

Wittenberg Honors
Undergraduate Research Symposium

SCHEDULE & PROGRAM



Wittenberg University
Shouplin Center
Friday, March 31, 2023

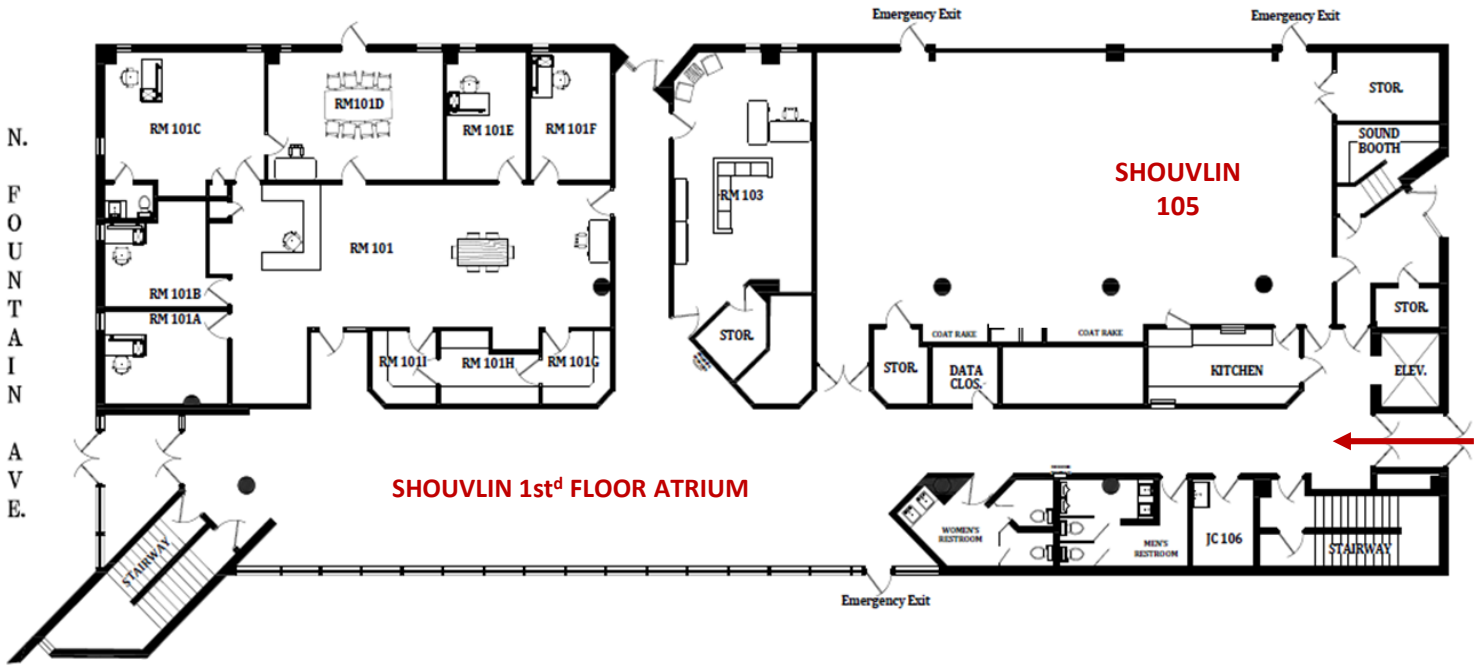
General Schedule:

- 8:00 a.m.–1:30 p.m.** **Check-In @ Benham Pence Student Center**
Check-In Desk
- 8:30 a.m.–8:45 a.m.** **Opening Remarks @ Shouvlin Center 105**
- 9:00 a.m.–11:15 a.m.** **Morning Session @ Shouvlin Center**
9:00 a.m. – 10:00 a.m. **Posters @ Shouvlin 1st Floor Atrium**
10:15 a.m.–11:15 a.m. **Presentations @ Shouvlin 105**
Life Sciences
Physical Sciences
Health Sciences
Computer Sciences
Data Sciences & Mathematics
- 11:30 a.m.** **Keynote Speaker @ Shouvlin 105**
Gina Schaefer '93, CEO and Co-Founder
A Few Cool Hardware Stores
- 12:30 p.m.–1:30 p.m.** **Lunch @ Benham Pence Student Center**
Central Dining Room / Alumni Rm
- 1:30 p.m.–3:45 p.m.** **Afternoon Session @ Shouvlin Center**
Presentations @ Shouvlin 105 & 201
Humanities
Social Sciences
Languages
Education

Questions? Stop by the Check-in or Information Desk in the Benham Pence Student Center any time throughout the day.

