

*Wittenberg Honors*  
**Undergraduate Research Symposium**

**SCHEDULE & PROGRAM**



**Wittenberg University  
Shouplin Center  
Friday, April 12, 2024**



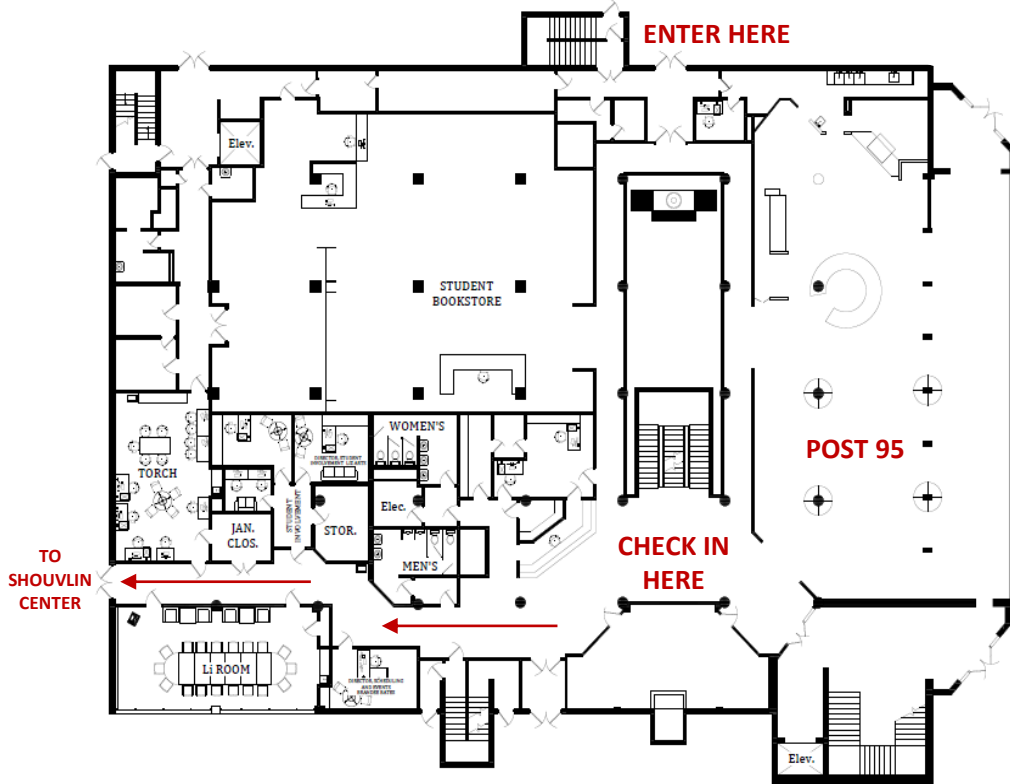
## General Schedule:

- 11:00 a.m.–12:00 p.m. Check-In @ Benham Pence Student Center**  
Check-In Desk
- 11:15 a.m. – 12:00 p.m. Lunch @ Benham Pence Student Center**  
Central Dining Room/Alumni Rm
- 12:00 p.m.–12:45 p.m. Opening Remarks @ Shouplin Center 105**  
**Keynote Address @ Shouplin 105**  
**Luke Dennis**, General Manager, WYSO Radio  
President, Miami Valley Public Media
- 1:00 p.m. – 3:00 p.m. Posters @ Shouplin 1<sup>st</sup> Floor Atrium**  
**Presentations @ Shouplin 105**  
Humanities  
Social Sciences  
Languages  
Education
- 3:00 p.m.– 5:15 p.m. Posters @ Shouplin 1<sup>st</sup> Floor Atrium**  
**Presentations @ Shouplin 105**  
Life Sciences  
Physical Sciences  
Health Sciences  
Computer Sciences  
Data Sciences & Mathematics

