

## **WEDNESDAY SESSIONS**

**SESSION 1: 12:00 – 12:50**

1A UNC 214  
Moderator: Adair Carroll

---

**Emily Dunham, Kylie Berry, Staci Davis, Crystal Holtgrewe, & Chimdiya Nosiri, Matt Penix, Cody Redman, Deborah Smith**

Mentor: Adair Carroll

### **Addressing Health Literacy Needs to Promote Positive Patient Outcomes I**

Health literacy is defined as the degree to which individuals have the capacity to obtain, process, and understand basic health information and services needed to make appropriate health decisions (Health.gov, 2017). Unfortunately, a large number of the American population has low health literacy skills coupled with low socioeconomic status, resulting in a rise of individuals experiencing health outcomes. The professional nurse plays an integral role in educating clients and their family members. Students will report on evidence based practice related to assessing clients' health literacy skills and the teaching interventions students provided to clients to improve their health literacy and overall outcomes.

1B UNC 215  
Moderator: Amy France

---

**Jacob Blair, Chase Meade, & Noah Braden**

Mentor: Amy France

### **Respiratory Therapy Case Study**

Students in the Respiratory Therapy program regularly respond to case studies each semester. This group will be presenting a case study over an individual that has Myasthenia Gravis and Asbestosis for our respiratory program. They will discuss a treatment plan they have developed and focus on patient conditions, teaching those in attendance about various processes of the disease.

**Michelle Wampler, Lesleigh Sexton, & Adam Pate**

Mentor: Amy France

### **Effects of Burn Trauma on the Respiratory System**

Students in the Respiratory Therapy program regularly respond to case studies each semester. This group will be presenting a case study of a patient's burn trauma and the effects on the cardiopulmonary system. They will discuss a treatment plan they have developed and focus on patient conditions, teaching those in attendance about various processes of the disease.

## **Diana Paola Piedra Moreno**

Mentor: Aaron Bruewer

### **Conceptions Regarding Relationships between Democracy and Mathematics Curriculum**

An understanding of a critical connection between mathematics education and democracy makes possible that teachers and students build social transformations from the awareness of injustice, inequality and privilege. However, to do so, future research in critical mathematics education curriculum is needed. This presentation explores the advances of a research that seeks to identify some conceptions of mathematics teacher candidates regarding mathematics curriculum for democracy and analyzed how those are a personal and professional construction related to their social democratic experiences and their college education. Democracy, democratic school and the role of curricular studies in mathematics for democracy are main areas of the literature review. The methodology used is qualitative narrative, the method of data collection is in-depth interviews. The participants are five mathematics teacher candidates.

## **Katie McIntosh**

Mentor: Aaron Bruewer

### **Understanding Student Perceptions of Belonging in the Middle School**

In school and society, people need to feel like they belong. I will present a review of recent literature on what creates student sense of school belonging and how to use the findings to promote development of belonging. Ultimately, teachers must use their knowledge of the development of school belonging and those influences on it to implement tools that create a safe and positive school and community culture. I entered this research with an intense focus on how students feel in their school and classroom contexts, and I have found that implementing an advisory group has potential to aid in creating student sense of connectedness.

## **Madeline Girts**

Mentor: Scotty Thompson

### **Changing the Way Math Curriculum is Presented: An Action Research Project**

Through an action research project, I used various methods to present Ohio Geometry State Standards to a 10th grade geometry class. With Howard Gardner's Multiple Intelligence Theory in mind, I centered lessons around these 8 ideas in an attempt to gain more student involvement in the classroom and higher turn in rates of daily homework assignments.

## **Samantha Budd**

Mentor: Elizabeth Wood

### **Islam and Democracy: How Democracy is Compatible with Islam**

This presentation will cover the six components of a democracy: participation, developmentalism, protection, performance, pluralism, and secularism. The Quran, Hadiths, and early Islamic history from the time of the Prophet Muhammad (saw) to the death of the fourth of the Rightly Guided Caliphs. These sources will be used with each of the six components of democracy to show the compatibility of democracy with Islam.

## **Ryan Dosser & David Jaeger**

Mentor: Dan Johnson

### **The Ethics of Transhumanism**

This presentation analyzes Transhumanism, an ideology stating that humanity can and should go "beyond" itself to become something more than human, using Aristotelian virtue ethics and definitions of what makes something 'good'. By comparing Transhumanist ideals with Aristotle's ideas of what makes something flourish, this presentation examines the ethics of Transhumanism, pondering questions of whether or not it is right, good, both, or neither.

## **Delinique Barber**

Mentor: Elizabeth Wood

### **Are We Beyond Race?**

A discussion on the concept of post-racialism and if the millennial generation are beyond it. Issues of police brutality, micro-aggressions and stereotyping factor into this discussion on if ever race can become a socially arbitrary category.

### **Devin Jenkins**

Mentor: Kejing Liu

#### **Does Segmentation Promote Phonemic Awareness**

My study takes place in a kindergarten classroom and I am currently finishing up conducting research on whether or not phonemic segmentation promotes inventive spelling.

### **Chelsea Bobst**

Mentor: Kejing Liu

#### **Effectiveness of Parental Involvement in the Classroom**

The presentation will discuss how effective parental involvement is in the classroom. Parental involvement can either be positive or negative when it comes to student achievement. Effectiveness will be discussed based on the data collected from the classroom. Ways to get parents involved will be discussed as a way to get educators in communication with parents/guardians. Results of the study will be explained by showing what was done was either ineffective or effective.

### **Kimmy Morgan**

Mentor: Kejing Liu

#### **The Effects of Parental Involvement on Academic Success**

This presentation will focus on the effects parental involvement has on the academic success of six children in an early childhood classroom. The presentation will highlight the research and methodology used to complete this action research topic as well as an overview of the data collected. This presentation will also include a brief discussion about research that has already been conducted on this very topic and how it relates to the data collected throughout this action research.