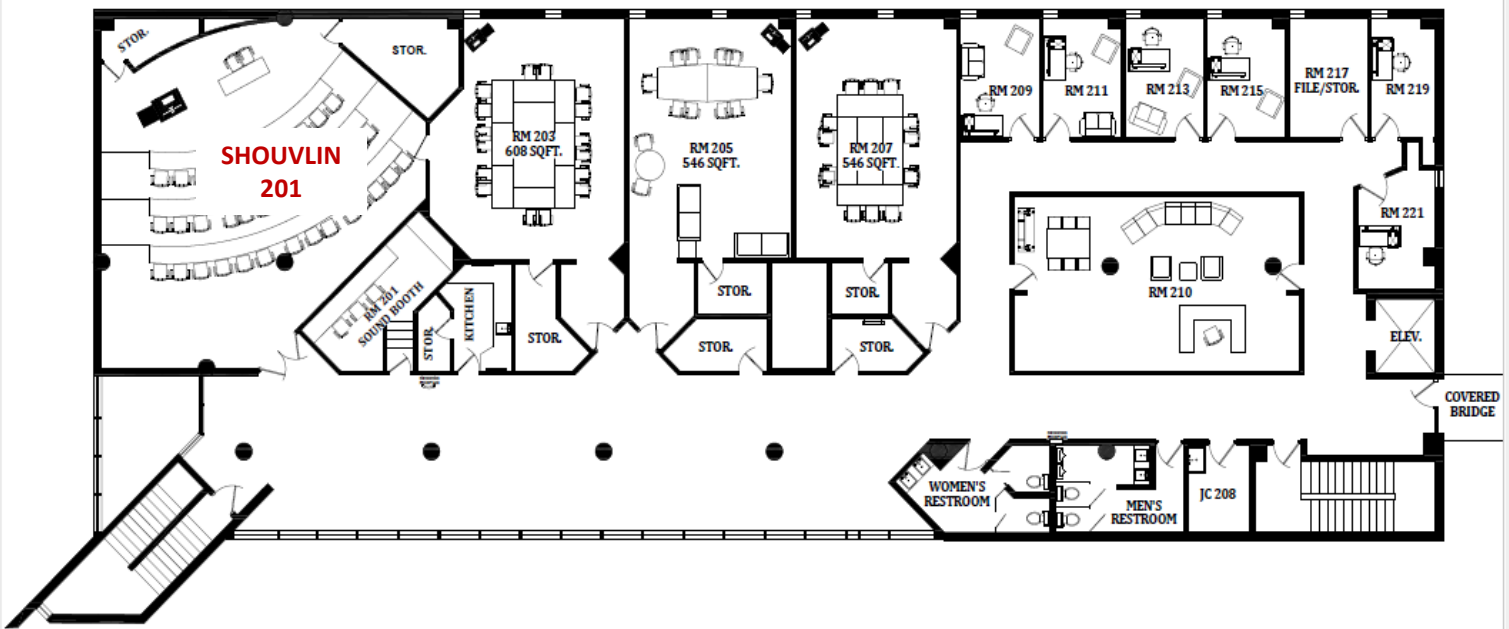

 SHOUVLIN CENTER PARKING

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SHOUVLIN CENTER 1ST FLOOR

DRAWN BY: FRED WING
 DATE: 3-22-21
 SCALE: $\frac{3}{32}'' = 1'$



SHOUVLIN CENTER 2ND FLOOR

DRAWN BY: FRED WING
 DATE: 3-22-21
 SCALE: $\frac{1}{32}'' = 1'$

MORNING SESSION – POSTERS

9:00-11:15

Shouvlin 1st Floor Atrium

Presenters will be in attendance with their posters from 9:00 – 10:00am to answer questions. Posters will remain set up until 11:15am