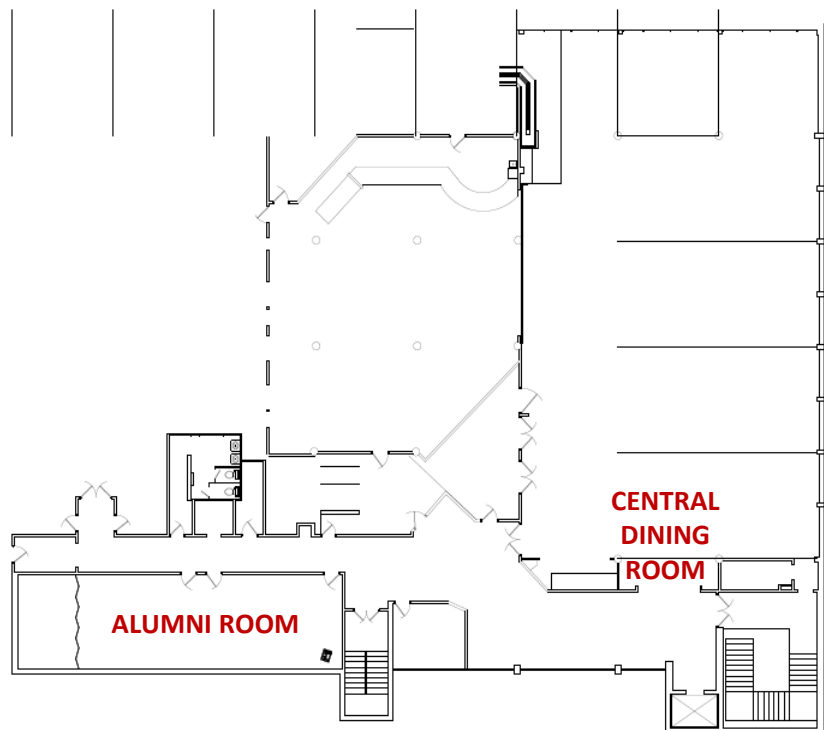
Questions? Ask Wittenberg Honors Staff or stop by the Information Desk in the Benham Pence Student Center any time throughout the day.

