-wide framework to encourage scholarly activities by faculty and students. The program is designed to support scholarship by providing funding for research infrastructure, supplies, travel, and publishing costs as well as by sponsoring events that contribute to the campus's research mission.

The Lake Campus Research Coordinator is pleased to present the sixth annual Lake Campus Scholarly Review. This report provides a listing of scholarly endeavors from Lake Campus over the 2020 calendar year and spans across all Lake Campus disciplines. Congratulations to Lake Campus for their research success and much encouragement for the future.



# LAKE CAMPUS SCHOLARSHIP

## Strategic Highlights from 2020

- In 2020, the fifth annual Lake Campus Research Symposium was held online amid the global COVID-19 pandemic. This event grew to be centered around well over 40 research projects presented by over 85 faculty and students.
- The internal grants program that was launched in 2015 continued to provide support to both faculty and students. In 2020, the program facilitated funding for around a dozen projects. To date, this support has facilitated over 200 examples of scholarship from the campus, ranging from publications to presentations to external proposals.
- For the fifth year in a row, faculty and faculty mentored students produced over 100 units of scholarship - spanning peer reviewed journal articles, contracts and grants, books, book chapters, book reviews, novelettes, reference works, short fiction works, plays, and scholarly presentations at local and national conferences.



### **Mission of the Lake Campus Research Initiative:**

***To advance scholarship and encourage lifelong learning of students and faculty by providing access to project funding, facilitating project resources and support, and hosting the Annual Research Symposium.***

## Research Articles

- Attariani H, Wang WS, Galek R. 2020. A thermodynamically-consistent multi-physics framework for crystallization of phase-change material. *Journal of Crystal Growth* 542: e125687.
- Faragher M, Krzakowski C. 2020. Modernist Institutions. *Modernism/modernity* 5(Cycle 2): *Print Plus Platform*.
- Follo G. 2020. Teaching personal protection and safety to middle school students in physical education. *Journal of Physical Education, Recreation & Dance* 91(5): 55-56.
- Fulks M. 2020. Culture, Community, and Covid-19, A Love Letter to My Senior MCE Graduates. *In The Middle Journal*.
- Gunnoe CD Jr, Daniel DT. 2020. Anti-Paracelsianism from Conrad Gessner to Robert Boyle: A Confessional History. *Daphnis* 48: 104-139.
- Jacquemin SJ, McGlinch G, Dirksen T, Clayton A. 2020. On the potential for saturated buffers in northwest Ohio to remediate nutrients from agricultural runoff. *PeerJ*. DOI: 10.7717/peerj.9007.
- Jacquemin SJ, Junker CR, Cubberley MS. 2020. Does a prolonged faculty strike in higher education affect student achievement in first year general education courses? *Journal of Collective Bargaining in the Academy* 11 (Article 6): 1-17.
- Jaqueth AL, Jacquemin SJ. 2020. Potential of pasture grasses to reduce soil runoff in simulated spring seeding applications. *Forage and Grazing Lands Brief. Crop, Forage, and Turfgrass Management* 6(1): e20071.
- Jaqueth AL, Turner TR, Iwaniuk ME, McIntosh BJ, Burk AO. 2020. Relative Traffic Tolerance Of Warm-Season Grasses And Suitability For Grazing By Equine. *Journal of Equine Veterinary Science*, 103244.
- Johnson M, Hess W, Cubberley M. 2020. An inexpensive recirculating water aspirator pump for the chemistry laboratory. *Journal of Chemical Education* 97(5): 1495-1499.
- Jungers J, Cherney J, Martinson K, Jaqueth AL, Sheaffer C. 2020. Forage nutritive value of modern alfalfa cultivars. *Crop, Forage & Turfgrass Management*, 6(1).
- Junker C, Jennings H. 2020. Surviving girlhood: wild girls in the anthropocene. *ISLE: Interdisciplinary Studies of Literature and Environment*. 1-28 (isaa 127).
- Junker C. 2020. Writing the unruly body: disability, bodies, and space in Wallace Stegner's *Angle of Repose*. *Studies in the Humanities* 46: 175-192.

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- Junker C. 2020. Introduction to Special Issue on Disability Studies and Ecocriticism. *Studies in the Humanities* 46: i-xviii.
- Li L, Shin E, Attariani H, Wang WS, Subramanyam G. 2020. Experimental demonstration of vanadium dioxide phase change thin film based tunable spiral inductors. *ECS Journal of Solid State Science and Technology* 9(7): e075003.
- Peterman RC, Hebdon N, Ciampaglio CN, Yacobucci MM, Landman NH, Linn T. 2020. Syn vivo hydrostatic and hydrodynamic properties of scaphitid ammonoids from the US Western Interior. *Geobios* 60: 79-98.
- Peterman DJ, Shell RC, Ciampaglio CN, Yacobucci MM. 2020, Stable hooks: biomechanics of heteromorph ammonoids with U-shaped body chambers. *Journal of Molluscan Studies*, 86: 267–279.
- Peterman, DJ, Yacobucci MM, Larson NL, Ciampaglio CN, Linn T. 2020. A method to the madness: Ontogenetic changes in the hydrostatic properties of Didymoceras (Nostoceratidae: Ammonoidea). *Paleobiology* 46(2): 237–258.
- Reiter AS, DiCostanzo A, Webb M, Zeltwanger J, Sheaffer CC, Jaqueth AL, Martinson KL. 2020. Forage quality and beef cow preference is affected by wrap type of conventional and reduced-lignin alfalfa round bales stored outdoors. *Translational Animal Science* 4(3): txaa167.
- Shell RC, Peterman DJ, Ciampaglio CN, Armstrong AA, Fuelling LJ. 2020. A fossil molluscan fauna from the Lower Lueders Formation of North-Central Texas. *Southeastern Geology* 54(1): 1-19.
- Zhang W. 2020. Improved High Order Methods Using Boundary Layer Detection for a Singular Perturbation Problem. *Journal of Applied Mathematics and Computation* 4(4): 189-194.
- Zhang W. 2020. Motivating and Engaging Students in Active Learning of Mathematics: Mathematical Theorems and Applications in Undergraduate Studies, *AURCO Journal* (26): 173-183.

### Technical Reports

- Jacquemin SJ, Dirksen TA, Birt J, Strang B, Ewing C, Axe B. 2019. Grand Lake St Marys Watershed Reconstructed Wetlands Update. Quick Facts Sheet Prepared by Ag Solutions and Lake Restoration Commission (Mercer Co, OH).

## Books and Edited Collections

- Kich M. 2020. Consulting Editor and Author of Bibliographic Article on Maya Angelou for *Contemporary Literary Criticism*.
- Wilson DH. 2020. *Outré*. Novel. Raw Dog Screaming Press.
- Faragher M, Krzakowski C. 2020. *Modernist Institutions*. Edited Collection. Modernism/modernity.