TABLE 1

Olivia Norbut – Wittenberg University

Variability of Gene Expression in Obsessive Compulsive Disorder (OCD) Mice Supplemented with N-acetylcystine (NAC)

Obsessive-compulsive disorder (OCD) is a debilitating psychological illness affecting approximately 2% of the general population. Current OCD pharmacotherapies regulate neurotransmitters such as serotonin and dopamine but are limited in efficacy. Glutamate is a type of excitatory neurotransmitter and has been linked with OCD. Few studies exist with a focus on glutamate-regulating agents and OCD. N-acetylcystine (NAC) is a supplement which functions to block glutamate receptor activity. A drug known as RU24969 is an agonist of 5-HT1B receptors and can be used to pharmaceutically induce OCD in mice. A study conducted by Allen et. al found a 3-week pretreatment of NAC prior to RU24969 injection more effectively relieved OCD-related behavior in mice than a 1-week pretreatment (2018). This study observes changes in target gene expression in NAC-treated, OCD-induced mice. Since chronic NAC pretreatment has been found to prevent 5-HT1B agonist-induced behaviors, changes in gene expression are expected. In this study, mice aged 8-10 weeks were injected with RU24969 after 1 or 3 weeks of NAC or water supplementation. qPCR was used to analyze target gene expression in RNA derived from harvest mouse brains. All target genes exhibited some change in expression relative to the control. These findings suggest NAC and RU, either independently or in combination, may influence genetic cascades involved in learning, memory, and cognition, ultimately having the potential capacity to induce or inhibit OCD behaviors.

TABLE 2

Izabel Giglio – Wittenberg University

Spotted Turtles

First Year Research Award presentation of research on spotted turtles with Dr. Phillips of the Wittenberg Environmental Science department

TABLE 3

Kaitlyn McGee – Wittenberg University

Impacts of Aquashade and Roundup on Hyla Versicolor Tadpoles

Determining the physiological and behavioral effects of common herbicides and pond dye on Hyla versicolor tadpoles.

TABLE 4

Carl Leitert – Wittenberg University

Great Lakes Ice Cover and a Changing Arctic

This poster presents information on how arctic climate is connected to Great Lakes ice cover using ice cores and other climate data

TABLE 5

Chloe Leonard – Wittenberg University

Soil Quality and Plant Biodiversity of a Discontinued Golf Course

Golf courses allocate stretches of land to heavily managed short-grass greenery. Since there has been an increase in golf course closures since the early 2000s, there is increased opportunity for this type of land to be rehabilitated into areas vegetation. One way to determine the health of a natural system is through the analysis of its soil quality. If land is intended to be rehabilitated into a native ecosystem, it is vital that its soil can support the vegetation necessary to sustain a healthy ecosystem. Plans to rehabilitate the discontinued golf course in Snyder Park into a wetland are led by the National Trail Parks & Recreation District of Springfield, OH, in collaboration with Dr. Ritter. To collect baseline soil data for this area, GIS and GPS were used to map out the collection of soil samples in a grid. Each soil sample was lab tested for quality, including tests for carbon content, nitrate nitrogen, phosphorous, and various other characteristics. Additionally, plant biodiversity was measured by random sampling of quadrats. This involved identifying different plant species and counting individual specimens within 1x1 meter grids. Data was then implemented into GIS maps to visually represent this baseline information for soil quality and vegetal biodiversity. This information can be used for future studies on this site for a comparison of soil quality as the park is renovated into a wetland area.

TABLE 6

Hannah Houseknecht – Wilmington College

The Effect of Wastewater Treatment on Dissemination of Antibiotic Resistant Bacteria

Antibiotic resistance is an international threat to public health and the effectiveness of modern medicine. Waste-water treatment plants are responsible for treating wastewater that is produced through human activity and adding the treated water back into the waterway. Several studies have linked treated wastewater to increased numbers of antibiotic-resistant bacteria and antibiotic-resistance genes in waterways. This study seeks to explore trends in different types of bacteria detected in wastewater runoff in Wilmington and Yellow Springs Ohio, including gram-negative, lactose fermenters, and antibiotic-resistant bacteria. Our research utilizes the EPA-approved membrane filtration method to screen for bacteria resistant to ampicillin grown on different types of bacteriological media.