  
**STUDENT CENTER PARKING**

# STUDENT CENTER 1ST FLOOR

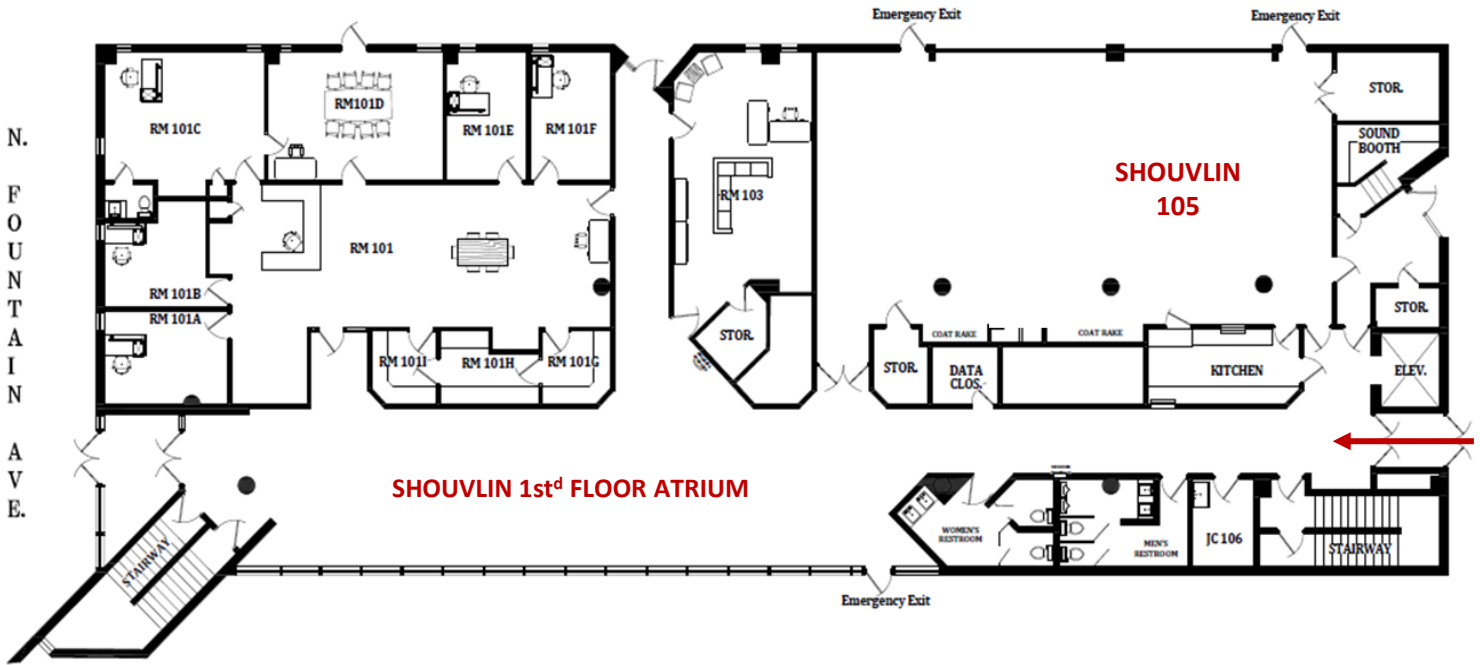


# STUDENT CENTER 2ND FLOOR



SHOUVLIN CENTER PARKING

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# SHOUVLIN CENTER 2ND FLOOR

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KEYNOTE SPEAKER  
**LUKE DENNIS**

12:00 - 12:45 - Shouplin 105



Prior to his current positions as General Manager at WYSO Public Radio and President of Miami Valley Public Media, Luke Dennis served in a variety of leadership positions in the Miami Valley and in Boston, MA including executive director of Muse Machine and curator of the Harvard Theatre Collection. He joined WYSO in 2012, first as development director and later succeeding his mentor Neenah Ellis as station manager. He's a proud graduate of Wittenberg University and also studied at Tufts University. A native of Wilmington, Ohio, Luke has lived in Yellow Springs with his family since 2006.

# SESSION 1 – POSTERS

## Shouplin 1<sup>st</sup> Floor Atrium 1:00-3:00

Presenters should be in attendance with their posters from 1:00 – 2:00pm to answer questions. Posters will remain set up until 2:45pm

TABLE 1

**Kiana Chumley – Wilmington College**

***It's Always Hungry in Cincinnati: Crime Levels in Cincinnati, Ohio in Relation to Food Deserts***

The study investigates the relationship between food deserts and crime in Cincinnati, Ohio, hypothesizing that the presence of food deserts is positively associated with various types of crime. Utilizing artifact-driven research with data from the USDA Food Access Research Atlas and LexisNexis' Community Crime Map, the study examines violent crime, nonviolent crime, and drug violations in six sampled tracts. Findings indicate no significant difference in nonviolent and violent crime rates between food desert and non-food desert conditions. However, there is a significant difference in drug and narcotic abuse offenses. The study suggests potential implications for policing and social programs to address food insecurity and its potential links to criminal behavior. Additionally, it highlights the importance of proper nutrition in childhood to prevent delinquency in adulthood. The research could inform future policy initiatives to improve food access and mitigate the negative effects of food deserts. Limitations include the small sample size and potential data limitations, impacting generalizability. Nonetheless, the study provides insights into the complex interplay between social, economic, and political factors in shaping criminal behavior and underscores the need for holistic approaches to address societal challenges.

TABLE 2

**Noah Honkomp – Wilmington College**

***An Analysis of Benefits Available through Crime Victim Compensation Programs***

Crime victim compensation (CVC) programs are designed to assist victims in recovering costs associated with victimization. These programs tend to cover costs such as medical expenses, forensic clean-up, lost wages, and funeral expenses. Each state and Washington, D.C. have a crime victim compensation program; however, little research has been done on these programs to understand their operation and policies. The purpose of this study is to explore the benefits available to victims through CVC programs. A content analysis was conducted of crime victim compensation programs' materials (n=51); this study aimed to explore the benefits available to victims. Multiple variables surrounding CVC benefits were coded, including types of expenses covered, benefits available by type of expense, and maximum benefits available per victimization. Preliminary results indicate there is variation in CVC benefits provided by programs. For example, not all CVC programs cover moving expenses or childcare related to the victimization. Subsequently, there is variation in the maximum amount of benefits available to victims per type of expense and some programs are not making this information available. Implications of the preliminary findings suggest more information and transparency are needed about benefits available to victims for them to navigate this system.

TABLE 3

**Alyssa Kensill – Wilmington College**

***Integrating Farmer’s Markets with FNS***

An overview of the current state of FNS integration in farmer’s markets, as well as benefits, challenges and solutions for future integration.