## Book Chapters, Magazine Articles, Essays, Short Fiction, and Articles in Collections

- Wilson DH. 2020. Ideology of the Sun. *Alienist Magazine* 8: 61-64.
- Wilson DH. 2020. Barry N. Malzberg and the Gravity of Science Fiction. Introduction to *Revelations*, by Barry N. Malzberg. *Anti-Oedipus Press* 11-25.
- Wilson DH. 2020. The Yak and the Ram: An Essay on Domesticity. *Alienist Magazine* 7: 80-82.
- Wilson DH. 2020. Selections from *Outré* and *Usurper*: "Nature," "Heliocentrism," "Scene," "The Choreography of Dining," "Behind the Law," "Seven Days of Nudity," and "In the Daze of the Caveman." *Three Crows Magazine* Issue 8.
- Wilson DH. 2020. Laundromat. *The Café Irreal* Issue 76.
- Wilson DH. 2020. Velvet Sunshine. *Fiction International* Issue 53: Algorithm.
- Wilson DH. 2020. Cops and Bodybuilders. *Tales of What: The D. Harlan Wilson Mixtape*. Podcast: Season 1, Episode 3. Read by Persephone Rose.
- Wilson DH. 2020. At the Funeral. *Tales of What: The D. Harlan Wilson Mixtape*. Podcast: Season 1, Episode 3. Read by Justin Fife.
- Wilson DH. 2020. The Arrest. *Tales of What: The D. Harlan Wilson Mixtape*. Podcast: Season 1, Episode 3. Read by Luke Kondor.

## Book Reviews and Literary Critiques

- Wilson DH. 2020. Coffee Table Wikis. Review of *Cult Writers: 50 Nonconformist Novelists You Need to Know*, by Ian Hayden Smith. *Extrapolation* 61.3: 361-64.
- Wilson DH. 2020. Ode to Paranoia and Optimism. Review of *Close Encounters (Constellations)*, by Jon Towlson. *Extrapolation* 61.1-2: 244-47.
- Daniel D. 2020. Review of Bruce Moran's *Paracelsus: An Alchemical Life*. University of Chicago Press, Chicago. Review in *Magic, Ritual, and Witchcraft*.

## Forthcoming Scholarship

\* Section includes works accepted, under contract, or in press but not yet published

- Daniel, D.T., and Daniel, A.J.S., 2021 “Debates on the origins of music in the early reception of Darwin.” *History of European Ideas*.
- Daniel, D.T. 2021, “Invisible Beings in the Natural World: Paracelsus on Ghosts, Angels, and Elemental Creatures in the *Astronomia Magna*.” Submitted to *Ambix*.
- Ebersole JA, Cicimurri DJ, Jacquemin SJ, Stringer GL, Ciampaglio CN. Expected Release Date 2022-2023. Fossil Sharks and Bony Fishes of Alabama. Book, University of Alabama Press.
- Faragher M. 2021. *Public Opinion Polling in Mid-Century British Literature: The Psychographic Turn*. Oxford University Press.
- Kich M. *Forthcoming*. A Collection of Essays on Jamaica Kincaid. Publisher TBD.
- Kich M. *Forthcoming*. The Evolution of the Western Films. A companion volume to the volume on Westerns. Santa Barbara, CA: ABC-CLIO/Praeger.
- Marshall MM, McCluney KE. 2021. Mixtures of co-occurring chemicals in freshwater systems across the continental US. *Environmental Pollution* 268B
- McGlinch GJ, Jacquemin SJ, Lindsey LE. 2021. Evaluating winter malting barley grain yield with fractional green canopy cover. *Crop, Forage, and Turfgrass Management*.
- Wilson DH. 2021. *Jackanape and the Fingermen*. Drama. Black Scat Books.
- Wilson DH. 2021. *Peckinpah: Un Romance Ultravioleta*. Trans. into Spanish by Adolfo Villafuerte. Ediciones Vestigio.
- Wilson DH. 2021. The Contours of Objective Reality: A Letter to the Father. *Alienist Magazine* 9.
- Wilson DH. 2021. Marshall McLuhan. *Fifty Key Figures in Cyberpunk Culture*. Routledge.
- Wilson DH. 2021. Verhoeven’s America. Review of *Constellations: Robocop*, by Omar Ahmed. *Extrapolation* 62.1.
- Wilson DH. 2022. *Constellations: Minority Report*. Film Criticism. Liverpool University Press.
- Wilson DH. 2023. *A New Canon: The Stars My Destination*. Literary Criticism. Palgrave.
- Wilson DH. 2024. *Usurper*. Novel. Raw Dog Screaming Press.
- Wilson DH. 2025. *This Is the War Room: The Science Fiction of Stanley Kubrick*. Film Criticism. Liverpool University Press.
- Wilson DH. 2025. *Kill the Reader: The Alienist Essays*. Nonfiction Collection



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- Wilson DH. 2026. *Diagnosis Reality and Other Plays*. Drama.
- Wilson DH. 2027. *Yellow Mike*. Novel.

### Conference Presentations and Proceedings

- Mitchell M, Ciampaglio CN, Peterman D, Shell RC, Fueling LJ, Jacquemin SJ. 2020. Changes in Chondrichthyan tooth niche space across the Permian-Triassic boundary. *Geological Society of America* – North Central Section – Duluth, MN. Abstracts with Programs 52(5).
- Ledsky IR, Olson NE, Shi J, Cooke M, Birbeck JA, Jacquemin SJ, Westrick J, Schmale DG, Ault A. 2020. Detection of toxins from harmful algae blooms: identifying markers for Microcystin-LR. *National Meeting of American Chemical Society* – Philadelphia, PA.
- Mitchell MG, Ciampaglio CN, Peterman DJ, Shell RC, Fuelling LJ, Jacquemin SJ. 2020. Changes in Chondrichthyan tooth niche space across the Permian-Triassic boundary. *Geological Society of America* – North Central Section – Duluth, MN. Abstracts with Programs 52(5).
- Peterman DJ, Osborn AS, Ciampaglio CN. 2020. Echinoid Fauna of the Lower Pleistocene Waccamaw Formation. *Geological Society of America* – Southeastern/Northeastern Section - Reston, VA. Abstracts with Programs 52(2).
- Peterman DJ, Inoue S, Mikami T, Ciampaglio CN. 2020. Why were Ammonite sutures so complex? An investigation of liquid retention in the septal margins of Ammonoid shells. *Geological Society of America* – North Central Section – Duluth, MN. Abstracts with Programs 52(5).
- Shell RC, Ciampaglio CN, Cicimurri DJ. 2020. A marine vertebrate fauna from the Asselian Stage (Early Permian) of Eastern Kansas, USA. *Geological Society of America* – National Meeting – Online. Abstracts with Programs 52(6).
- Shell RC, Peterman DJ, Ciampaglio CN. 2020. Additional vertebrates from the Wreford Limestone (Permian: Cisuralian, Sakmarian) of Southern Kansas. *Geological Society of America* – North Central Section – Duluth, MN. Abstracts with Programs 52(5).



