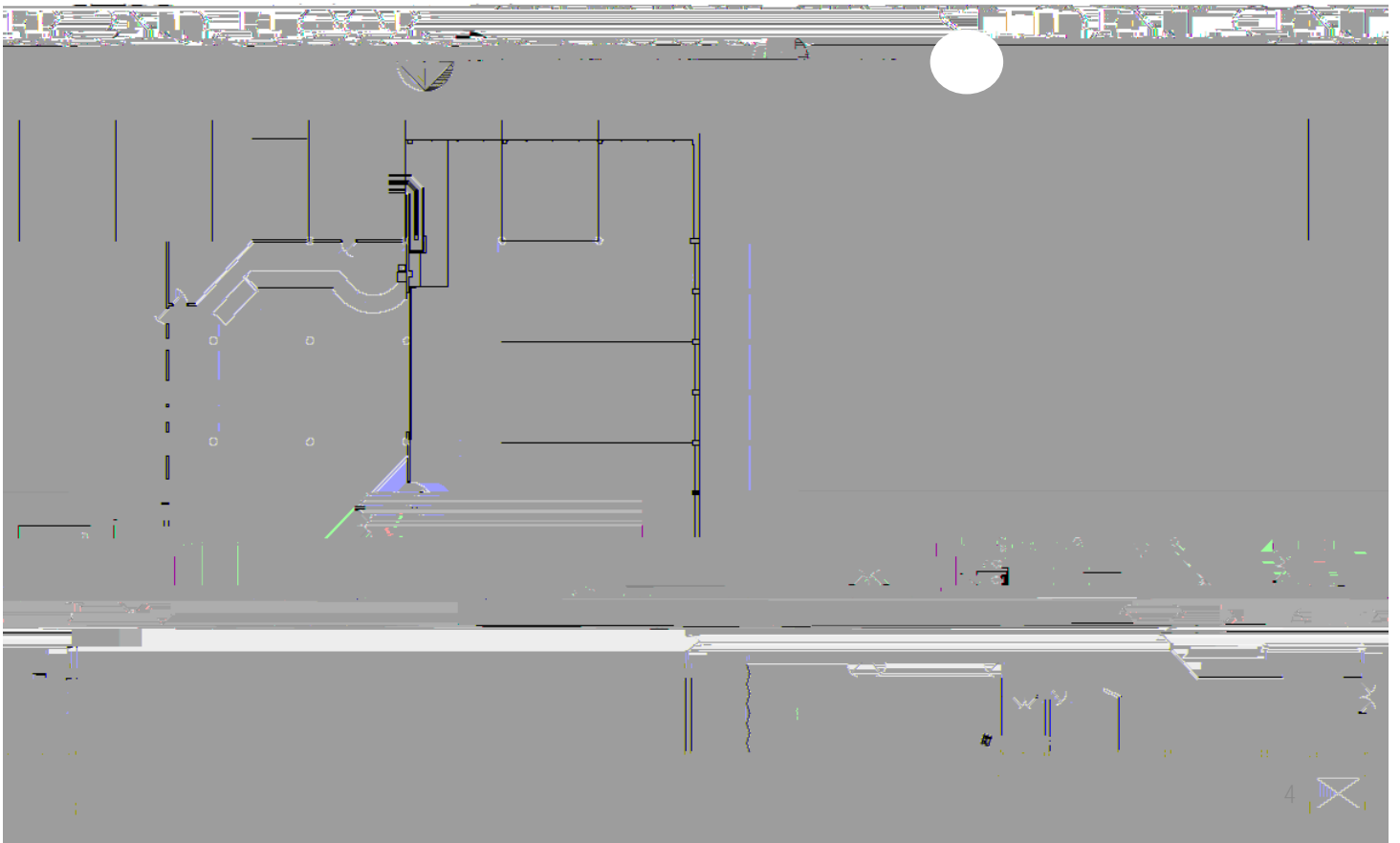




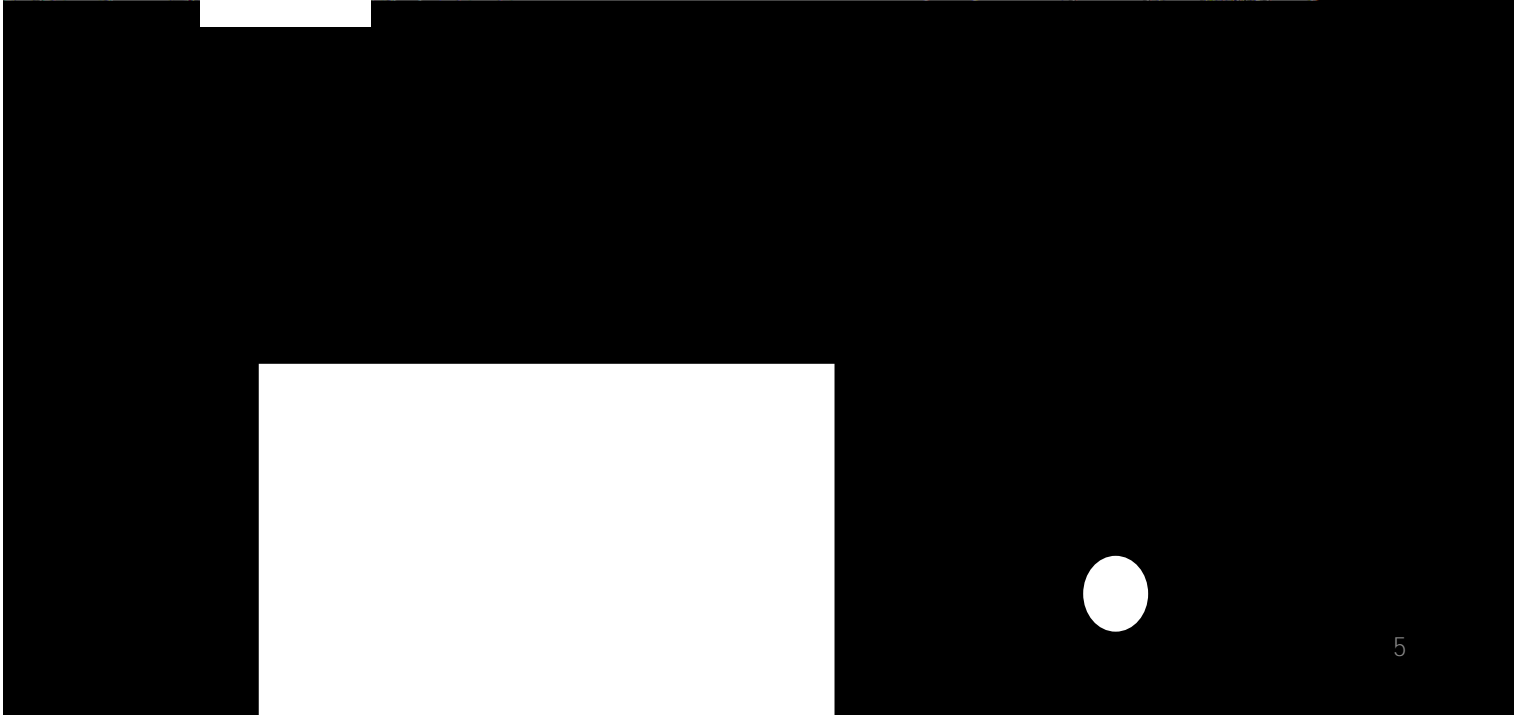
General Schedule:



STUDENT CENTER 1ST FLOOR



SHOVLIN CENTER PARKING



MORNING SESSION POSTERS

9:00-11:15

Shouvlir 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

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.

Spotted Turtles

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

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.

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

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 of native 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.

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

MORNING SESSION PRESENTATIONS

10:15 11:15

Shouvlir 05

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 act

AFTERNOON SESSION PRESENTATIONS

1:30-2:30

Shoulin 05

T R W W T E F a A A a B
The Rover I and II

Blurred Lines and Kinship in the Foster Care System

AFTERNOON SESSION PRESENTATIONS

2:45-3:45

Shouvlina 105

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