**SESSION 1 – PRESENTATIONS**

**Shouvlin 105 1:00 - 3:00pm**

**1:00- 1:15 pm**

**Liliann Williford – Wilmington College**

***A Content Analysis of State’s Crime Victim Compensation Eligibility Requirements***

Crime victim compensation (CVC) programs are available in each state to assist victims in recouping costs associated with victimization. While each state and Washington, D.C., have a crime victim compensation program, little is known about the states’ policies surrounding eligibility requirements. This study aims to learn more about the eligibility requirements of each program through the use of a content analysis (n=51) of crime victim compensation programs’ application materials, websites, and guidance documents. Variables related to eligibility, including requirements surrounding the filing of a police report, length of time since the crime occurred, cooperation with authorities, and criminal history, were all coded to assess each program’s eligibility requirements. Preliminary results indicate there is variation in the eligibility requirements across programs. More specifically, there are differences in the time requirements of reporting to police, presumptions of innocence in the crime event, involvement in co-occurring crimes, and location of the crime. Additionally, some CVC programs are not making some elements of eligibility known in their information. Implications of the preliminary findings suggest more information and transparency are needed about the eligibility requirements, to inform victims about their eligibility in the programs.

**1:20 – 1:35 pm**

**Kira van Ravensberg – Wittenberg University**

***How Concussions Impact Impulsivity and Inhibition***

This study looks at the level of impulsivity a participant experiences in relation to how many concussions they have had in the past. The participants completed a background survey, an impulsiveness scale, and an online Go/No Go task to measure their impulsivity and inhibition in relation to the number of concussions they have sustained. The study seeks to learn how the number of concussions the participant has sustained will impact how they perceive their own impulsivity, and if it will affect their performance on the online task.

**1:40 – 1:55 pm**

**Guillermo Del rio Gonzalez – Wittenberg University**

***Situationism and Evidence for Virtues***

In this project I argue that the empirical evidence situationism presents does not prove the non-existence of Virtues as assumed by Virtue Ethics.



**2:00 – 2:15 pm**

**Levi Kouns – Wilmington Collge**

***The Longbow: Mighty or Mythical***

Over six hundred years ago, two armies met on a battlefield in medieval France near the village of Agincourt in a war over the crown of the French monarchy. The English army was exhausted and low on supplies, in contrast to the French army which had been freshly raised from the surrounding countryside and had far more men. By all appearances it should have been an easy French victory, but history tells us otherwise. On the field at Agincourt the French were thoroughly routed by Henry V, who would go on to be considered one of the greatest English kings for his accomplishments during the conflict that would later be known as the Hundred Years' War. Victory could be attributed to many factors, but one that always works into the final assessment was the English use of superior ranged weaponry with their signature longbows. Indeed, the Hundred Years' War, and arguably Agincourt itself, made these weapons famous as the pinnacle of medieval engineering and ingenuity. Their massed use was, and still is, heralded as a hallmark of a turning point in medieval warfare from shock based, cavalry focused tactics to infantry formation fighting. To this day, the longbow remains a succinctly 'English' weapon. How this identity as an "English" weapon came about is a much broader story, which looks at not only the use of the longbow on the battlefield, but the ongoing change in English culture during the period known as the Hundred Years War.

**2:20 – 2:35 pm**

**Danny Bean – Wittenberg University**

***Scandal's Olivia Pope: Powerful Addict and Dislocated Fixer***

This presentation will begin with a brief discussion of the theoretical framework connecting neoliberalism and addiction before shifting to an analysis of how this framework is demonstrated through the character of Olivia Pope and her addictions to power and fixing in Shonda Rhimes's hit television series Scandal.

**2:40- 2:55 pm**

**Claire Patton – Wittenberg University**

***Understanding Gifted Adolescent Students***

The Ohio Department of Education defines gifted students as “one who performs or shows potential for performing at remarkably high levels of accomplishment when compared to others of their age, experience, or environment.” In this study, initiated as an honors contract associated with the class “Adolescent Development and Education” with Professor Erin Hill, I am specifically researching gifted adolescent students. I will explore the multi-faceted components of giftedness. While gifted students show the same aptitude for achievement, in reality, there is no “typical” gifted student. While some gifted students are high-achieving perfectionists, many are also low-achieving and burnt out. Schools struggle to support gifted students along with the high prevalence of other students with special needs. My research synthesizes my experiences with gifted students from multiple perspectives and provides action steps for how to best support gifted individuals in the future.