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- Shell RC, Ciampaglio CN. 2020. Composition of marine fish communities during the Early Permian Period in Central North America. Society of Vertebrate Paleontology – Online.
- Simons CW, Ciampaglio CN. 2020. Simpler method to compare starch hydrolysis rate and in vitro expected glycemic index of flours. Cereals & Grains Association – Online.
- Wilson DH. 2020. Discussions and Panels. Prague Microfestival XII. Online Literary Convention. Sponsored by Equus Press and Litteraria Pragensia.
- Wilson DH. 2020. Discussions and Panels. Writing in the Dark. Online Symposium. Sponsored by Guide Dog Books and Raw Dog Screaming Press.
- Wilson DH. 2020. Staying Home, Staying Creative. Online Panel. AllAccessCon. Sponsored by Raw Dog Screaming Press.
- Wilson DH. 2020. Discussion of The Psychotic Dr. Schreber and Philip K. Dick's Lies, Incorporated. Dickhead's Podcast. Moderated by David Agranoff.
- Crites B. 2020. STEM is a culture not a class. *Ohio Middle-Level Association Regional Workshop* – Sandusky, OH.
- Crites B. 2020. Picture perfect STEM, *Mercer County Professional Learning Conference* – Celina, OH.
- Simons CW, Osorno JM, Fuelling L. 2020. Color does not predict Anthocyanin content in canned black beans. Cereals & Grains Association – Online.
- Prigge JL, Sheaffer CC, Jungers JM, Jaqueth AL, Lochner HL, Martinson KL. 2020. Investigating the Use of Cover Crops in Equine Grazing Systems. *American Forage & Grassland Council Annual Conference* - Greenville, SC.

### Active Research Agreements and Scholarly Grants

- Attariani H. 2019-2020. 3D Bending Wire Bending Machine. Western Ohio Educational Foundation - \$800.
- Attariani H. 2020-2021. A Hybrid Fuel Cell – Battery –Capacitor Power Source for UAVs. Ohio Federal Research Network – CO PI Budget Portion \$167,000 (Total Project Budget - \$1,200,000).
- Attariani H, Wang W. 2020. High Dielectric Materials Study for Next Generation Power Device. Lake Campus Research Initiative - \$1,250.
- Attariani H. 2020. Crystallization Kinetics in Phase Change Materials. Ohio Super Computing (Computational Grant) - \$1,000.

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- Crites B. 2020. Summer STEM Camp Fund. Mercer County Civic Foundation - \$1,000.
- Crites B. 2020. High Flying Coding in Education-Drones. Western Ohio Educational Foundation - \$1,500.
- Cubberley M, Junker C. 2020. Grand Lake St Marys Environmental and Cultural History Project Narrative. Western Ohio Educational Foundation - \$1,000.
- Follo G. 2020. Faculty Led Retention Program (FLRP). Wright State University Undergraduate Student Success Committee and Graduate Student Affairs Committee (FLRPC) - \$3,378.
- Jacquemin SJ. 2017-2021. Reconstructed Wetland Monitoring in Grand Lake St Marys. St. Marys Community Foundation – 2020 Budget Expansion - \$33,272 – Total Project \$147,320.
- Jacquemin SJ. 2019-2023. Nutrient and Sediment Retention Potential of a Saturated Buffer in Grand Lake St Marys Watershed. Blanchard River Demonstration Farms Network – Ohio Farm Bureau - Total Project \$61,468.
- Jacquemin SJ. 2020. Targeted Sampling of an Unanticipated Harmful Algal Bloom in Lake Anna, Virginia with Aerial and Aquatic Robots. National Science Foundation (NSF RAPID) - \$27,608.
- Jacquemin SJ. 2020. Lake Campus Research Symposium Implementation and Logistics. Western Ohio Educational Foundation - \$1,000.
- Jaqueth A, Jacquemin SJ. 2020. Floating Wetlands – A Novel Approach to Habitat Restoration and Water Quality Improvements. Lake Campus Research Initiative - \$950.
- Jaqueth A. 2020. Cultivating Experiential Learning in Agriculture. Students First Fund - \$4,000.
- Marshall MM. 2020. Determination of Agricultural Manure-Related Inorganic Phosphorus Sources in Watershed Draining into Grand Lake St. Marys. Lake Campus Research Initiative - \$1,250.
- McCarthy M, Newell S, Jacquemin SJ. 2020. Rapid Mobilization to Establish Baseline Conditions and Assess Post-Treatment Effects of an Imminent Alum Application – Ohio Sea Grant - \$10,000.

# Lake Campus Research Symposium - 2021

## Event Program



***2021 Symposium is online as part of efforts to mitigate the spread of COVID-19. Please visit the Lake Campus Research Webpage at <https://lake.wright.edu/research> to attend virtually.***

## Research Symposium Overview

The Lake Campus Research Committee is pleased to present the sixth annual Lake Campus Research Symposium. The 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 Lake Campus Research Initiative. Presentations in the symposium demonstrate faculty and student commitment to pedagogy and their respective disciplines as they advance classrooms, study areas, and community. Congratulations to Lake faculty and students for their success and much encouragement for the future.

## 2021 Symposium Presentation Abstracts

- Baker B, Froning D, Hiestand B, Kuehl D, Martin L. 2021. Design and Implementation of a Remote Sensing Autonomous Aerial Drone.

*The remote aerial drone is a project that will benefit the St. Mary's and other lake communities by detecting algae bloom levels in real time and allowing officials to deem whether the lake is viable for people to interact with the water. This will also give a jumpstart for the water quality monitors to know when, and where, they need to focus their efforts in maintaining the levels of algae. This project will allow us as students to learn how to work better as a team and how by integrating different technologies into one working device, in order to output something to benefit our community. By generating 3D maps with photogrammetry and spectrometry, we will be able to show certain problem areas and be able to decide what actions need done in those areas in order to combat harmful algae.*

- Bergman A, Stammen C, Kramer J, Heitkamp J, Kemmann J, Kuether M, Kemper R, Heitkamp K. 2021. Serial Grinding and 3-D Imaging.

*Wright State's lab currently has 80 complete sediment cores collected from all over the continental United States throughout the Devonian and the Pleistocene time periods. These sediment cores contain fossilized vertebrae and other information pertaining to bone bed formations. Using a serial grinding and imaging system, we can create a virtual 3-D model of the sediment core that can provide data into the depositional records. To obtain these, we must grind off the face of the rock in thin sections subsequently taking pictures in order to stack the images onto one another. The final product will be a full 3-D view of what remains are inside of the rock sample. The system will be fully automated, using linear actuators to transport the core back and forth from the grinder*

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*to the camera, a programmable pump to lubricate the grinding disk, a raspberry pi camera to record the images, and a free image stacking software to obtain the 3-D model.*

- **Bettinger M. 2021. The Pandemic and Courses at WSU-Lake: What Was the Effect from a Student Perspective?**

*The goal of this study was to assess the actual and perceived effectiveness of online teaching versus face-to-face teaching by surveying WSU-Lake Campus students both at the onset of the coronavirus pandemic in March 2020 and at the conclusion of their tumultuous semester. This poster shows that when courses moved abruptly to online delivery in late March 2020, students perceived a significant drop in the quality of their courses - regardless of the course prefix, level, or instructor. They also noted a number of benefits and drawbacks of online course delivery that were similar to their initial expectations at the beginning of the pandemic.*