TABLE 7

Lilia Moorman – Wittenberg University

Environmental DNA

Environmental DNA (eDNA) is the genetic material shed by organisms and can be collected from environmental sources like sediment and water. Once it is collected, eDNA can be extracted, amplified, and sequenced to determine if target organisms are present in the area where the sample was taken from. This study looked at using eDNA to determine biofouling organism presence off of a dock in Beaufort, North Carolina.

MORNING SESSION – PRESENTATIONS

10:15-11:15

Shouplin 105

10:15- 10:30 am

Lexi Repp – Wittenberg University

Effects of N-acetylcysteine on Genes Encoding for Glutamate Receptors and Neurological Processes in an OCD-Induced Mouse Model

Obsessive compulsive disorder (OCD) is a neuropsychiatric disorder in which individuals suffer from extreme anxiety, hoarding, and uncontrollable thoughts. Current treatments for OCD are not effective for all individuals, but an over-the-counter drug, N-acetyl cysteine (NAC), has shown promising therapeutic effects for those afflicted with OCD. Mice were separated in groups and given NAC for one or three weeks and then given RU24969, which is a serotonin receptor agonist that induces the effects of OCD in mice (Allen EM). The mouse brains were then homogenized, mRNA was extracted, and cDNA was created. The Quantitative Polymerase Chain Reaction (qPCR) analysis was used to measure gene expression in six chosen genes: CNTN4, TNFR, GRIK3, GRIA2, SLC6A4, and ADRA2A and two reference genes, PPIA and HPRT. Gene expression will be measured in seven different treatment groups with varying conditions including normal mice, those with OCD, and those treated with NAC. These genes are involved in several neurological pathways, which could mean there is a link between their activity and OCD. The trend in the data for these genes showed significant increases in gene expression in the 1-week NAC +water treatment and decreases in the 3-week NAC + RU treatment.

10:30 – 10:45 am

Leah Vogt – Wittenberg University

A Population Demographic of Midland Painted Turtles in Conrad Balliet Family Nature Preserve Pond

Funnel and basking traps (the basking traps having associated trail cameras) to trap and assess the Midland Painted Turtles of in Conrad Balliet Family Nature Preserve's pond to determine population demographics. Using PIT tags, scute marks, and white marker, the turtles were marked in order to assess recapture versus new capture to allow an accurate count. Also, sex and size (plastron and carapace length and width, shell height, and weight) of the turtles cause in the funnel traps were noted for further description of the population.

10:45 – 11:00 am

Evie Chatfield – Wittenberg University

The Brighton Mastodon at Wittenberg University

An American Mastodon skeleton was found in Brighton Township, Ohio during Spring 1923. Multiple bones and bone fragments were excavated and brought to Wittenberg in 1924. The largest, and most complete bone fragments were partially reconstructed and put on display in the Wittenberg Geology Museum in the 1960's. The remaining fragments were surveyed by two Wittenberg students in the late 1970's and a cursory inventory was completed. The bone fragments currently remain in the original boxes in the Wittenberg Science Building. This study uses comparative analysis to attempt to determine the sex and age at the time of death.

11:00 – 11:15 am

Claire Muia – Wittenberg University

Spatial Ecology and Habitat Usage of Spotted Turtles

Study on the spatial ecology, movement, and habitat usage in a local Clark County fen using mark recapture and radio telemetry.

KEYNOTE SPEAKER

GINA SCHAEFER

11:30-12:15 - Shouplin 105



Gina Schaefer, Wittenberg University Class of 1993, is Founder and CEO of a chain of Ace Hardware stores located in Washington, D.C., Baltimore, MD, Alexandria, VA, Takoma Park, MD and Silver Spring, MD. She is a passionate entrepreneur who grew her company from one to 13 stores in 18 years and now leads a multimillion-dollar business that employs more than 250 people. She is dedicated to maintaining a strong corporate culture.

Schaefer's big passion is for developing urban markets, supporting small businesses and helping women to succeed in all aspects of the hardware industry. She has tirelessly focused on the "Return to Main Street" movement in her own city of Washington, D.C., to promote Shop Local campaigns and community revitalization in urban areas.