## SESSION 2 – POSTERS

**Shouvlin 1<sup>st</sup> Floor Atrium     3:00 - 5:00**

Presenters should be in attendance with their posters from 3:00 – 4:00pm to answer questions. Posters will remain set up until 4:45pm

**TABLE 1**

**Hailey Mulvihill – Wittenberg University**

***Examining tRNA Quality in Yeast Cells Under Osmotic and Temperature Stress Conditions***

This study explores the response of transfer RNA (tRNA) in the yeast *Saccharomyces cerevisiae* to osmotic and temperature stress. tRNA plays a crucial role in protein translation by attaching amino acids to a growing polypeptide chain at the ribosome. Extra nucleotide sequences present on the 3' end of tRNA, where amino acids attach, can interfere with the ability of the tRNA to transport amino acids to the ribosome. Thus, such aberrant tRNA is useless to the cell. Previous work has identified the presence of aberrant tRNA under standard growth conditions in yeast cells. However, there is little research into the quality of yeast tRNA under atypical growth conditions. We were interested in exploring the effect of temperature fluctuation and various NaCl concentrations on yeast tRNA quality and aberrant tRNA quantity. If yeast cultures are exposed to high salt concentrations, then aberrant tRNA amounts will increase with increasing salt concentrations. YEPD media has an optimal salinity for yeast growth. The addition of NaCl disrupts optimal growth conditions and will thus affect the processes that make functional tRNA. If yeast cultures are introduced to higher temperatures, then more aberrant tRNAs will be made as temperature increases. Yeast cells prefer 30° C to grow, so temperatures above or below this optimal growth temperature can affect processes that make functional tRNA and can affect translation.

**TABLE 2**

**Charles O'Connell – Wilmington College**

***Effect of Cannibidiol (CBD) on Anxiety in *Mus musculus****

Anxiety is the fear or preparation for upcoming negative events (Craske et al. 2011). Cannibidiol (CBD) has been shown to be an efficient method of managing anxiety. It is effective because it is known as an anxiolytic substance, which means that it blocks anxiety (Blessing et al. 2015). It has consistently been shown to reduce anxiety levels in humans, exposed to such stressors as simulated public speaking (Bergamaschi et al. 2011). The open field test has been an often-used measure of anxiety in *Mus musculus* (Valeria et al. 2002). We hypothesized that, in the open field test, it will take less time for the high CBD-dosed *M. musculus* than the low-dosed and control-dosed *M. musculus* to get the food in the open field test. We also hypothesized that the highest CBD-dosed *M. musculus* will gain more weight than the other two treatment groups.

**TABLE 3****Audrey Ishimwe Simbi – Wittenberg University*****How You See Yourself, Social Media's Impact on the College Student***

This project examines how social media use relates to self-esteem, anxiety, and depression in university students. It addresses the impact of time spent on social media sites on self-esteem levels and to what extent prolonged use contributes to anxiety and depression during university years. The research is focused on young adults attending a 4-year university in the Midwest. Participants completed an online survey using the Hospital Anxiety and Depression Scale (HADS) to assess anxiety and depression, and the Rosenberg Self-Esteem scale (RSES) to assess self-esteem. Social media use was measured by time spent on popular social media sites: Instagram, Facebook, Twitter, TikTok, Snapchat, and YouTube. The purpose of the research is to improve understanding of young adults' media interactions, especially after the COVID-19 pandemic where different types of media could have served as coping mechanisms. University students spend a significant amount of time using social media sites as sources of news and information and for social interactions; therefore, it is important to examine the effects of prolonged social media screen time on mental well-being.