- **Bettinger J, Brookhart B, Hemmelgarn S, Neumeier K, Stephens B. 2021. Autonomous Aerial Remote-Sensing Drone.**

*In the summer of 2009, Grand Lake St. Mary's experienced its first struggle with the harmful algae bloom Cyanobacteria, also known as Blue Green Algae. These blooms are caused by a combination of an enrichment of phosphorous and nitrogen due to farm runoff into the lake and the slow-moving water created by channels and seawall around the lake. They have caused illnesses to both animals and lake-goers alike, which has had a catastrophic effect on tourism on the lake. Unfortunately, this isn't an isolated problem, as these harmful algae blooms, or HABs, have affected many freshwater lakes in the Great Lake region, as well as the country. Detecting blooms early has been a monumental task. With recent advancements in technology, specifically in UAVs, unmanned aerial vehicles, collecting visual data from remote locations has become increasingly popular. By using a UAV along with a hyperspectral camera and photogrammetry software, the cost and ease of isolating these blooms early becomes much more manageable, instead of the costly use of satellites or the laborious task of physically obtaining water samples. To complete this task our capstone group has researched, designed, and constructed an autonomous aerial remote sensing drone, to prevent the spread of harmful algal blooms in Grand Lake Saint Mary's. Our group has performed extensive research on both harmful algal blooms, drone components, and software's needed for analyzing and controlling the drone. Once researched, we put together a comprehensive list of the components that we would need to construct the drone. Once we received all the components, we began building and wiring the drone, along with familiarizing ourselves with WebODM, a photogrammetry software, and Mission Planner, a flight planning software. Our goal is to have the drone built and tested by the first week of April.*

- **Brackman H. 2021. Implications of Aging Out of Foster Care.**

*Aging out of the foster care system is something that happens to nearly 20,000 young adults between the ages of 18 and 21 every year. The proposed study will be conducted to examine the difficulties that these young adults face with finding steady employment, housing, and healthy relationships. Previous research has shown a higher rate in difficulty obtaining these than peers who were reunited with their families or adopted out of the foster care system. The study will include 50 young adults between the ages of 18-26 who have been a part of*

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*the foster care system will be interviewed to ask questions such as their employment status, longevity in the workplace, what their current living situation is, any experiences with abuse in relationships, etc. We expect to find that the young adults who aged out of foster care will report higher levels of unemployment, homelessness, and abusive relationships than their counterparts.*

- Cavanaugh J, Jacquemin SJ, Junker CR. 2021. Variation in Student Perceptions of Higher Education Course Quality and Difficulty as a Result of the Widespread Implementation of Online Education During the COVID-19 Pandemic.

*The onset of the COVID-19 global pandemic affected higher education in a myriad of ways. One of the most notable effects however was the rapid and sudden transition of nearly all courses to an online environment. And while there are a growing number of courses offered online already, this transition to nearly 100% remote education presented numerous challenges for instructors and students of face-to-face and hybrid style courses. This study utilized widely available course evaluations from RateMyProfessor.com to examine changes in student perceptions of course quality as well as difficulty as a result of this transition to remote learning. Using a general linear model of 837 course evaluations from 191 different schools an overall decline of 6% in perceived course difficulty and 4% decline in perceived quality was identified. In addition to calculating this mean decrease, courses were also categorized on the basis of academic discipline (Business, Engineering and Mathematics, Humanities, Natural Sciences, Social Sciences), institution size (2-Year, 4-Year), and whether instructors had previous experience teaching online courses (No, Yes) to determine any variation in differences that may have appeared as a result of more nuanced details in course type or delivery. Most notably, declines in course difficulty were even more apparent with instructors that had no previous online experience. No other discipline, institution size, or teaching experience interactions were detected with either difficulty or quality variation. These data suggest that there were very real changes in perceived quality and difficulty but that these changes were largely universal irrespective of discipline, institution size, or prior experience teaching online (with exception of course difficulty).*

- Daniel DT. 2021. Paracelsus on Natural and Supernatural Sentient Beings, including Nymphs, Gnomes, Pygmies, Ghosts, Angels, and Demons.

*Theophrastus Bombast von Hohenheim, or Paracelsus (1493/94-1541), differentiated the ontologies of humans, ghosts, angels and demons, and such “elemental spirits” as nymphs and gnomes in a manner that provides a unique perspective into his innovative natural philosophy and its Biblical basis. Some of these sentient beings—e.g., the “elementals”—he considered to be part of the natural world and thus subjects of “natural philosophy.” He also wrote about a “celestial realm,” and considered the beings within this arena to be subjects of “adept philosophy.” I perceive the topic of ghosts and their detection to be a particularly interesting and well-addressed theme in Paracelsus’ writings. As he explains in such writings as his magnum opus, the *Astronomia Magna* (1537/38), ghosts are simply the sidereal bodies of humans that have not yet returned to their source, i.e. the stars. There are indeed a number of these “natural” sidereal entities that one encounters in the natural world, and these differ from what he sees as “celestial” or supernatural beings--I will explicate a number of these. What*



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*is the difference in composition of “natural” and “supernatural” beings, and how are the “sidereal” and “celestial” sensed and accessed differently?*

- Devin S, Lindsey B, Elizabeth S, Olivia W. 2021. United States Military Families and Healthcare.

*The United States Military has been around since 1775 and has continued to develop (History). With the development of the military came the development of military families. Individuals in the military face ever changing challenges in their career and many of these challenges have a large effect on their families. Being a military family can have many positive and negative effects that will be examined further. This presentation will explore the history, education, lifespan, and stressors that military families face; along with looking at health care disparities and policies that impact military families' way of living. Additionally, a large focus will be spent looking at how PTSD affects military families and the increasing rates of suicide in military officials.*

- Elshoff A, Luthman B, Vann A, Brewster P. 2021. Native American Culture and Healthcare.

*Healthcare is more than just treating a disease. The nursing role provides the opportunity to treat a patient by means of their disease processes while assisting and considering the patient's emotional wellbeing simultaneously. In addition, health and healthcare are interwoven with one's culture or ethnicity. Native Americans are a diverse group of people that have a variety of cultures from different tribes across the nation. In this presentation, cultural considerations will be explored when working with a Native American patient, including ways in which the Native American culture influences their health care. This presentation will cover background of the culture including: fertility, socialization, education, gender, lifespan considerations, spirituality and religion, diet, rites and rituals, stressors, ethnopharmacological considerations, as well as health care disparities and issues in healthcare facing Native Americans now.*

- Ely T. 2021. A Shackled Death.

*A Shackled Death will be a case study aimed to shed light on end-of-life care for prisoners within the United States. The prison system is geared to be a form of punishment for criminals and many do not think about the older chronically and terminally ill inmates. Diving into the world of a prisoner requiring palliative care, participants will be asked about trust and relationships with medical personnel inside the prison, feelings about the care provided (if any), and defining a 'good death'. Quality end-of-life care should be accessible for some inmates. Forty older inmates requiring palliative care will be interviewed during their last year of life. The goal of this study is to provide greater insight into dying in prison and allow for growth toward bettering end-of-life care behind bars. This study is expected to provide prisoners a safe space and catalyze improved end-of-life care for all, including inmates.*



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- Ewing C. 2021. The Negative Cognitive Effects of Parental Incarceration on Children.

