**2019 Belmont Undergraduate Research Symposium**

# Psychological Science

Moderator: Jessica Bilbrey-Worthington, Ph.D.

**April 11, 2019, 5:30-7:45 p.m.**
**JAAC 5005**

5:30 p.m. – 5:45 p.m.

## The Effects of Mindful Coloring on State Anxiety

Michaelia Savage, Eman Durrani, Jessi Kocina, Tracy Suppes, Cassie Tipton, & Thomas Dahlhauser.
Faculty Advisor: Pete Giordano, Ph.D.

Previous research has investigated the effects of mindful coloring on test anxiety in adolescents. Findings of this research indicated that a mandala coloring task was the most effective in reducing anxiety (Carsley & Heath, 2018). The authors of the present study examined whether brief mindful coloring can decrease state anxiety. We hypothesized that participants who experience a guided meditation with a mandala coloring condition will decrease state anxiety. As a manipulation of mindfulness, participants were randomly assigned to a mindful mandala coloring condition, a mindless mandala coloring condition, or to a mandala only coloring condition. Participants then completed portions of the State Trait Anxiety Inventory to measure state anxiety (Spielberger, Gorsuch, Lushene, Vagg, & Jacobs, 1983), the Mindfulness Attention Awareness Scale to assess state mindfulness as a manipulation check (Brown & Ryan, 2003), and the Five Facet Mindfulness Questionnaire (Baer et al., 2006). We expect that participants who experience mindful mandala coloring will show the least amount of state anxiety.

5:45 p.m. – 6:00 p.m.

## Brief, Moderate Physical Activity and Its Impact on Short-Term Memory

Alexandria Davidoff, Elise Clodfelter, Thomas Dahlhauser & Jordan Chawan
Faculty Advisor: Linda Jones, Ph.D.

In this sedentary focused society, there is an increase of time spent sitting rather than standing and moving. This increase of sitting can take the form of desk time or the reduction of recess and physical activity. The amount of time that people are sitting is becoming increasingly important in regard to cognitive ability in particular- memory. Previous research has investigated the effects of physical activity on memory. Findings of this research have suggested that memory might benefit from physical activity (Stroth et al., 2012). In the current study, participants were randomly assigned to the experimental condition (brief, moderate exercise) or the control condition (brief, neutral nature video). In both groups, participants completed a pre-intervention memory task and then either engaged in their respective intervention. The participants then

completed a post-intervention memory task. The purpose of this study was to investigate whether brief, moderate physical activity has an impact on one's ability to perform on a word-recall memory test. We hypothesized that participants in the physical activity group will score higher on the post memory word recall test compared to those participants who are in the video watching group.

6:00 p.m. – 6:15 p.m.

## The Effect of Color and Arousal on Memory

Monika Antunovic, Hannah Stalnaker, Alyssa Peacock, and Alice Tiec
Faculty Advisor: Lonnie Yandell, Ph.D.

Humans' ability to retain information from stimuli is influenced by attention (Sussman, 2013). Color is one variable that can affect humans' attention. Sanocki and Sulman found that color relations affect one's ability to perceive and retain information from the stimuli (2011). Color schemes that were harmonious were found to promote attention as well as memory. Another variable that has been associated with task–related attention is arousal. Varying levels of visual arousal have been found, by Sussman, to promote or inhibit attention (2013). The present study hypothesizes that a harmonious color scheme paired with a low arousal visual stimulus will increase perception of the visual stimuli and lead to improved memory. A disharmonious color scheme paired with a high arousal visual stimulus will decrease perception of the visual stimuli and affect memory. The neutral arousal visual stimulus will be the control for the two competing color schemes. A computer will present the 45 participants a high, neutral or low arousing with either a harmonious or disharmonious color scheme for 500 milliseconds. Participants will then complete a questionnaire regarding the details of the photos they viewed. We expect a decline in memory of the details for the high arousal visual stimulus with disharmonious color scheme compared to the other stimulus combinations.

6:15 p.m. – 6:30 p.m.

## Mindfulness and Its Impact on Change Blindness

Elise Clodfelter, Allyson Roberts, Christina Ayoub, Samuel Molli, Anjelika Aldredge & Dani Jackson
Faculty Advisor: Pete Giordano, Ph.D.

Tasks in our everyday life often require our focused attention. However, we often find ourselves mindlessly engaged in mundane tasks. Previous research has alluded to the idea that mindfulness training can aid in heightening one's awareness and attention to detail. In order to see the effects of mindfulness training on attention, we randomly assigned participants into either an experimental group that received a state mindfulness induction or a control group that did not receive any induction, in order to compare attention between the two. Attention was measured by participants watching videos where change blindness occurred and testing their attention to the changes by asking true or false questions about what changed. We hypothesize that individuals who experienced a mindfulness breathing exercise will experience enhanced attention.

6:30 p.m. - 6:45 p.m.