Symposium participants: Following Gina's speech she will join us for a more informal lunch discussion in the Alumni Room. Please use your lunch tickets to gather lunch items from the Central Dining Room and bring your lunch to the Alumni Room. Gina will be available there to sign your books if desired.

AFTERNOON SESSION – PRESENTATIONS

1:30-2:30

Shouplin 105

1:30- 1:45 pm

Charlotte Sarchet – Wittenberg University

From Formation to Marxism: The Trajectory of Art in the Soviet Union

From the explicitly motivated to the unconsciously biased, artwork is a reflection not just of the artist's creativity, but of the artist's understanding of and role in society. Russian art of the 19th and 20th centuries, contextualized by political turmoil and constant administrative change, communicates truths about an era shrouded in misinformation and artifice. As tsarism fell to socialism and the heavy hand of the Imperial Academy was superseded by the iron fist of the Artists' Union, a variety of artistic movements passed through Russia. Briefly home to pioneers of European abstract art in the 1890s and 1900s, Russia's finest avant-gardists were faced with few options only decades later: flee, accept punishment, or adapt. In the first decades of the 20th century, Russian artists acted as revolutionary figures, driven to disseminate complex ideas of an idealistic societal reset. Then, as Stalinism pervaded the country in the 1920s, the artist's role was no longer that of an intellectual, but that of a simple proponent of the State. By chronologically following stylistic and thematic changes in Russian art from the first stirrings of class consciousness in the 1860s to the height of totalitarian control in the 1950s, the complex relationship between an artist and his society can be gleaned. The Marxist approach to art historical analysis is necessary to understand this topic, while the formalist approach is needed to precisely define the physical and stylistic variations present in art created under these varying political circumstances.

1:45 – 2:00 pm

Sydney Morris – Wilmington College

Revealing Reflection: Examining the Use of Color in The Handmaid's Tale

This study examines the use of colors in The Handmaid's Tale goes through the dystopian world of Gilead where colors are used to label the women, based on their fertility. My research consisted of historical background of colors, psychological reactions to color, and the biblical influences on the society of Gilead. The project research showed the significant impact the colors have on the mentality of women of Gilead.

2:00 – 2:15 pm

Kaitlyn McGee – Wittenberg University

EDM Meets Academia

Diving into the creative thought process of producing and engineering electronic music as a bridge across academic disciplines.

2:15 – 2:30 pm

Bella Fiorito – Wittenberg University

The Roving Women's World: The Evolution of Female Agency in Aphra Behn's The Rover I and II

This project examines two plays from 17th century playwright, poet, and author Aphra Behn: *The Rover I* and *The Rover II*. *The Rover I* is one of Behn's most celebrated works, especially as an early piece of feminist theater that explores the theme of female agency. However, its sequel *The Rover II* has remained relatively understudied. I argue that *The Rover II* contains vital information relevant to Behn's exploration of female agency that has been mostly left out of scholarly discussion. By considering *Rover II* as a work that continues Behn's discussion of female agency, one can see how clearly the theme is developed from Behn's source material for her plays, *Thomaso*, to *The Rover I*, and eventually to *The Rover II*. Each play revolves around a choice that characters must make: in *Thomaso* the choice is made by the male characters with the female characters having little to no agency. In *Rover I* female characters are able to utilize their growing agency to manipulate the choice of the male characters. At last, in *Rover II*, the choice is finally given to the female characters. This project will explain how this development is allowed to occur because female agency develops from something that is utilized with naivety and inexperience in *The Rover I* to something that is utilized with experience and self-knowledge in *The Rover II*.



AFTERNOON SESSION – PRESENTATIONS

1:30-2:30

Shouplin 201

1:30- 1:45 pm

Abby Gerstenzang – Wittenberg University

Voices from a Small Hamlet: An Ethnography of Maple Springs

The small hamlet of Maple Springs is located on Chautauqua Lake in Western New York. First settlers were attracted to the area because of its natural resources and moderate climate. The region consisted of great beauty which opened the area to a tourist industry. Today Maple Springs consists of 110 residents, but only approximately 30 of those residents live in the community full-time. Others in the hamlet are characterized by differing residence patterns, such as the sunbirds, who reside in the summer months, and weekenders who visit on the weekends. I conducted an ethnography where I visited the community for three weeks. While there, I interviewed 11 people involved in the community in different ways. The ethnography examines the four types of people that comprise the hamlet, the way it has been shaped by its history, the generational nature of community connection, and the extreme closeness of the community.