*The proposed study aims to identify if children with incarcerated parents have negatively associated academic cognitive development. By providing online tests to students of the Columbus, Ohio public school system in grades three through eight that are based on the appropriate Ohio Achievement Test for each respective grade, each child's academic cognition will be assessed. This will be compared to whether the child has an incarcerated parent or not, which will be asked at the end of the assessment to avoid the question itself having an effect on academic performance. The children's scores will then be separated into control and experimental groups, non-incarcerated and incarcerated parent, respectively. The test scores will be compared to the parental incarceration status. It is expected that the children belonging to the incarcerated parent group will have statistically significant lower test scores, thus indicating a correlation between parental incarceration and negatively associated academic cognitive development.*

- Fortman K. 2021. Commonality of Using Mindfulness and Meditation to Treat Anxiety and Depression.

*The proposed study will examine the commonality of using mindfulness meditation practices as a treatment for anxiety and depression. While these practices are becoming more popular, especially in the younger population, they are still not as commonly used as a treatment option when compared to therapy and medication. The proposed survey will be distributed to subjects who self-report anxiety and/or depression. Fifty individuals ages 18 and over will be given a survey through Qualtrics. The survey will include questions asking whether subjects use mindfulness practices, whether these practices decrease their levels of anxiety or depression, and what other treatments they use. It is expected that patients ages 18-29 will have a higher usage of mindfulness meditation than patients ages 30 and over. It is also expected that mindfulness practices will be used less overall when compared to other treatment types.*

- Fuelling L, Jacquemin SJ, Stringer G, Smith A, Ciampaglio C. 2021. On the Importance of Fossil and Archaeological Occurrence Data for Understanding the Evolution and Distribution of the Freshwater Drum (*Aplodinotus grunniens*) in North America.

*The Freshwater Drum (*Aplodinotus grunniens*) represents one of the most unique freshwater fish in North America given its niche and occupancy of one of the largest modern geographic ranges of any freshwater fish. Understanding the evolutionary history of any taxon is challenging however as the paleontological and archaeological published record is notoriously poor for the majority of North American freshwater fish. Moreover, as these records are developed through museum holdings or faunal descriptions few studies assemble these records into a useable review format for better understanding the divergence and biogeography of extant taxa. Therefore, the objective of this study was to concatenate the entire fossil history of the genus *Aplodinotus* in one work to better understand the evolutionary history of the genus and how it may have led to the last surviving *Aplodinotus*. Through a series of literature reviews, herein we document 50 paleontological and archaeological sites containing *A. grunniens* remains dating from Holocene to early Miocene as well as 11 paleontological sites containing remains from 6 other extinct members of the *Aplodinotus* genus. Based on these depositional dates and geographic localities, we support the hypothesis that *A. grunniens* has an origin in the*

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*Gulf of Mexico but it is not yet clear whether it evolved from one of the brackish/marine ancestors already known or a transitional taxa yet to be discovered.*

- Gaerke B, Sinning M, Mercer G, Speelman A. 2021. African American Culture and Healthcare.

*African Americans make up around 13% of the US population, which is close to 42 million individuals. Unique cultural considerations must be taken into account when interviewing and caring for African American patients. This presentation will cover cultural background information and highlight possible cultural considerations to explore with patients including: nutrition, religion, health care choices such as organ donation, home remedies, spiritual healing and risks for chronic diseases. Significant historical and current events of slavery and the Black Lives Matter movement will be highlighted as these are important cultural movements with education opportunities for all.*

- Gilbert W. 2021. The Effects of Being Raised in a Same-Sex Household.

*A topic that has been in the political spotlight for years now includes same-sex rights. While the supreme court ruled that it was illegal for a state to restrict marriage rights for homosexual couples in 2015, same-sex individuals still face discrimination within our society. This includes being looked down upon as parents. This research proposal is aimed at examining the influence of being raised in a same-sex household compared to a heterosexual household. Using a survey, the participants will be asked to answer questions about their lifestyles and how their parents raised them. Questions will consist of their parent's sexual orientation and how the participant feels this has influence them. Given the information from these surveys, the researchers can then compare the surveys from the same-sex households compared to the heterosexual households. We believe the results will show that same-sex households don't have a negative impact on their children.*

- Hallock M. 2021. Resilience and the Effect that Attachment Has on Adolescents in Relation to Trauma.

*There are many roadblocks in the world and some individuals are able to leap over those easily, while some people are not. This study will distribute surveys to 200 adolescent students in the Montgomery County area. The survey will be distributed at schools, libraries and resources centers by providing a link that will electronically direct them to the survey on Survey Monkey. This survey will ask questions about past trauma, current stresses, and if they have a reliable parental figure to depend on. This survey will also assess the attachment relationship with the parental figure. It is our belief that experiencing trauma will have a negative effect on resiliency in an adolescent's life but having a secure attachment to a parental figure will aid them to overcome difficulties.*

- Jones E. 2021. Single Parenting: The Impact on Child Development.

*The purpose of this proposed study is to determine the potential ramifications of children growing up in a home with a single-parent rather than children growing up with both parents at home. A survey will be distributed to parents of a locally owned daycare covering the basis of their parenting status, their upbringing, and the*

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*challenges they face due to their particular situation. Data will be collected through a series of demographic questions, rating scales, Likert scales, and open-ended questions. It is predicted that there will be a consensus among participants that raising a child in a single-parent household proves to be more challenging to raise than a child growing up in a house with both parents. After the survey has been completed, the findings will be used to determine if, indeed, being raised by a single parent causes it to be more arduous when raising a child in a single-parent home.*

- Kahlig L, Siefring T, Homan C. 2021. Amish Culture and Healthcare.

*In the United States, the highest percentage of the Amish culture is located in Ohio, therefore healthcare workers need to understand the basic cultural background of the Amish. This project will include information on the elements of the Amish culture and how healthcare workers can provide competent care for their culture. The purpose of this study is to learn more about the areas of the Amish culture and how they relate to the healthcare field. This presentation will discuss religion, the utilization of healthcare services, folk remedies, herbal supplements and the strong family background and work ethic within this culture.*

- Kitzmiller A, Heitkamp A, Staugler C, Brunswick D, Knapschaefer J. 2021. Grand Lake St Marys Water Quality Monitoring Platform.

*Grand Lake St. Mary's is continually struggling with the ever-growing problem of harmful algae blooms in its waters. Algae blooms can release harmful toxins. The contaminated water can cause serious health implications. This can occur not only during recreational activities, but also through ingestion by the residents of Celina OH, whose primary water supply is the lake. A way to help solve the problem of harmful algal blooms is by monitoring bodies of water for any possible blooms. A possible harmful bloom cannot be identified by sight alone, therefore additional testing is needed. To help understand and track the toxin levels of Grand Lake St. Mary's, the aim of this project is to find a way for a floating platform to monitor the water quality levels for extended periods of time and transmit the data back to Wright State University Lake Campus. For this to be successful, the platform needs to be durable enough to withstand the elements, and it must accurately measure and transmit the water quality levels.*

- Lup D, Ross A, Barnes M. 2021. Asian-American Culture and Healthcare.