## Overall Physical Wellness and Self-Esteem

Samantha Foerke, Amelia Harris, Dani Jackson, Jaela Scaife
Faculty Advisor, Linda Jones, Ph.D

Previous research has investigated how the effects of overall physical well-being impact self esteem levels. Factors related to weight, height, and perception of one's self in comparison to others all play a role in emotional health, as indicated by a study conducted by Prabhu and D'Cunha (2018), which showed that individual levels of self esteem may be influenced by factors such as body mass index (BMI), physical activity, perceived physical fitness, and body image. The results concluded that while each factor did not contribute to the quality of self-esteem equally, or substantially, having all four factors did provide evidence that having all factors present does show an effect. We hypothesized that lower levels of self-esteem will be present in response to high BMI ratings and lower levels of physical activity, perceived physical fitness, and body image. Undergraduate psychology students will be asked to complete four questionnaires, each containing a scale as it pertains to self-reported physical activity, self-esteem (Rosenberg Self Esteem Scale), perceived physical fitness, and body image. Afterwards, the participants' BMIs will be recorded and a multiple regression analysis will be performed to study the correlation between each of the individual variables. Results are predicted to indicate a significant trend among physical and emotional health.

6:45 p.m. – 7:00 p.m.

## The Effects of Written Emotional Words on Time Perception

Crystal Lemus, Amelia Harris, Marie Boutard, Mariah Meads
Faculty Advisor: Lonnie Yandell, Ph.D.

Temporal judgements, such as time perception, are subject to distortions. Emotional states play a crucial role in this discrimination process. The current study focused on the effects that various emotional states can have on time perception. This was tested by dividing 50 participants into three groups, each of which were randomly assigned to read either neutral, awe-invoking, and fear-invoking words. A dot stimulus was shown for 30 seconds both before and after reading the list of words and time judgements for both stimuli were recorded. Based on previous research, it was hypothesized that reading a neutral set of words would not affect time judgements, but reading calming or fearful based words would result in longer time judgements.

7:00 p.m. – 7:15 p.m.

## Child Perception of Parental Relationships and Levels of Rejection Sensitivity: Do These Perceptions Apply to Our Own Relationships?

Grace Burton, Heather Spradlin, Amelia Harris, & Olivia Woods
Faculty Advisor: Patrick Morse, Ph.D.

The relationship that exists between children and their parents has been considered an important piece of psychological development for the last several hundred years. Children who experience

loving, healthy relationships with their parents or guardians are statistically likely to have positive outcomes in adulthood, such as occupational and relational success. On the contrary, children who experience unhealthy and dysfunctional relationships with their parents and guardians face a higher likelihood of negative outcomes such as mental illness and difficulty maintaining relationships (Haan, Deković, den Akker, & Stoltz, 2013). This study examines the relationship an individual experiences with their parents, as well as that individual's perception of their parents' relationship with each other. We hypothesize that among participants that grew up with two parental figures, individuals who view their parents' relationship as strong will score lower in rejection sensitivity, higher in respect for potential romantic partners, and lower in emotional reactivity. Additionally, we hypothesize that males will score higher in rejection sensitivity, lower in respect for potential romantic partners, and higher in emotional reactivity compared to female counterparts.

7:15 p.m. – 7:30 p.m.

## Exploring the Relationship Between Biofeedback Response and Unhealthy Lifestyle Behaviors

Bailey Moore, Aleya Prasad, Tara Yarwais, Olivia Woods
Faculty Advisor: Linda Jones, Ph.D.

Biofeedback is the process in which electronic instruments measure biological responses, and the status of those responses becomes immediately available to the person using the machine, allowing the individual to alter physiological responses that may otherwise be involuntary. In Electroencephalographic (EEG) Biofeedback, individuals modify levels of brain activity, such as concentration, upon receiving feedback. Biofeedback has been used to improve performance, awareness, and concentration in participants who use it (Rijken et. al, 2016). Additionally, EEG biofeedback technology has been used as a tool to ease the symptoms in children with ADHD by enhancing concentration (Jiang et. al, 2002). There has been limited research into the extent to which different lifestyle behaviors affect an individual's ability to respond to information about his or her physiological functioning. The goal of this study was to explore the relationship between game performance and participants' sleep, diet, and exercise habits. We recruited participants from Belmont University's Intro to Psychology Class. The participants were asked to play MindFlex Duel, a game that captures and processes electrical signals from the cortex. The device records EEG activity and translates it such that variations in the players' concentration levels yield a score out of 420 points. The participants were then asked to complete a 5-point scale survey that measured their sleep, diet, and exercise habits. We then used this measure to correlated with how well they performed on the MindFlex game. It was hypothesized that (1) students with healthier eating habits will do better on the MindFlex Duel game than students with less healthy eating habits, (2) students who receive adequate sleep (7-9 hours) will do better on MindFlex Duel than students who don't, and (3) students who get at least 150 minutes of moderate exercise a week will perform better on the Mindflex Duel game than those who get less exercise.