1:45 – 2:00 pm

Kirstin Hawkins-White – Wittenberg University

Blurred Lines and Kinship in the Foster Care System

The foster care system attempts to renegotiate the identity of children, who were taken from their biological parents or guardians due to some perceived lack. As a result, many foster children struggle to assimilate to the foster care system and the new families prescribed, often resisting through misbehavior. The system is responsible for providing care for many children—each with their own unique but complex circumstances and needs. Because of this, the foster care system relies on an extensive network of foster parents; however, unfortunately, due to the unstable nature of the system, many children are neglected. This paper explores the experiences of foster parents, case workers, and biological children of foster parents, giving insight into the process of creating familial bonds, appointing caregivers, and filling in the gaps left over from bureaucratic neglect.

2:00 – 2:15 pm

Ali Williams – University of Mount Union

Generational, Gender and Career Field Influences on Perceptions of Disabilities

This project examines varying perceptions of students with disabilities as well as attitudes toward classrooms in which both neurotypical students and students with disabilities are present. Participants from varying generations, genders, and career fields will be take part in an online survey gathering their demographic information in addition to their perceptions and attitudes surrounding disabilities and related topics. I intend to recruit an estimated thirty participants with representation of multiple age groups, genders, and career fields. I will compile the research findings, discussion points, and connections to previous literature into a presentation that further explains the elements of the study. This research is very important because we may be able to identify generational, career field, or gender stigmas toward those with disabilities. The results of this study could be used to further the education of society members in regard to the knowledge and acceptance of disabilities.

2:15 – 2:30 pm

Ryan Hensley – Wittenberg University

Let's Talk About Sex: An Exploration of the Taboo Surrounding Sex in American Society

The taboo around sex is something that plagues our society today. It prevents people from talking about, learning about, or engaging in sex. In this essay, I seek to better understand this taboo and the role that it plays in American society. To answer this, I interviewed people from Planned Parenthood, an organization that regularly provides sexual health education and services. Through interviewing people from this organization, I found four major themes: religion, generational differences, fear, and misconception: religion was found to be both something that potentially created the taboo and something that propagates it today; generational differences between children and parents cause sex to not be discussed by families despite children wanting to talk about it; Fear prevents people from both talking and engaging in sex; misconception adds to the fear and prevents accurate information from being discussed in the small amount of spaces it is discussed in. These themes help explain not only where the taboo came from and is based in, but also how it implements itself in modern American society. In better understanding this taboo, it could help us finally break free from its powerful embrace.

AFTERNOON SESSION – PRESENTATIONS

2:45-3:45

Shouvlin 105

2:45- 3:00 pm

Satta Sherriff – Wittenberg University

An Investigation into the Impact and Challenges of Domestic Violence on the Lives of Women in Liberia

This study focuses on the impact and challenges of domestic violence on the lives of women living in Liberia, West Africa. To better understand the domestic violence situation in Liberia, ten semi-structured face-to-face interviews were conducted in Montserrado, and Gbarpolu Counties among service providers, NGOs, and Liberian citizens. Through these interviews, it was found that the limited framing and contextualization of domestic violence as a private/public issue have thwarted the kind of attention, resources, and awareness given to the issue. The blanket framing of domestic violence as “sexual gender-based violence” has created an adverse effect on other forms of sexual and gender-based violence, especially the prevalence of wife beating, and persistent non-support in the country. Domestic violence has been normalized as a private issue, rather than a public matter that needs to be handled according to the law.