*The Asian-American population is one of the nation's fastest growing minority groups. There are about 22 million Asian-Americans living in the United States. They account for 5.4% of the nation's population and have mainly a bicoastal distribution. Asian-Americans often face many challenges and obstacles in establishing cultural identity, especially a second-generation immigrant who may struggle to balance their traditional cultural ideas with the pressure of absorbing into American cultural society. Moreover, regardless of family generation, Asian-Americans may struggle with self-image issues. This can be due to their outwardly appearance perceived as "the other" by the dominant culture. However, specific issues depend on the individual ethnic groups. For example, a Vietnamese- American may be more at risk for certain conditions than a Japanese-American. Due to the heterogeneous nature of this population, it is crucial for healthcare providers to understand the complexities of the Asian-American culture. This will allow healthcare providers to adapt their nursing interventions*

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*accordingly. As a result, the healthcare providers will then be able to provide holistic, culturally competent care. This presentation will focus on Asian-American history, cultural values, fertility, gender roles, religion, aging and death, nutrition practices, and family stressors.*

- Marshall M, McCluney KE. 2021. Caffeine on Stream Food Webs Via Chemical Diffusing Substrata.

*Caffeine is a chemical commonly found in streams in trace concentrations and has been suggested as an indicator of the presence of human waste. The effects of caffeine on microbial stream biofilm and on invertebrates have been investigated in laboratory settings but few manipulative studies have been done to investigate these effects and their interactions in the field. Using chemical diffusing substrata (CDS), we added nonlethal concentrations of caffeine to streams. Using a randomized block design, we paired control CDS (without caffeine) and caffeine CDS units at three different locations, within three different sub-watersheds in Northwest Ohio. The result was nine pairs of control and caffeine-infused CDS units left in each location for 14+/-1 days. Just downstream of each CDS, we placed tiles for biofilm growth, used a kicknet to collect benthic macroinvertebrates, and used emergence traps to capture emergent insects leaving the stream. We used chlorophyll a measurements and biofilm stoichiometry as metrics of shifts in microbial community composition and nutritional value. We hypothesized that caffeine would decrease photosynthetic components of stream biofilm and increase N:P, thus impacting benthic grazers indirectly, but also direct effects of caffeine on benthic macroinvertebrates. Overall, we found that P content of stream biofilms, benthic biomass, and emergent insect biomass were significantly decreased following exposure to caffeine. Caffeine significantly increased N:P in the biofilm but only when including chlorophyll a concentrations as a fixed variable in the linear mixed effects model, as the two metrics were highly correlated. Also, the effects on stream biofilm appear to be stronger at locations with relatively low canopy cover. We are speculating that biofilm growing under low canopy cover conditions consist of a more highly photosynthetic community and that these microbes may be more susceptible to the effects of caffeine. Existing literature does show instances of certain eukaryotes processing caffeine similarly to nutrients and one possible explanation of our results may be eukaryotic components of stream biofilm using caffeine as a source of nitrogen. Further, biomass measurements of both benthic and emergent insect samples decreased significantly with exposure to caffeine. Structural equation modeling indicated benthic biomass as a strong predictor of emergent biomass and that indirect effects of caffeine on benthic macroinvertebrates were not as impactful as direct effects. This produces further questions on the mechanisms behind the effects of caffeine on invertebrates and their specific responses.*

- Michael H. 2021. Mental Health Risks in Early Care and Education Workers.

*The proposed study will examine the mental health of early care and education providers. This should be an area of concern because the job performance of these workers has a direct impact on the children in their care. Researchers will contact the directors of several childcare facilities and if they agree to participate, online surveys will be emailed to the employees of these centers. The survey will measure mental health through perceived job related stress, depression, and burnout. The results of the study will be compared to the US national averages of job related depression, stress, and burnout. It is expected that results of the study will show early care and education providers have a greater risk of mental health concerns than the average worker. The results of this*

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*study will be used to promote the importance of mental health support for the employees of early care and education centers.*

- Mock M, Stetler S, Grant P, Fisher B. 2021. Hispanic and Latino Culture and Healthcare. *Hispanic and Latino Americans are people who originated from Spanish and Latin decent. In the United States, Hispanic/Latino Americans make up the largest minority group. There are several cultural considerations that may have health related outcomes such a diet and language barriers. This presentation will examine cultural factors including gender roles, common illnesses, religion, aging and death within the Hispanic and Latino culture. In addition, history, language and family structure play a large role in cultural identify and background information will be provided. This presentation is relevant as it is important for healthcare workers to be familiar with general, categorical knowledge as a baseline for care while exploring cultural care preferences with individual patients.*

- Morden M, Ewing C, Strang B, Doll JC, Jacquemin SJ. 2021. Importance and Challenges of Monitoring Harmful Algal Blooms in Grand Lake St Marys.

*Harmful algal blooms as a result of excessive nutrient runoff have rapidly become a major focus on water quality around the Midwest as the number of people, economies, and ecosystems affected has risen. However, monitoring HAB activity is challenging because of the myriad of factors which can affect bloom formation, toxicity, and extent. Thus, there is a need for increased study of methodologies that can accurately and rapidly characterize HAB proliferation and effects. The objectives of this preliminary study were to characterize cyanobacteria activity over time in a hypereutrophic system (Grand Lake St Marys, OH) by observing algal cell populations (density and species), pigment activity (phycocyanin), and toxin production (total microcystin) to determine the relationships between these parameters to better understand bloom timing and relationships among these factors. Simple correlation analysis of weekly toxin samples, phycocyanin pigment, and cell density taken over the course of a year revealed close relationships between all three of these parameters ( $r > 0.70$  and  $p < 0.001$  for all 3 comparisons). Future research should expand on the simple relationships documented herein and incorporate additional abiotic criteria into a functional model that could help better predict and determine HAB activity in aquatic ecosystems across the region.*

- Mosley R. 2021. Prioritizing Mental Health for Police Officers.

*Police officers are a big contributor to the communities all over America. Due to the recent spotlight that has been put on police officers and how they do their jobs, it would be beneficial to see if there is a way for police officers to be better at their jobs. The proposed study will examine the impact that mental health has on the performance of police officers on a daily basis. For this study, 50 police officers will be given a link to a survey that will ask them questions on emotional exhaustion, occupational stress, trauma levels, and job performance. We expect to find that higher levels of emotional exhaustion, occupational stress, and trauma levels correlate with a lower job performance. If this study finds that mental health significantly impacts job performance, then it might lead to mental health being incorporated more into the lives of police officers.*

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- Mueller K, Walter S. 2021. Does the Use of Pressure Reducing Devices Versus Other Nursing Interventions Reduce the Occurrence of Pressure Ulcers Among Immobile Populations?