## SESSION 2: 1:00 – 1:50

2A UNC 214  
Moderator: Adair Carroll

---

**Raigan Pyles, Aleah Clark, Derrick Dillow, Tori Harr, Madison Osborne, Amy Lore, Kari Skeens, Stacy Wheeler, & Carrie Wynn**

Mentor: Adair Carroll

### **Addressing Health Literacy Needs to Promote Positive Patient Outcomes II**

Health literacy is defined as the degree to which individuals have the capacity to obtain, process, and understand basic health information and services needed to make appropriate health decisions (Health.gov, 2017). Unfortunately, a large number of the American population has low health literacy skills coupled with low socioeconomic status, resulting in a rise of individuals experiencing poor health outcomes. The professional nurse plays an integral role in educating clients and their family members. Students will report on evidence based practice related to assessment of clients' health literacy skills and the teaching interventions students provided to clients to improve their health literacy and overall outcome.

2B UNC 215  
Moderator: Amy France

---

**Alexis Witter, Paige Bentley, & Josh Wilfong**

Mentor: Amy France

### **Respiratory Therapy Case Studies**

Students in the Respiratory Therapy program regularly respond to case studies each semester. This group will be presenting a case study over a 42 year old male on CMV. They will discuss a treatment plan they have developed and focus on patient conditions, teaching those in attendance about various processes of the disease.

2C LIB 108  
Moderator: Jodie Dunham

---

**Levi Little**

Mentor: Aaron Bruewer

### **An Analysis of Cooperative Learning**

This presentation will be over the first 3 chapter of my Capstone paper for education. The chapters, in order, are the introduction, literature review, and methodology. The literature review included research on cooperative learning strategies, focusing on which were effective/ineffective, and found an area that seemed to be inconsistent within the research, namely, whether to group students in mixed or like ability groups. The methodology outlines an action research process through which to discover which grouping method works better. Whatever results are found will be analyzed separately for boys, girls, advanced students, struggling students, and the class as a whole.

### **Jess Patrick & Brittany Stout**

Mentor: Scotty Thompson

### **Making Math Interesting**

Changing student attitudes towards mathematics education through implementation of project based learning. What actions can teachers take to create a more positive outlook to the mathematics classroom?

### **Annie McFarland**

Mentor: Aaron Bruewer

### **Collaborative Learning and Math Motivation in the Middle School Classroom**

This presentation will review literature findings regarding the effects that collaborative learning has on motivation in the math classroom. The research stemmed from a persistent issue observed in the rural Midwest middle school classroom, driving a purpose for my research and plan of action for the study. The research explores the themes of collaborative learning, technology, goals, purpose/meaning of content, and the social exposure in group work, all while discussing the relationship to student motivation. The plan of action for my study was then developed from the gap in research of how teacher-selected grouping strategies affect students' math motivation.

2D LIB 207

Moderator: Leila Lomashvilli

---

### **Mallory Spencer**

Mentor: Phil Blau

## **Exponential and Logistic Models for Population Growth**

We present two models for analyzing population growth. The first is exponential, where growth is unlimited. The growth rate of exponential equations is proportional to the size of the population. The other is the logistic model, where there is a carrying capacity. The growth rate of the model is highest when the population is at half of the carrying capacity, and is slowest when the population is near zero or near carrying capacity.

### **Derrick Mershon & Tyler Stidham**

Mentor: Eugene Burns

## **Bordetella Biofilms and Their Interaction with Oral Microbiota**

*Bordetella pertussis* and *Bordetella parapertussis* cause respiratory infections such as whooping cough. Oral microbiota may inhibit growth of pathogens and prevent disease. This study tested if normal throat microbiota can inhibit growth of *Bordetella pertussis* and *Bordetella parapertussis*. *Streptococcus mitis*, *Streptococcus salivarius*, *Streptococcus oralis*, and *Lactobacillus rhamnosus* were used for the throat microbiota. These bacteria were grown in single species biofilms, the growth of which can be seen by light microscopy. Biofilm formation can be verified via antibody assay and/or staining. Some of these bacteria do not attach well to the plastic wells of the microtiter plate, therefore the cells are washed away and do not form biofilms. This problem was resolved by using gelatin to allow the bacteria to more easily attach. Multispecies biofilms were grown to see if these bacteria would grow together and to determine if some bacteria would inhibit growth of other bacteria.

### **Noah Wickerham & Martin Holsinger**

Mentor: Eugene Burns

## **Bordetella Bronchiseptica and Bordetella Avium in Animals of Southern Ohio**

*Bordetella bronchiseptica* and *Bordetella avium* are gram-negative rods that are the causative organisms of many respiratory infections in animals. These infections include kennel cough in dogs, rhinitis and conjunctivitis in cats, snuffles in rabbits, bordetellosis manifesting as various upper respiratory tract infections in birds, and atrophic rhinitis in pigs. While the diseases are well understood, the reservoirs of *B. bronchiseptica* and *B. avium* in southern Ohio are not definitively known. The purpose of this research is to find animal(s) that can be considered reservoirs for *B. bronchiseptica* and *B. avium*. Blood samples and tracheal swabs were taken from a variety of animals and analyzed using ELISA and PCR testing, respectively.