3:00 – 3:15 pm

Martina Starkey – University of Mount Union

The Effects of Feline Personality, Coat Color and Socialization on the Perceived Human-Cat Relationship

This study researches feline coat color, personality and sociability to determine what influences the human-cat relationship. Roughly 100 cat owners (18+ years) were recruited from social media outlets like Facebook, Instagram, Twitter, and cat websites. In addition, students at the University of Mount Union were given extra credit by the psychology department for completing our survey. The survey measured feline and owner demographics, cat-owner relationship satisfaction, feline personality, and feline sociability. We examine the contradictory information regarding black cats and their friendliness while examining if orange cats have better relationships with their owners. We believe that more socialized cats will have a better relationship with owners as well. We also believe that there will be a positive relationship between agreeableness and a satisfactory human-cat relationship and a negative relationship between neuroticism and the human-cat relationship. Although studied independently, or with less variables, previous research supports our hypothesis that coat color, cat personality and cat socialization affect the human-cat relationship. Overall, limited research exists regarding feline companions, therefore, our research on this topic may lead to greater knowledge about how these are related to satisfaction in the cat-owner relationship. It can also provide cat owners with additional information about what correlates to a more positive or negative cat-owner relationship. To the best of our knowledge, no previous research exists that includes all of our variables. As a result, we are completing pivotal research in a nearly uncharted area of animal research.

3:15 – 3:30 pm

Kristina Withem – Wittenberg University
Dobbs vs. Jackson Women's Health Organization

This project is a research paper on the effects of the Dobbs decision on reproductive healthcare, especially in Ohio. It focuses on Ohio legislation, both sides of the debate, and the history of reproductive healthcare.

3:30 – 3:45 pm

Danny Bean – Wittenberg University
Cobra Kai and the Macchioan Legacy

I will be arguing that the television show Cobra Kai is a non feminist work with anti feminist undertones. To help prove this, I will be looking at some of the patriarchal tropes it inherits from the original Karate Kid trilogy.



AFTERNOON SESSION – PRESENTATIONS

2:45-3:45

Shouplin 201

2:45- 3:00 pm

Gabrielle Doty – Wittenberg University
Alternative Spirituality: Lived Experience and Identity

Alternative spiritualities, or spiritual practices that fall outside of traditional institutionalized religions, have long been viewed as deviant. But with growing religious discontent in the world, more people have begun turning to these alternatives. This thesis explores the lived experience and identity of Americans who practice alternative spiritualities. Through interviews with seven Spiritualist church attendees and three Witchcraft practitioners, three themes were examined: constructions and ideologies, motivation factors, and identity. I found that spiritual constructions and religious ideologies are highly individualistic and influenced by previous religious experiences. Motivations for seeking out spiritual alternatives stem from growing discontent with institutionalized religions, a need for community, and access to information. Moreover, motivations to continue spiritual practices are linked to meaningful practices and the communities that alternative spiritualities foster. Individual identity is influenced by the spiritual practices and lived experiences within these alternative spiritualities, as well as positively impacting their perceptions of reality.

3:00 – 3:15 pm

LuMing Davis – Wilmington College
Child Sex Trafficking and Pornography

My research project is the analysis of Pornhub's policies to evaluate the effectiveness of flagging abusive and underage content. My research is a case study that takes a look at changes made to Pornhub's policies and how that has affected the type of content that is uploaded to their website.

3:15 – 3:30 pm

Harley Paul – Wittenberg University

Mental Health Perceptions

The purpose of the study is to investigate relationships between attitude and beliefs held by religious or non-religious groups about one another, and mental health stigma. As part of the religiosity and mental health stigma assessments, participants will be asked questions about religious affiliation or absence of one, their perceptions on the likelihood of another group having a mental illness compared to the general population, and their mental health stigma beliefs. The anticipated outcomes is more negative mental health stigma beliefs among religious participants compared to non-religious participants and higher prevalence of ratings of mental illness for non-religious participants.

3:30 – 3:45 pm

Tiana Hughes – Wittenberg University

Social Attitudes, Crime Salience and Face Ratings

The goal of the research is to examine whether societal attitudes such as sexism, objectification, and fear of crime predict participant ratings of trustworthiness for AI-generated male faces. To further examine the interaction with crime salience, a short manipulation will also take place where we use a fictitious opinion poll on "college issues" to either highlight or not highlight campus crime. We anticipate that benevolent sexism, particularly benevolent sexism paired with crime salience, may shift ratings of neutral or high dominance faces to be more trustworthy