*The PICOT question our group chose to research was: "In the immobile population, does the use of pressure reducing devices versus other nursing interventions reduce the occurrence of pressure ulcers?" Immobility in patients increases their risk for pressure ulcers, along with multiple other health concerns. Due to this concern, there have been many interventions that have been implemented in patient care to decrease the incidence of pressure ulcers. There is a multitude of evidence suggestive of different interventions that can be done other than the standard repositioning every two hours including pads, creams, gels, etc. This allows healthcare workers to explore different modes of care that could lessen their facility's incidence of pressure ulcers.*

- Paul B, Bishop M, Cisco S. 2021. Jewish American Culture and Healthcare.

*This presentation is an overview of the Jewish American culture and how religion, family stressors, nutrition, cultural values and beliefs, cultural history, and family risks affect nursing care. Each of these topics is essential in understanding Jewish Americans, and how wellness and healthcare is affected in this culture. Regardless of culture, everyone has an equal right in receiving the healthcare that they need. "Appropriate communication and understanding intolerance are essential for creating a relationship with the patient through which it will be possible to achieve the desired therapeutic effect and improve the quality of life for patients" (Kostka, 2017). To guarantee that the patient receives the best care from the healthcare provider, the provider should be aware of these topics to respect those in the Jewish American culture.*

- Pierron S, Pohlman C, Kramer H. 2021. How Does the Use of Non-Pharmacological Pain Interventions Compare to Pharmacological Interventions in Reducing Pain?

*The PICOT question our group used to research was: "In the geriatric population, how does the use of non-pharmacological pain interventions compare to pharmacological interventions in reducing pain?" While people believe pain is a normal part of aging, it is not. However, pain is common in older adults. For effective treatment, it is important to do a pain assessment to figure out the best strategy for the patient. There may be challenges such as underreported pain or pharmacodynamic changes to drugs. It is important to work with the patient and the patient's care team to determine these challenges. Research has shown that a combination of non-pharmacological and pharmacological treatments are effective when treating pain in older adults.*

- Rammel T. 2021. What Are Parent's Opinions on the Subject of School Lunches?

*Food is essential for all individuals, especially children due to their continuing growth, therefore, we believe more focus needs to be put into school lunches. The proposed study will be used to determine how parents feel regarding the meals their children consume while attending school. This exploratory study will provide 50 parent's opinions regarding their children's lunches to provide information for future possible studies. The expected outcome is to have parents report issues regarding the food items their children consume. The expected issues include taste, quality, and price. A future possible study regarding the nutritional values within the school system can be designed.*



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- Richard A, Hoyng P, Perkins L. 2021. What is the Effect of Delayed Cord Clamping in Comparison to Early Cord Clamping on Newborn's Overall Health?

*The PICOT question our group used to research was: "In newborns, what is the effect of delayed cord clamping, in comparison to early cord clamping on newborn's overall health?" Delayed cord clamping has many benefits on a newborn's overall health such as increasing hemoglobin levels along with other hemodynamics. It also decreases the number of intraventricular hemorrhage cases. This is an important problem because delayed cord clamping is becoming more common, especially with preemies. Research has shown that delayed cord clamping has more benefits than downfalls on a newborn's overall health. Weighing the risks vs. benefits of whether delayed cord clamping would be beneficial for the mother and newborn is important and also controversial in the healthcare profession.*

- Schneider B, Gaier J, Homan K. 2021. What is the Effect of Oral Contraceptives in Comparison to Contraceptive Implants on the Effectiveness of Preventing Pregnancy?

*The PICOT question our group used to research was: "In child-bearing women seen in an OB GYN clinic, what is the effect of oral contraceptives in comparison to contraceptive implants on the effectiveness of preventing pregnancy?" New and improved forms of birth control are continually being manufactured, leaving women with multiple options when selecting a birth control that best fits them. This can cause confusion with the lack of education on each form. Oral contraceptives are effective in preventing pregnancy if they are taken consistently on an accurate schedule. If a woman cannot do this, a long-term contraceptive such as an implanted contraceptive may be more desirable.*

- Siefring M, Keller K, Schmitz L. 2021. Does Skin-To-Skin Contact in Comparison to Newborn Parental Separation After Birth Reduce Stress Related Complications Prior to Discharge Home in Newborns?

*The PICOT question our group used to research was: "In the newborn, does skin-to-skin contact in comparison to newborn parental separation after birth, reduce stress related complications prior to discharge home?" For numerous years, mother-newborn separation after birth has been a controversial topic. Within several hospitals, separation of both the newborn and mother postpartum is standard practice. Separation may be needed for the procedures including physical assessment, medication administration, bathing, and observation in the nursery. Research has shown that newborns who are in the same room or who experience skin-to-skin contact were most likely to establish an increased sleep state. However, separation from the caregivers could potentially cause stress or traumatic emotions on the infant. Implementing such practices in an ever changing healthcare environment proves to be beneficial and necessary to provide the most optimal care for patients and their families.*



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- Sinning C, Riethman N, Sheeter A. 2021. What is the Effect of Having an Active Lifestyle Compared to a Sedentary Lifestyle on Mental Health Among Adults Ages 20-40?

*The PICOT question our group used to research was: "In adult ages 20-40, what is the effect of having an active lifestyle compared to a sedentary lifestyle on mental health?" Mental health disorders are becoming one of the most common illnesses among adults. Studies have shown that physical activity can help improve mood and quality of life, however, most adults with mental health disorders are found to be more sedentary compared to the normal population due to the decreased mood and self-esteem. This is the reason this question is so important. Increasing activity could potentially decrease the incidence of mental health disorders among adults. One of the most effective ways to increase mood and quality of life is by lifestyle modification. One of the most important lifestyle factors is physical activity, which is why we believe this could be essential in mental health treatment.*

- Slater B. 2021. Academic Performance in Children Adopted from Foster Care.

*Many factors can influence a child's academic performance, including the type of care that they receive from their guardians. The proposed study will follow adopted and foster children through a time in their lives where their guardian's guidance is an important aspect of their cognitive development. Thirty children adopted from foster care and 30 children who remain in the foster care system will be followed for 5 years, starting at age 8. These children's academic performance will be collected through school records and IQ testing, as well as interviews with teachers regarding academic performance. The goal is to study how their academics progress overtime, given their familial situation. There is an expectation that the adopted children will perform better academically at every check point as well as the cumulative abilities at the end of the study.*

- Starr K. 2021. The Devastating Effects of the Stigma that Surrounds Mental Illness.

*The objective of the proposed study is to evaluate the stigma surrounding mental health disorders and how stigma negatively impacts a person's livelihood. Participants would be 100 undergraduate business students from a large urban university. Participants would attend a mock leadership seminar designed to give them a positive, negative, or neutral view of mental illness. After the seminar, for each job applicant participants will read a comprehensive packet of information which includes the applicants resume, answers to interview questions, and a list of pertinent health information, and the resumes would be designed for a specific job. Participants would rank which applicants they would be most likely and least likely to hire. The results are projected to indicate that exposure to negative views of mental health illnesses will make a person less likely to hire a person with a mental health disorders.*

- Stump M. 2021. The Quality of Life in Elderly Living in a Nursing home vs Living at Home.