2E MAS 108  
Moderator: Michelle Moohr

---

### **Garrett Scowden**

Mentor: Logan Minter

## **Novel Propagation Methods of Humulus Lupulus in Southeastern Ohio**

A growth comparison study involving *Humulus lupulus* (c.v. Nugget) vegetative cuttings was conducted to compare effects of three rooting treatments (indole rooting hormone, mycorrhizae and no treatment [control]) and two media

substrates (potting mix and perlite). Specimens were placed into four 48-cell trays (192 total). Each tray was held in an isolated bug dorm. Two cell trays contained standard potting mix and two contained perlite. Notes and measurements were recorded weekly and dead specimens removed to be inspected for root growth. At the end of the ten-week observation period, final measurements were taken and all specimens were pulled from their substrate to be inspected for root growth (length and width). Statistical analysis was conducted on growth rate based on individual treatments and interactions. Mycorrhizae had the highest growth rate as well as the most root development. No specimens survived rooting hormone treatment and few remained viable in the potting mix.

## **Emily Meddock**

Mentor: Kejing Liu

### **Trapped on Science: Digging deep into learning**

Early Childhood Curriculum is based primarily on math and reading content areas, leaving out important information in science. It's no surprise that students learn in multiple ways at different rates. By eliminating content areas educators are harming students' full learning potential. The purpose of this study is to explore the gaps between not learning Science and student learning outcomes, by examining students' academic growth by integrating this content into early childhood curriculum. By filling in the gaps with integrated curriculum students and teachers will be able to improve test scores and actively engage during learning time.

## **Tiffany Knauff**

Mentor: Kejing Liu

### **Inquiry in Kindergarten**

Inquiry in Kindergarten involves the journey of science inquiry integrated within the kindergarten classroom. The study focuses on the active involvement students present when studying by inquiry verses that of seat work.

2F MAS 109  
Moderator: Erik Larson

---

## **Ashley Fox**

Mentor: Kejing Liu

### **Effects of Positive Teacher Student Relationship on Learned Helplessness**

The research being conducted is completed in a public school second grade classroom in rural Southern Ohio. The research is to determine if there is a correlation between positive student teacher relationships on learned helplessness. The study is being based on questionnaires students fill out at the beginning and end of each week, assessing their feelings of helplessness or ability to control their situation.

## **LeAnn Hackworth**

Mentor: Kejing Liu

### **The Effects of Teacher-Student Rapport on Classroom Behavior and Learning**

This presentation discusses the effects of the importance of the relationship between students and their teachers. Specifically, the study examined the impact of the relationship students have with teachers on the overall behavior of the class and the students' academic achievement. The primary researcher in this study also examined the results of a rapport building strategy that was introduced in the middle of the study to observe the effects the strategy had on rapport, behavior, and student learning.

## **Bobbie Jo Bricker**

Mentor: Kejing Liu

### **How Do Individualized Education Plan (IEP's) Affect Student's Self-Esteem, Confidence, and Motivation to Learn?**

The research question I am studying is: How individualized education plan (IEP's) affect student's self-esteem, confidence, and motivation to learn? The purpose of this study is to observe and recognize how IEP's affect students' performance. Based on my observations the students with IEP's lack those three qualities while completing daily tasks and assignments. During my presentation, I will discuss the data that I collected throughout the semester, such as the attitude surveys, monitoring student's grade reports, and implementing a reward system. I will then review the data collection results up until the end of the semester.

### **Session 3: 2:00 – 2:50**

3A UNC 214

Moderator: Rhoni Maxwell-Rader

---

## **Brooke Ballis**

Mentor: Daniel Finnen

### **Microwave Assisted Synthesis of Benzimidazoles Using Aromatic Aldehydes**

Benzimidazoles are an important class of nitrogen containing heterocycles that are found in many natural products, pharmaceuticals, and dyes. A number of benzimidazoles have been synthesized by condensing aromatic aldehydes with various di- and tri-amines. Many of these compounds exhibit desirable optical properties such as those required for

organic dyes, organic LED's (OLED's), and dye sensitized solar cells (DSSC's). Several reports have also shown that such compounds may be useful as chemosensors, specifically as anion sensors. This research focused on developing a concise synthetic procedure in order to efficiently produce highly conjugated benzimidazole systems so that their optical properties could be evaluated. This presentation will report on the progress of new compounds that have been synthesized using 9-anthraldehyde with various diamines heated in a conventional microwave oven with an ammonium chloride catalyst. In addition, the subsequent UV-Vis and fluorescence spectroscopic studies of these compounds will be presented.

### **Brooke Ballis & Michaela Garner**

Mentor: Derek Jones

### **Sonogashira Coupling on Aryl Halide Compounds**

Sonogashira Coupling is a cross-coupling reaction used in organic synthesis of metal-catalyzed carbon-carbon bonds to generate arylalkynes and is performed with a palladium catalyst, a copper (I) co-catalyst, and an amine base. The reaction requires anhydrous and anaerobic conditions. The reactions carried out so far have used iodocorranulene, bromobenzene, and bromotoluene as the aryl halide source and are carried out through microwave technology with varying reaction times ranging from ten to twenty minutes. The characterization of the products is performed by Nuclear Magnetic Resonance spectroscopy (NMR) and Gas Chromatography-Mass Spectroscopy (GC-MS). These characterizations have shown homocoupling of the alkyne, which is referred to as Glaser-Hay Coupling. This issue is evaluated through repeated trials in attempt to better the anaerobic conditions through the process of degassing using Argon. Improvement of anaerobic conditions and increased reaction time should show an increase of percent yield.

3B    UNC 215  
Moderator: Amy France

---

### **Marcena Sanchez & Kennedy Bee**

Mentor: Amy France

### **Respiratory Therapy Case study**

Students in the Respiratory Therapy program regularly respond to case studies each semester. This group will be presenting a case study of a 70 year old female, admitted to the hospital for shortness of breath. She has underlying problems of cancer, fluid in the chest, and lung collapse. They will discuss a treatment plan they have developed and focus on patient conditions, teaching those in attendance about various processes of the disease.