**TABLE 4****Kaitlyn Pasko – University of Mt Union*****Examining the Effects of Landing Kinetics with a Sport Specific Secondary***

Basketball players jump to shoot, rebound, and contest a shot during competition. One test of performance for lower-body power for basketball players is with a countermovement jump (CMJ). Countermovement jumps are assessed by completing the movement on force plates and utilizing the force-time curve to identify six phases of the CMJ including the quiet, unweighting, braking, propulsive, flight, and landing phases (McMahon et al., 2018; Chavda et al., 2018). The purpose of this study was to determine the effects of a sport specific secondary task on the landing kinetics of countermovement jumps in NCAA division III female basketball players. Members of the Mount Union's women's basketball team (n=13) were recruited to participate. These participants completed four countermovement jumps (CMJ) from a box onto two force plates. The first two trials were a normal CMJ and the last two trials were CMJs with an added sport specific secondary task of rebounding a basketball that was held above their head. After the jumps were completed, the force plate data was analyzed and placed into a force-time curve Excel sheet for the CMJ and CMJ with the secondary task (Chavda et al., 2018). Data analysis was further completed on IBM SPSS Statistics. Fifteen dependent t-tests were run from the force-time curve data ( $\alpha=0.05$ ). Statistical significance ( $p < 0.05$ ) was found for five results between CMJ and CMJ with the secondary sport specific task from the force-time curve including RSI modified ( $p=0.020$ ), peak force ( $p=0.008$ ), relative peak force ( $p=0.005$ ), duration of concentric phase ( $p=0.009$ ), and concentric average power ( $p=0.010$ ). The CMJ with the secondary task had a higher RSI modified, peak force, relative peak force, and concentric average power and a lower duration of concentric phase. The secondary task allowed athletes to create more force faster.

TABLE 5

**Caitlin Archdeacon – Wittenberg University**

***Paleoecological contextualization of Hominin Butchery Sites Across the KBS and Okote Members***

Faunal assemblages at various localities associated with carcass processing by hominins allows for insights into the context of specific hominin behaviors. Analyzing spatial and temporal distribution of localities associated with butchery events provide insights into the environmental context of these behaviors in the Pleistocene. A locality within Area 8A, in the Koobi Fora Formation, estimated to be around 1.8-1.6 Ma has produced well preserved fossils from surface standard collections. Analysis of faunal assemblages across at 8A and various locations in the Koobi Fora Formation where evidence of hominin butchery behaviors have been recovered can be compared to sites without evidence of these behaviors. This allows for further analysis and understanding of the behavioral and palaeoecological context of hominins and the emergence of meat eating. The results of the analysis of species lists did not show a distinct paleoecological signature of localities with this evidence of butchery. However, results of a correspondence analysis suggest that the paleoenvironment of the KBS Mbr. was a relatively drier environment, similar to a modern savannah environment. Burgi Mbr. sites from the Koobi Fora Fm. are similar to the KBS Mbr. sites. Similar environments may have existed at these two time frames. We identified no discernible differences between locales with and without evidence of hominin butchery. The distinguishable split of KBS and Okote Members highlights the necessity of further research to understand paleoecological relationships and bias that are present in the fossil record.

TABLE 6

**Paige Rudolf – Wittenberg University**

***Antibacterial and Synergistic Effects of Antibiotics, Essential Oils and Essential Oil Components Against E. coli and S. epidermidis***

Antibiotics have changed the world, as they are one of the most important medical discoveries of the 20th century with the ability to kill bacterial infections, previously the leading cause of death. However, with overuse in agriculture, overprescription by doctors, and misuse by patients, public health experts have identified an increase in bacterial resistance, which is slowly leading to a return of the pre-antibiotic era. In an effort to combat this increased resistance and explore other antimicrobial avenues, this study investigates the antimicrobial and synergistic potential of antibiotics, essential oils, and essential oil components. We selected seven antibiotics (kanamycin, ampicillin, neomycin, gentamicin, tobramycin, ciprofloxacin HCl, and sulfamethoxazole), three components of essential oils (thymol, menthol, and carvacrol), and five essential oils (thyme, pink grapefruit, tea tree, oregano, and clove) and used two species of bacteria (*Escherichia coli* ATCC 25922 and *Staphylococcus epidermidis* ATCC 14990). To assess antibacterial properties, we determined the minimum inhibitory concentration (MIC) values and we analyzed synergy using the fractional inhibitory concentration (FIC) values. We observed that MIC values tended to be greater for the Gram-negative species compared to the Gram-positive species, and synergy occurred between the sulfamethoxazole-trimethoprim antibiotic combination as well as between menthol and all aminoglycoside antibiotics. It is possible that a lower concentration of the antibacterial is needed for Gram-positive organisms because they lack an outer membrane typical of Gram-negative organisms, and that the mechanisms of action of the menthol essential oil and aminoglycoside antibiotics are similar.