*Quality of life is very important, especially in the late stages of life because it is correlated to happiness. Quality of life is hypothesized to be higher in those who live in a nursing home because they have access to care, activities, resources, therapy, and social interaction. Sixty elderly people, thirty living in a nursing home and thirty living at home, will be given a survey to ask them questions about their happiness and depression levels, the benefits*

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*and drawbacks of their living situation, and what could be done to make the situation better. Participants will be gathered by going into nursing homes and put posters in areas where the elderly are likely to be. The expected results are increased quality of life levels in those participants in the nursing home and lower levels in those who live at home, so those in the nursing home are happier.*

- Tisdale S. 2021. Good or Bad: The Impact of the Juvenile Justice System on Youth.

*Do the juvenile justice center have more of a bad impact on youth adulthood rather than a good impact? This is a question that many people may not find themselves asking. This study aimed to find out the correlation between youth involved in the juvenile system and the adulthood outcomes. 10 youth are given a 10-question survey and the answers were recorded and compared to the sources used to support the claim. The youth were tested in separate rooms. 75% of the youth answered the same answer for more than half of the survey. The results underscored the positive impact that the system had on adulthood outcomes. The behavior that an individual show in adolescents and adulthood is from learned experiences growing up. Youth who has been in the juvenile justice system encounters a hard transition to becoming an adult; causing them to encounter distressful outcomes in adulthood.*

- Topp C. 2021. Examining the Benefits of Extended Foster Care on the Development of Teens Transitioning into Adulthood.

*Extended foster care systems have been implemented in half of the U.S. states to aid teens in a healthier transition into adulthood. The proposed study aims to examine the potential benefits these extended programs produce. A quasi-experimental approach will be utilized to examine two groups of 25 participants from an urban area -- those who aged-out at eighteen and those who choose to continue in the extended foster care programs. Participants will be interviewed at age 18, 21, and 25 to gain insight on resources provided and their overall status regarding jobs, education, housing, and arrest record. Results from these three interviews will be compared between the two groups to assess the differences. It is expected that the teenagers enrolled in the extended foster care programs will be provided the necessary resources to be more successful adults compared to those who aged out of the system at age 18.*

- Topp C. 2021. Shifting the Focus of the Foster Care System from Reunification to Stability.

*At any given point, there are an estimated 400,000 children in the United States' foster care system. These children are placed in the system for reasons including parental neglect, abuse, and/or unsafe living conditions. No matter the circumstance or reasoning surrounding removal, often the primary goal of the child welfare system is to create a situation in which children are once again reunited with their biological families. Although this goal is seemingly transparent and morally correct, additional factors need to be taken into consideration before deciding if this goal should be the end-all, be-all of the system. This paper proposes that maintaining stability in a child's environment should be the most prominent goal of the child welfare system rather than reunification. Research into factors such as attachment styles, social support levels, and the effects of constant*

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*reentry into the foster care system will be reviewed to support the notion that increasing stability in a foster child's life will aid them in a healthier development.*

- Wang W, Attariani H. 2021. High-k Dielectric Materials for Ultra-Wide Band Gap Transistor.

*The search for high-k dielectric material suitable for Ga2O3 transistors was the focus in this fellowship. High-k dielectric materials with larger band gaps than Ga2O3 were investigated. Thin films were prepared by pulsed laser deposition (PLD) and atomic layer deposition (ALD). Selected high-k materials are MgO, HfO2 and Y2O3. Among these, MgO and HfO2 can be deposited by both techniques. Y2O3 can only be prepared by PLD. Difficulties were encountered during thin film growth of MgO due to depleted precursor for ALD and poor target quality for PLD. Preliminary results for HfO2 and Y2O3 from PLD have shown encouraging signs of potential. C-V measurements were conducted to extract effective dielectric constant of the thin films through metal-insulator-metal test structures. Future research on those materials needs to cover material composition, in-depth C-V measurement, surface roughness, etc. in order to find suitable dielectric materials for Ga2O3 applications.*

- Westerbeck H. 2021. Are Woman's Opinions on Plastic Surgery Influenced by Age?

*The study focus is to gather opinions about plastic surgery procedures as women age. The study is important to predict increases in plastic surgery acceptance. The participants include 50 women's opinion regarding plastic surgery procedures including their generational information. The participants include 25 women under the age of 40 and 25 women over the age of 40. The survey is designed to examine the women's acceptance of plastic surgery procedures. The study includes a survey of approximately 5-10 questions regarding women's acceptance of plastic surgery as well as their age. Participants will access the survey at a local gym. There will be a \$20 raffle for the participants. It's expected women under the age of 40 will be more accepting to the idea of procedures. It's predicted that women over the age will be more reserved about the idea procedures.*

- Wilson DH. 2021. Jackanape and the Fingermen.

*Audiences were outraged by D. Harlan Wilson's first play, The Dark Hypotenuse, when it opened in Copenhagen in 2012. Not only did it bear the weird, estranging aesthetic that distinguishes his novels and short fiction, the play contained scenes in which viewers were attacked by actors as well as a variety of endangered animals, among them an African elephant that was euthanized onstage. The Dark Hypothenuse appeared in Wilson's first collection of dramatic entertainments. This second collection includes his latest work in the field. In Jackanape, a murderous dinner jacket wreaks havoc on a community of narcissists who struggle to stay alive while enduring the rigors of the School of Life. The Fingermen portrays a support group whose members have each lost an index finger; their stories reveal their insecurities and anxieties as much as the nonsense that typifies contemporary existence. In both cases, Wilson satirizes with a hammer, oscillating between hilarity and solemnity as he invites us to think about the relationship between self-delusion and (in)sanity.*

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- Williams C, Heinrichs E, Recker M, Bowen A. 2021. Are Patients Who Have Mental Illness at Increased Risk for Readmittance to Hospital Compared to Those Without Mental Illness?

*The PICOT question our group used to research was: "Are patients who have mental illnesses compared to those without mental illness at increased risk for readmittance to the hospital?" Hospital readmission is an issue that all hospitals and other inpatient facilities are familiar with. Readmission is not a desired outcome after discharge from a facility, but it is a necessary step on reaching optimal health if problems arise after initial discharge. There are a variety of reasons as to why hospital readmission occurs, however, research has shown that many mental illnesses, especially those that extremely alter the mental status of the patient, increase the risk readmittance. Hospital readmittance is a financial threat to both patients and hospital facilities. As hospital readmission continues to become a concern, it is important for facilities to recognize risk factors, such as mental illness, and continually work towards prevention.*

- Wilt A. 2021. Measuring the Effectiveness of Implicit Bias Education on 5<sup>th</sup> Graders.

*Will implementing education about implicit bias for 5th grade students show significant positive effects on students? To measure the effectiveness of implicit bias education on 5th grade students, a quasi-experimental design will be conducted. Participants will include 2 groups of 5th graders. One group from an urban school and one group from a rural school. This will allow for measures of diversity in race, ethnicity, culture, and SES. Groups will be split so half the students will be taught the new subject matter during fall semester and half during spring semester. An Implicit Association Test will be given as a pre-test to students where implicit biases are measured. Education of stereotypes, prejudice, and discrimination will be added to the school's curriculum. Upon completion of a semester, students will be given the same Implicit Association Test. I predict that post-test implicit bias scores will be lower than pre-test scores indicating biases to be less.*

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