3C    TED 124  
Moderator: Kim Cassidy

---

### **Darbie Jenkins**

Mentor: Kejing Liu

### **Increasing Oral Segmenting in Phonemic Awareness through Active Participation Intervention**

This presentation will explore active participation interventions in phonemic awareness and oral segmenting. The presenter will also discuss the question on whether or not such interventions correlate with a child's success in oral segmenting.

### **Erin Brammer**

Mentor: Keijing Liu

### **Increasing Reading Levels with Various Forms of Intervention**

In this study, the primary researcher will look at increasing reading levels with various forms of intervention. This presentation will start by looking at some of the causes of low reading levels. Then, the presentation will go into depth about the various forms of intervention that will be implemented. Next, the presentation will go into detail about how the forms of intervention were incorporated throughout the course of the study. Finally, the primary researcher will wrap up the presentation.

### **Monica Colley**

Mentor: Keijing Liu

### **Differentiated Instruction in Elementary Response to Intervention Groups**

This presentation will verify whether there is a significance between differentiated instruction in (reading) response to intervention (RTI) groups and student achievement. Specifically, the presenter will attempt to identify the influence of such a connection in struggling readers in an elementary classroom. We will dive into a variety of differentiated teaching strategies and how to apply these teaching strategies to RTI groups of all subjects, with an emphasis on reading. Higher fluency scores and interest levels will be anticipated with the application of differentiated instruction in elementary RTI groups

## **Mallory Messer**

Mentor: Kejing Liu

### **Pedagogical Approaches and Motivation**

This presentation will discuss a study completed in a third grade classroom to determine which types of pedagogical approaches (teaching techniques) are more effective in increasing student motivation. The study was intended to raise motivation in students, but to also determine if there is a correlation between motivation and student grades. Throughout the course of two nine-week intervals, assignment grades and motivation surveys were collected. This information helped the primary researcher determine a correlation.

## **Felicia Jennings**

Mentor: Kejing Liu

### **Does Project Based Learning Affect Student Focus?**

This action research project was designed to focus on student motivation and focus in the classroom. As the primary researcher, I wanted to see if changing the instruction style in the classroom to project based learning would help my students become more engaged and motivated to learn.

## **Chelsea Rice**

Mentor: Kejing Liu

### **Does Confidence Effect Motivation?**

The purpose of this study is to determine how confidence effects motivation in a Kindergarten class. Chapters One, Two, and Three will be presented. Based on my observations, the students in this class lacked the confidence to face a challenge or feel as though their work was good enough. In the presentation, I will review the baseline data that I collected using the smiley face survey by Sam Krueger, discuss the intervention and self-confidence building activities that will be put into place, and discuss the data collection results up to the point of the celebration of scholarship.

### **Kaylie Ruckel**

Mentor: Kejing Liu

#### **Sight Word Intervention**

This presentation shows the efforts taken for sight word intervention in a kindergarten class room. This includes pulling students to work on letters, letter sounds, and sight word recognition. The purpose of this study is to provide teachers and parents with strategies they can use in any setting to help with early reading development. The two strategies being researched are basic flash cards and a flash card repetition game.

### **Bridgette Scaggs**

Mentor: Kejing Liu

#### **Word Recognition Action Research**

This action research topic is studying three different word recognition strategies with a group of kindergarten students. The study is identifying strengths and weaknesses with the strategies, and which strategies had better results. The data was collected over a 10 week period.

### **Abdulrazzaq Alanazi**

Mentor: Gay Lynn Shipley

#### **Motivational Strategies in Language Instruction**

In the context of foreign language classroom teaching, this study will provide a specific overview of the self-regulated learning and language learning strategies along with other relevant concepts and theories. Various parties have gained interest in motivational approaches in language instruction learning such as the involvement of government, educational institutions, and foundations in setting up various program.

## **SESSION 4: 3:00 – 3:50**

4A UNC 214  
Moderator: Linda Hunt

---

### **Garett Blair**

Mentor: Aaron Bruewer

#### **The Effect of Classroom Discussion on Student Achievement**

This presentation will discuss research completed on the topic of Classroom Discussion. The elements of Classroom Discussion that will be discussed are different educational strategies, class management, and student motivation.

### **Tyler Edler, Alexandria Hatfield, & Cori Conley**

Mentor: Aaron Brewer

#### **Improving the Modern Classroom**

This presentation outlines 3 proposals for research in which we suggest ways to improve today classroom environments. Topics will include motivation, homework, and classroom management. This presentation, presents the first 3 chapter of the action research plan in order to encourage academic involvement from these findings.

### **Dakota Sparks**

Mentor: Aaron Bruewer

#### **Student Engagement**

I will be presenting my Action Research Project where I used different teaching strategies in my student teaching classroom to see if they would impact how engaged my students felt. I also tracked students' engagement levels to see if their engagement had a correlation to their academic achievement.

4B UNC 215  
Moderator: Amy France

---

### **Emily Fulks & Cody Charles**

Mentor: Amy France

#### **Respiratory Therapy Case study**

Students in the Respiratory Therapy program regularly respond to case studies each semester. This group will presenting an overview of case study on a patient that has been been intubated and extubated several times over short period, all being different reasons. They will discuss a treatment plan they have developed and focus on patient conditions, teaching those in attendance about various processes of the disease.

## **Veronica Hayslip**

Mentor: Kejing Liu

### **Improving student handwriting in the classroom**

This study focuses on strategies to improve handwriting in the classroom. The presentation will review chapters 1-3, which discuss the difficulties I observed in the classroom, the strategies that had been implemented, and the interventions that I plan to implement to improve handwriting in the classroom.

## **Kourtney Arnold**

Mentor: Kejing Liu

### **Effects of Music and Movement on Classroom Behavior**

Many researchers have recognized that exercise and music are beneficial for children's physical health, but do these factors influence students' classroom behavior? In this study, the primary researcher plays music and movement songs for a kindergarten classroom and monitors their behavior throughout the day. The class will participate in music and movement activities every other day and their behavior will be recorded every single day. The data will be analyzed to see if the students had better behavior on days that they participated in music and movement activities.