**TABLE 7**

**Victoria Pipinich – Wittenberg University**

***Analysis of Heavy Metals in Dark Chocolate***

Previous research performed by Consumer Reports has found certain dark chocolate bars contain high amounts of lead and cadmium.<sup>1</sup> To confirm these results, dark chocolate bars were digested and tested using atomic absorption spectroscopy. The results of the investigation showed exorbitant levels of lead and cadmium in dark chocolate bars. The levels of lead are unusually high in the dark chocolate bar samples tested. The highest concentrations for iron, lead, and cadmium were 4.17 ppm, 0.262 ppm, and 0.216 ppm respectively.

**SESSION 2 – PRESENTATIONS**

**Shouvlin 105**

**3:00-5:15**

**3:00 – 3:15 pm**

**Abby Eifrid – Walsh University**

***The Effects of a 10-minute Treadmill Walk compared to 10-minutes of High Intensity Interval Training (HIIT) on Self-reported Mood and Cognitive Function***

There are known positive physiological effects on the body from exercise, but there is little research suggesting the degree of psychological impact on relatively healthy young adults. With college-aged relatively healthy individuals understudied in this particular area, the purpose of the study is to determine which style of exercise, if any, are beneficial to college- aged students' mood, cognitive flexibility, cognitive speed and accuracy, and attention skills, measured. This project analyzed the effects a low intensity treadmill walk compared to a high intensity interval training on self-reported mood and acute cognitive function. Each participant completed the Profile of Mood States questionnaire and cognitive tests which included the Stroop test, colored squares attention test, and a timed number test before and after exercise. Each exercise was performed on two separate occasions. This study was designed to fill the gap in research between the correlation of exercise and cognitive function in college-aged healthy young adults.

**3:20 – 3:35 pm**

**Bailey Smith – Wittenberg University**

***All-Nighters: The Relationship Between Sleep and the Mental Health of University Students***

This study surveyed Wittenberg students about their sleeping habits and their mental health status. An analysis of student sleeping habits and mental health offers insight into how sleep impacts mental health, and how students and faculty can prevent sleep deprivation and mental health crisis.

3:40 – 3:55 pm

**Hannah Marcin – Wittenberg University**

***Analyzing the Gene Expression in Obsessive Compulsive Disorder (OCD) Induced Mice Under N-acetylcysteine (NAC)***

Obsessive Compulsive Disorder (OCD) is defined as a neurological disorder that causes a person to have obsessive thoughts and /or do repetitive actions. These thoughts and actions are both debilitating and time-consuming. N- acetylcysteine, or NAC, is an amino-acid supplement that inhibits the transmission of glutamate and has been shown in small studies that it may help reduce OCD symptoms, as well as other comorbid compulsive disorders. My research is a continuation of a study done in 2018 at Wittenberg by psychology professor Dr. Woehrle named NAC Blocks Serotonin 1B Agonist-Induced OCD-Related Behavior in Mice which focused on the effects of NAC treatments on OCD in mice. Over Summer 2023 I used qPCR to test six different genes to see their connection to OCD and the drug NAC. The genes I tested are HTR2A, HTR2C, DRD2, SLC1A1, PRL, and MAOA. This research will allow me to expand the knowledge and literature on OCD, as well as possible treatments for OCD.