## **Hannah Price**

Mentor: Kejing Liu

### **The Effects of Integrated Movement and Physical Activity on Students' Comprehension and Behavior**

It is recommended that students participate in physical activity and movement for a minimum of one hour each day. Research has also shown that physical activity (recess, gym class, etc.) and incorporating large body movement into the classroom improves students' comprehension, focus, and behavior. This presentation will discuss steps that could be taken in order to evaluate the effects of physical activity and incorporating large body movements into instruction on student comprehension, focus, and behavior.

## **Lauren Rhoads**

Mentor: Kejing Liu

### **Behaviors of the Classroom**

The researcher has been studying different students in their classroom and looking into ways to work with students who have emotional breakdowns, behavior out burst and students who are not able to sit still during a teaching. The researcher has found, different techniques that work for students, but also how the researcher can assist other students in the future.

## **Sara Campbell**

Mentor: Kejing Liu

### **Improving Emotional Intelligence in Kindergarten Students**

This presentation gives an overview of a research project conducted for Senior Capstone. Primarily, it will focus on the Principal Researcher's reasons for conducting the study, their research design and methodology, as well as their review of relevant literature. The primary aim of the study is to raise the emotional intelligence of eleven participating kindergarten students. The presentation will also cover preliminary research findings from the study.

## **Maria Allison**

Mentor: Scotty Thompson

### **Discipline and Management Strategies in The Classroom**

This presentation will discuss the challenges teachers face in the classroom regarding misbehaviors. Dealing with multiple misbehavior issues leads to a high increase in teacher burn out, distracts students willing to learn and focus, and hurts the classroom environment. This presentation will address the issues in the classroom on how misbehaviors are addressed by recommending good practices to use for decreasing misbehaviors in the classroom. Literature has been reviewed and it suggests having strong classroom management skills decreases misbehavior. I will present strategies that improve the classroom environment and proper ways to handle discipline.

## **Hayley Venturino**

Mentor: Kejing Liu

### **Benefits of Journaling in an ECE Classroom**

The purpose of this study is to discover the benefits of daily journaling in an ECE classroom. The study will be a self contained study where the participating students will journal during the last twenty minutes of the school day. The results will be garnered by measuring the students' assessment scores on two pre and post assessments. During the three weeks of daily journaling, the students will be given a different prompt to write on each day. Some days will have open ended prompts, while some are more constructed. I will not be assisting the students in the spelling of words during the journaling process. The students will be instructed to sound out words that they do not know.

## **Hadyn Schmidt**

Mentor: Kejing Liu

### **A study on promoting conversation, speaking, and listening skills in a controlled setting: Using Guidelines to build meaningful classroom discussions**

The purpose of this study is to explore the effectiveness of two types of discussion- based learning in regards to student learning, and student and teacher preference in a primary classroom. These two methods are structured vs. unstructured. During the structured discussion, students will be expected to follow a list of rules and guidelines that govern the discussion. During the unstructured discussion students are able to answering and talk freely. This study will determine which method is most effective and helpful for student learning and success, as well as which method students and teachers prefer to enhance learning within the classroom.

## **Mykalley Detty**

Mentor: Kejing Liu

### **Does technology integration have a positive impact on students' attitudes towards learning?**

This study is designed to see if technology integration has a positive impact on students' attitudes towards learning. Technology will be implemented into the classroom periodically. Each time, after we use some type of technology, a survey will be given to all the students. The survey will ask the students if they enjoyed using this technology, somewhat enjoyed the technology, or did not enjoy the technology at all. Survey answers will be documented anonymously, and kept confidential. The purpose of this study is to see if students are actually enjoying the technology society is pushing up to implement into the classroom.

### **Allison Higgins**

Mentor: Kyle Vick

#### **The Effects of Mimicry of Self-Efficacy**

The purpose of this project is to research the effects of mimicking on the mimicker's self-efficacy, or the belief that he can succeed. In this project their self-efficacy would be measured in relation to the act they are mimicking.

### **Melissa Ashton & Adrienne Carver**

Mentor: Scotty Thompson

#### **Research Based Best Practices in a 9th Grade English Language Arts Classroom**

This presentation will be the research findings of two pre-service educators in their 9th grade field placements. One presentation focuses on the best practice for engagement during read alouds. The second pre-service teacher's presentation is an interpretive self-assessment of the importance of self-efficacy in pre-service teacher effectiveness in a 9th grade classroom.

### **Bailey Horsley**

Mentor: Leila Lomashvili

#### **The Jaws of Justice: The Dog behind the Teeth**

In this research report, the life and dangers our K-9 officers are facing on a daily basis are explored through the interviews with the human officer, scholarly research, and video material associated with the training of these smart creatures. It shows how the specific species of dogs are used for a variety of jobs not only in law enforcement but medical field as well. Besides the above points, the history of K-9 use in European countries and then in America is discussed as a background and dogs' training, pairing with a human officer, bonding, in-field experiences, and off-duty responsibilities are all woven together in a very interesting and intriguing way to create a strong argument about the psychological nature of these species. Interestingly, the theoretical research is interleaved with the excerpts from an interview (empirical support) with the police officer who is paired with the K-9 officer. Must see presentation!

## **Trustees' Session: 4:00 – 6:00**

### **Trustees' Award**

LIB 204

Moderator: Mistie Spicer

---

### **Autumn Hodge**

Mentor: Kyle Vick

### **Emotional Intelligence and Auditory Stimuli**

This study will look at the neural response of an auditory stimulus, seeing if this can lead to an empathetic response like that of emotional intelligence. This is a follow up study; the sound stimuli has changed from object noises, to man-made sounds. These neural responses can be applied to video game design and how we react to the different stimuli in video game.

### **Sarah Benner & Lana Percell**

Mentor: Kyle Vick

### **Brain Responses of Women to Erotic Imagery**

In our study we will be examining in which brain region women process erotic imagery. We are basing our study off a previous study that looked at just heterosexual men. This study however, said nothing about how women process these images. We used 15-20 females of college age and using the electroencephalogram to collect data on. We are conducting this study as a participant blind study so they can't knowingly affect the results. The consent form however, does warn them that they will be viewing images that contain nudity. We are masking the experiment as a study to how the brain processes words versus images. We will display images in the four categories: faces, erotica, words, and tools. The data collected from these women will give us an insight into the female brain to see if they process erotic images like their male counterparts or not.

### **Savannah Nelson, Ashlyn Cassidy & Alannah Bihl**

Mentor: Brian Richards

### **Lifelab**

Lifelab is a website created by students and faculty of SSU. It is based on prior research that suggests that well-being can be increased by small changes in daily habits. Its purpose is to measure whether activities that fall within particular categories in an online setting increase well-being. Lifelab's four categories of inquiry are transcendental, social, recreational, and personal growth. Researchers are also looking at how levels of motivation, interest, and social acceptance factor into the results. The sample of participants is made up of SSU students. This project began in the spring semester of 2017 and will continue to evolve after the

current group of student researchers graduate. The website programming portion of Lifelab was funded by Shawnee Student Research Experience.

### **Chelsi Wilson, Allison Gineman, Alexis Overton, & Christopher Andrew Adams**

Mentor: Christine Raber

### **A Systematic Program Evaluation of an Innovative Community Safety Initiative: The Senior Home Information Program**

Presentation will discuss our research and findings of our study. The major aim of this study is to fully describe the Senior Home Information Program which is currently offered in Ross and Scioto counties in Ohio, including its outcomes for participants, occupational therapists, and team members. The completion of a systematic program evaluation assesses the programs' strengths, areas for improvement, and provides data for future growth and development of this innovative community based safety initiative for older adults in southern Ohio.

### **Ronald Emmons & Dylan Carpenter**

Mentor: Daniel Finnen

### **Microwave-Assisted Synthesis of Polybenzimidazoles for Use as Analytical Sensors**

Benzimidazoles are a diverse family of nitrogen containing heterocyclic compounds that are found in many naturally-occurring biomolecules, pharmaceuticals, and many other products. Most common benzimidazole synthesis involves the condensation of a carbonyl containing compounds with o-phenylenediamine; however, these synthetic methods require long reaction times involving high temperature refluxes and cumbersome workups. This research developed a simpler synthetic procedure with shorter reaction times by using polyaminopolycarboxylate carbonyls, a small pressure vessel, conventional microwave oven, and boric acid catalyst. Reaction times were reduced from the typical 24-hour reflux to 1-hour or less using the microwave on low power and the desired product was easily isolated. This presentation will focus on the current investigations involving the optical properties of the polybenzimidazoles DTPB, TTHB, and others including the UV-Vis and fluorescence spectroscopy under both acidic and basic conditions, as well as with both cations and anions.

## **Humanities Session: 4:00 – 6:00**

**Humanities Award**

LIB 207

Moderator: Janet Feight

---

### **Anna DeHart**

Mentor: Pablo Salinas

#### **Marrying the Church: How Maria Luisa Bemberg Fought Marianismo Through Film**

In this presentation, I argue that Argentine director Maria Luisa Bemberg uses film to challenge the values of Marianismo engrained in Latin American society during the time of her films' productions. Through the analysis of formal elements and the use of the Bechdel test throughout *Camila*, (1984) and *Yo, la peor de todas* (1990), I prove that Bemberg's stories portray Latin American women's fight for equality toward the patriarchal societies where both protagonists lived. The use of camera angles and color in the rain scene, and sound and mise-en-scene in the scenes with church bells will convey imagery of natural and cultural obstacles in each movie. In order to understand the type of women living and fighting these difficulties, I will investigate the importance of the Bechdel test in determining how much these films challenge the patriarchal society in which the stories are set and the conventions of commercial film.

### **Brent Rowland**

Mentor: Brian J. Richards

#### **Implications of Philosophical Perspectives for Moral Reasoning**

People differ in their philosophical perspectives when making moral judgments. Two common perspectives are moral relativism and religious perspectives. The present study found that philosophical perspectives were associated with filtering questions about right and wrong through moral foundations differently. These results have implications for moral reasoning.

### **Kaleb Burchett**

Mentor: Andrew L. Feight

#### **Williams Manufacturing Company: Portsmouth, Ohio's Final Shoe Factory**

This presentation focuses on the final years of Williams Manufacturing Company. Williams' was the final shoe factory to shut down in the area, thus marking the end of Portsmouth, Ohio's once great industry.

## **THURSDAY ORAL PRESENTATIONS**

### **SESSION 5: 9:00 – 9:50**

5A UNC 214  
Moderator: Adam Miller

---

#### **Marwen Moslah**

Mentor: David Deacon

#### **Computer Vision Calibration Application Designated for Industrial Image Processing Test**

A computer vision calibration application developed with the National Instruments environment via C++ language. This application can allow engineers in the company of my home country in which I had my senior internship to detect anomalies for the screens of modems that they produce. These anomalies covers backlight intensity of these screens, dead pixels, RGB color values and other image processing tests. As consequence, instead of having a manual testing for the screens, thanks to this application, the test process for these screen became automated, minimising the intervention of those engineers, and ensuring more efficiency and reliability by minimising the test time.

#### **Corbin Stockham & Clifton Ross**

Mentor: Adam Miller

#### **3D Printing & Automation**

This presentation will discuss the development of one of the first functioning 3D printed robot end-of-arm-tool systems as well as what the future may hold for this manufacturing process in regards to the automation industry.