4:00 – 4:15 pm

**Louis Gentile – Walsh University**

***Evaluation of Phenylidosyl Benzene Tosylate Dihydrate as an Antimicrobial Agent***

In a world of increasing antibiotic resistance and infectious microorganisms, the development of novel antimicrobial agents is critical. Recently, attention has been drawn to hypervalent iodine compounds for their ability to interfere with various biological pathways. Exciting advancements in diaryliodonium salt research have occurred during the last several decades. These salts have been shown to interact with the anionic lipids that are exposed on the surface of bacterial membranes and affect the stability of the cell wall. Multiple studies have shown the high antimicrobial efficacy of these salt compounds is due to their chemical structure. The positive iodine center of the diaryliodonium salts electrostatically engage with the negatively charged cell membrane of the examined microorganism and adsorb onto it, and in turn, cause the cell membrane to rupture. However, only iodine (III) salt derivatives have been examined thus far. Phenylidosyl benzene tosylate dihydrate is an iodine (V) salt derivative that may interact with the cell membrane with greater effectiveness due to its more reactive iodine center. This research analyzes the efficacy of phenylidosyl benzene tosylate dihydrate in inhibiting the growth of bacteria strains that are increasingly becoming more antibiotic resistant. Throughout this study, the efficacy of iodine (V) derivative in inhibiting bacterial growth was compared to the known antibacterial iodine (III) control, Phenyl-2,4,6-trimethylphenyliodonium tosylate. Several bacteria strains were used including Staphylococcus aureus, Staphylococcus epidermis, Acinetobacter calcoaceticus, Escherichia coli, and Pseudomonas aeruginosa. Although all bacterial strains showed a dose-dependent decrease in growth, the  $\lambda 5$ -periodinane chemical outperformed the  $\lambda 3$ -iodinane control in suppressing and killing gram-negative bacteria growth, while performing similarly against gram-positive bacteria.

4:20 – 4:35 pm

**Anthony Toskin – Walsh University**

***Betulin Extraction processes and Functionality as a Paint Additive with Reflective Properties***

Betulin is an organic pentacyclic triterpene compound found in high concentrations throughout the *Betula* genus in the plant kingdom. Thermal reflection and antimicrobial properties of betulin make the compound a high-interest renewable resource for a variety of industries. Solvent extraction of *Betula pendula* bark to extract triterpene molecules followed by sublimation to separate betulin from other familial molecules was performed to purify betulin in a method less harmful to the environment than liquid chromatography. This study aims to utilize GC-MS and NMR data to confirm the identity and purity of the betulin compound derived from the solvent extraction and sublimation process. Pure betulin standard was added to a white acrylic-based paint in increasing weight percentage and analyzed using FTIR to confirm increasing incorporation rate throughout the samples. Samples of increasing betulin concentration were analyzed under a sun lamp using an infrared thermometer to monitor trends in thermal reflectance in relation to betulin content in paint.

4:40 – 4:55 pm

**Haley Fulton – Wilmington College**

***BA Quantitative Survey of Gastrointestinal Parasitism in Felis Domesticus from Ohio Shelters***

This study will build upon results of my previous year's research, A Comparative Survey of Parasitism in Housecats, Shelter Cats, and Surrendered Cats, which ultimately showed shelter cats presented with the highest parasitic prevalence between the three groups, supported by Little et al. 2015, Wyrosdick et al. 2017, Nagamori et al. 2018, and Hoggard et al. 2019. This year's research will therefore focus on parasitic prevalence solely in shelter cats to identify plausible reasons for last year's results by considering more factors such as dewormer status, intake date/length of stay, intake source, and the conditions of the shelters. The hypothesis is that shelter cats will have a lesser count, yet more diverse prevalence compared to last year's sample of shelter cats because of a larger sample size from more shelters and increasing efforts to create less stressful and more stimulating conditions for the cats. The rationale for this study is to determine if parasitic prevalence in shelter cats is as high as indicated from last year's research. A larger, more diverse sample size this year will allow for a more accurate representation of shelter cats and the demographics of their parasitic prevalence. This will help identify changes in parasitic prevalence and diversity compared to last year, if any, what those potential changes might look like, and what they might indicate. Stool samples will be collected from cats residing in shelters across seven counties in southwest Ohio. Samples will be examined using various fecal examination techniques including gross examination, saline direct mount, and fecal flotation. This study emphasizes the importance of understanding the threat that parasites pose to pets and owners, especially zoonotic parasites. It also highlights the connection between stress and feline physical health and practices to improve it, supported by Stella et al. 2013 and Buffington and Bain 2020.

5:00 – 5:15 pm

**Preston Dorsey – Wittenberg University**

***Inter-set Rest Interval Applications***

This research study seeks to determine the best rest interval between weightlifting sets to maximize gains in strength and hypertrophy. The goal is to determine whether it is better to rest for 3 or 5 minutes between sets to get the maximum benefits.