5B UNC 215  
Moderator: Margaret Lehman

---

### **Ibrahim Alhutaylah**

Mentor: Gay Lynn Shipley

### **The Role of Parents in Increasing the Educational Attainment of Their Learning Disabled Children**

The purpose of the study is to identify ways to get parents of disabled children to become more involved in their child's education.

### **Faisal Almuqati**

Mentor: Gay Lynn Shipley

### **The Effectiveness of Communication Skills Among Students with Learning Disability in Improving their Scholarship in Saudi Arabia**

This research aims to investigate the effectiveness of communication skills among students with learning disabilities in two of elementary schools in the city of Taif, Saudi Arabia on enhancing the academic performances from second through sixth grades

5C LIB 244  
Moderator: Virginia Pinson

---

### **Courtney Kirby, Cody Henderson & Leslie Mingee**

Mentor: Virginia Pinson

### **Occupational Insight: A Closer Look at Practicum and Internship Experiences in Acute Healthcare Administration**

Acute Healthcare Administration students describe and discuss their professional experiences and observations during Acute Care Practicum and Internships. Discussion includes observation of various leadership roles, student participation in departmental activities, and exploring the unique culture of healthcare organizations.

### **Caleb Marsh, Dustin Hines, & Jessie Stewart**

Mentor: Kimberly Inman

### **Investigation of Cellular Mechanisms Underlying Diabetes-Associated Birth Defects**

Upwards of seventy-five percent of congenital defects remain unidentified in causation. Of the known causative agents, diabetes is one of the most prominent instigators of birth defects. Our purpose is to explore the effects of an uncontrolled glucose environment on embryogenesis using *Gallus gallus domesticus* as our model organism. In our preliminary study, we developed a working model in which treatment targeted development during late gastrulation stages, resulting in disruption of proper embryogenesis. We observed hindbrain malformation, neural tube deformity, and caudal regression with an incidence of approximately 35% compared to uninjected and saline-injected controls. These defects are consistent with disruption of proper formation of the neural tube. Our current studies will investigate the underlying mechanism of these defects to determine if apoptosis (programmed cell death) plays a role in the embryonic defects we have observed.

### **Katherine Spencer & Olivia Thoroughman**

Mentor: Eugene Burns

### **Carriage of Group A Streptococcus Among SSU Students**

*Streptococcus pyogenes*, the only member of Lancefield Group A, is an infectious bacterium that can cause severe invasive diseases, such as necrotizing fasciitis and the common strep throat. Some members of the population can transiently carry these bacteria and remain asymptomatic, but can still spread the disease to others. The purpose of this study is to determine the rate of carriage of Group A Streptococcus among Shawnee State University students which can be correlated with demographic information, such as age, gender, encounters with children, and race. Throat swabs collected from random student volunteers were plated on sheep's blood agar plates to isolate by hemolysis.  $\beta$ -hemolytic colonies from each sample were isolated. The isolated colonies were Gram and typed using a rapid latex agglutination method in order to confirm GAS colonies. Polymerase chain reactions were used to amplify specific emm genes present and determine the M type of the samples.

## **Jacob Ashton & Dakota Thornton**

Mentor: Tim Hamilton

### **Searching for Exoplanets Utilizing the Transit Method**

The universe holds countless marvels that merit investigation, from neighboring stars to the planets that orbit them. Our focus will be on exoplanets, that is, planets outside our solar system. However, exoplanets are extremely small in comparison to the stars they orbit, and they are hard to detect. We use the “transit method,” which looks for the eclipse of a star when its planet passes in front of it. We gather data on a target star through a DSLR camera attached to a mount that tracks the motion of the sky. After processing the data from the camera, we will be able to calculate a change in brightness of that target star and if there is an object orbiting it. Doing this will help map out the surrounding universe and give us a better understanding of our place within it.

## **Ronald Emmons**

Mentor: Erik Larson

### **A New Laboratory Method for Measuring the Dissolution Rates of Carbonate Rocks**

Observed denudation rates of carbonate rocks in the field do not always match the theoretical rates; this project attempts to reconcile these inconsistencies. A new method was developed to measure the dissolution rate of carbonates by submersing the carbonate rock sample in a beaker of H<sub>2</sub>CO<sub>3</sub> saturated water (through the addition of CO<sub>2</sub>), where conductivity was measured to record the release of ions from the dissolution process. Discrete water samples were also collected at regular intervals which were later analyzed for Ca<sup>2+</sup> concentration through atomic emission spectroscopy, allowing for a calibration between conductivity and Ca<sup>2+</sup> concentration to determine the true experimental dissolution rate. Experimental data from samples are still forthcoming; however, based on preliminary data, it does appear that the new experimental apparatus does work – the rocks are dissolving. In the future, this procedure will be applied to a host of other carbonate rocks to address real world problems.

## **Brittany Cordle**

Mentor: Erik Larson

### **Petrographic Analysis of Geologic Formations in the Appalachian Basin: I-64, Lexington to Ashland, Kentucky.**

Eleven hand samples collected from outcrops between the cities of Lexington, Ky and Ashland, Ky along I-64 were cut and polished into thin sections. Petrographic analysis was conducted on these thin sections to determine the petrology of the sedimentary rocks (e.g. sandstone and limestone) which make up the western part of the Appalachian Basin. The eleven samples collected are representative of six formations, which are (in ascending stratigraphic order): Clays Ferry, Ashlock, Bull Fork, Drowning Creek, Ohio Shale, and Princess Formations. The data obtained from these petrographic analyses will aid in the future study of these formations of the Appalachian Basin.

**Session 6: 10:00 – 10:50**

6A UNC 214

Moderator: Catherine Bailey

---

**Amber Vaughn, Madison Woodard, Megan Castle, & Maddison Vanderpool**

Mentor: Catherine Bailey

**Evidence-Based Practice in Nursing: Skin Tears and Abrasions**

Due to side effects of medications and the fragile nature of the skin of the elderly patient, skin tears and abrasions do occur in the acute care setting. The presenters will discuss their scholarly endeavor to locate, review, and summarize the evidence regarding nursing management of skin tears and abrasions in the acute care setting and compare their findings with contemporary practice.

**Madison Thomas, Nicholas Adams, Jenna Liston, & Tashia Pruitt**

Mentor: Catherine Bailey

**Evidence-Based Practice in Nursing: Chlorhexidine Gluconate Baths**

Prevention of infection is a priority in the hospital setting. Keeping patients free from infection during hospitalization improves patient outcomes and can save millions of dollars in infection related expenses. Implementation of Chlorhexidine Gluconate (CHG) bathing is an infection prevention measure used for patients with central venous access lines and patients scheduled for specific surgical procedures. The presenters will discuss their scholarly endeavor to locate, review, and summarize the evidence regarding the use of CHG bathing in the hospital setting and compare their findings with contemporary practice.

**Megan Jones, Alexis Coriell, Adam Newman, & Sarah Fife**

Mentor: Catherine Bailey

**Evidence-Based Practice in Nursing: Intravenous Therapy**

Evidence-based nursing care provides the patient with care that is based on current evidence, includes the perspective of the patient, and considers the clinical expertise of the nurse. Presenters will discuss their scholarly endeavor to locate, review, and summarize the evidence regarding nursing management of intravenous (IV) therapy in the hospital setting and compare their findings with contemporary practice.

6B UNC 215  
Moderator: Catherine Bailey

---

### **Alisha Shepherd, Blake Hildebrant, Herman Morgan, & Chandler Fowler**

Mentor: Catherine Bailey

#### **Evidence-Based Practice in Nursing: Prevention of Falls in the Acute Care Setting**

Preventing the hospitalized patient from experiencing a fall is of critical importance. This presentation examines the best practice recommendations to prevent a patient fall occurrence while in the acute care setting. Presenters will discuss their scholarly endeavor to locate, review, and summarize the evidence regarding prevention of falls and compare their findings with contemporary practice.

### **Kalyn Ehrhart, Kara Crabtree, Sammantha Jenkins, & Amanda Hartley**

Mentor: Catherine Bailey

#### **Evidence-Based Recommendations for GI Intubation**

Evidence-based nursing care provides the patient with care that is based on current evidence, includes the perspective of the patient, and considers the clinical expertise of the nurse. Presenters will discuss their scholarly endeavor to locate, review, and summarize the evi

6C LIB 204  
Moderator: Marc Scott

---

### **Andrew French & Matt Green**

Mentor: Jason Witherell

#### **Pressure Washer VR**

Pressure Washer VR was the winning game idea pitched for the 2017 Student Game Design Contest at the Shawnee Conference. This presentation is geared toward showing off the progress that has been made toward the original idea since then and the direction that it is currently going. We will be showing off some of the unique mechanics and ideas behind the game as well as some actual game play.

### **Cory Smock**

Mentor: Elizabeth Wood

#### **Virtual Reality: The Next Frontier**

No great innovations ever came from fear of failure. Virtual reality must be a higher priority as it has the power to change a multitude of industries worldwide in how they operate. Virtual reality provides a means of experiencing realistic scenarios in a safe and adjustable setting. As a result, virtual reality serves as the perfect method of exposure therapy for the phobias and PTSD. Virtual reality is a prime candidate for training simulations in dangerous fields of work due to the immersive qualities of the technology. Virtual reality setups may be expensive for the average consumer; however, the cost has steadily been decreasing over the years while the quality has continued to improve. The graphical quality and computing power to run virtual reality simulations efficiently exists and is available on the market. Virtual reality is the next frontier.

## **Alyssa Lambert**

Mentor: Elizabeth Wood

### **Electroconvulsive Therapy: Inhumane Mental Health Treatment**

A look into the research done on electroconvulsive therapy, an age old treatment for illness' such as schizophrenia, major depressive disorder, and bipolar disorder, to prove why it is an inhumane treatment when modern medicine/therapies have more effective treatment options.

## **Whitney Berryman**

Mentor: Sarah Boehle

### **Where Did All the Old People Go?**

When most people hear the word "nursing home" they think of a place just for elderly who can no longer care for themselves at home and just a step down from the hospital. That it is a place that you go to when you are ready to die but this isn't the case. Even though the nursing home is still a place for the elderly to receive care, they are not the only age group who use it's services. In the last 15 years or so, nursing homes have turned into a place that offers not only long-term care but short-term rehabilitation services also. The elderly are not the only one's who use these services but younger and middle aged adults do also. In this presentation, we will discuss the reason's for this change and why not just old people are using nursing homes anymore.

## **Mackenzie Riley**

Mentor: Elizabeth Wood

### **Occupational Therapy: A Necessity in Patient Care**

Occupational therapy is a therapeutic service that many individuals can benefit from. Occupational therapists(OTs) can help individuals of all ages in a multitude of settings, including both physically and mentally. Because of the unique qualities, creativity, and versatility that OTs exemplify, they are a necessary part of therapy services. Using the skill of divergent thinking, OTs uniqueness is apparent in treating disabilities holistically in all different settings. By using creativity, OTs can tailor all interventions to give clients the best experience. Because occupation is not limited to only physical capabilities, versatile intervention is important for therapy clients. The knowledge of OTs role in not only therapy services, but also healthcare as a whole, gives the profession the distinction it should have in collaborative healthcare today. Understanding the broad range of qualities, individuals, and settings that occupational therapists can service affirms why OTs are important today.