7:30 p.m. – 7:45 p.m.

## Do Big 5 Personality Factors Correlate with Mindfulness Meditation Ability?

Faizi Crofts, Ode Gyamfi, Ana Lucia Naranjo Fernandez Del Los Ramos, Precious Nichols.
Faculty Advisor: Linda Jones, Ph.D.

While research on mindfulness meditation has largely focused on group factors, there has been research examining individual differences in personality as it relates to mindfulness meditation ability (de Vibe et al. 2015). A positive correlation with mindfulness and conscientiousness was discovered. Participants took part in a meditation session using the Muse™ meditation software as a biometric measure in order to clarify and expand previous, survey-based research. Participants completed the meditation session and took the Big 5 personality survey. This study hypothesized that there would be a positive relationship between mindfulness meditation ability and the personality construct of conscientiousness.

**2019 Belmont Undergraduate Research Symposium**

# Psychological Science

Moderator: Lonnie Yandell, Ph.D.

**April 11, 2019, 5:30-7:45 p.m.**
**JAAC 5008**

5:30 p.m. – 5:45 p.m.

## The Effect of Academic Stress, Physical Stress, and Mental Stress has on Unhealthy Food Choices Among College Students

Ashlyn Davis, Garrott Iannelli, Allison Svoboda, Victor Hamilton
Faculty Advisor: Linda Jones, Ph.D.

Many negative human health behaviors are due to stress whether it is physical, academic, or mental. One study tested the relationship between stress, dietary restraint, and food preference, it was shown that high stress made participants prefer high fat and sweet food (Habhab, Sheldon, and Loeb, 2008). Another study researched the relationship between eating disorders and stress among medical undergraduate students which showed that individuals who are more stressed are more likely to eat sweet foods than those who are less stressed (Kandiah, Yake, Jones, & Meyer, 2006). Therefore, it is expected that 1) those who experience stress will choose unhealthy food choices rather than healthy food choices and 2) those who experience physical and academic stress will exhibit the highest amount of stress followed by the mental stress and control or no stress group. Undergraduate students ranging in ages 18 to 61 years enrolled at Belmont University will be randomly assigned to either a control group, academic stress, physical stress, or a mental arithmetic stress group. The participants' will then choose 3 fake foods. An ANOVA is expected to show that participants who experienced academic and physical stress will show higher stress levels and will choose more unhealthy foods compared to the mental arithmetic and control stress.

5:45 p.m. – 6:00 p.m.

## The Effect of Gesture on Word Memory

Marlow Amick, Ashlyn Davis, Meredith Maines, Camren Werner
Faculty Advisor: Lonnie Yandell, Ph.D.

Gestures in everyday interactions are commonplace, often subconscious, and may seem inconsequential. However, gestures could actually be a useful tool in improving our communication skills. Previous research suggests that gestures improve language comprehension and understanding. Based on this prior research, we designed our current study to directly test the effect of gesture on memory. The study sought to find out if gesture improves the recognition of words recently read. Fifty undergraduate students from introductory psychology courses were

presented 18 words, 9 of which were accompanied by gesture GIFs created by researchers. These gesture GIF were acted out against a white background and paired with a word that described the gesture. The additional 9 words were without the gesture GIFs. After viewing the words, participants were shown one word at a time asked if the word had been presented in the previous section and had the option to answer "yes" or "no". We hypothesize that participants' memory will be better when words are accompanied with gestures, versus words alone.

6:00 p.m. – 6:15 p.m.

## The Effects of Adverse Stimuli and Backgrounds on Depth Perception

Aditi Buch, Gabrielle Gonzalez, Garrott Iannelli, Jonathan St Louis
Faculty Advisor: Lonnie Yandell, Ph.D.

It is human nature to avoid danger, and we tend to exaggerate potential threats to adapt to our fear. One way this exaggeration may be accomplished is by perceiving the threatening stimuli as closer than a non-threatening stimuli. This study seeks to explore depth perception for fearful stimuli versus amusing stimuli. Approximately 50 participants were-presented with a slideshow with twenty four different picture stimuli mounted on different picture backgrounds. Participants rated how close or far away the stimuli seemed to them. Both the picture stimuli and the backgrounds were either fearful pictures or amusing pictures drawn from the International Affective Picture System (IAPS; Lang, Bradley, & Cuthbert, 1999). We expect that the fearful stimuli mounted on a fearful background would be perceived as being closer than the amusing stimuli mounted on an amusing background, suggesting that we perceive a threatening stimuli as closer than a non-threatening stimuli.

6:15 p.m. -6:30 p.m.

## Predicting GPA with University and Major Fit

Kendyl Matthews, Meredith Maines, Emily Scruggs, Alicia Veltri
Faculty Advisor: Patrick Morse, Ph.D.

Person-environment fit is a growing area of research related to people's compatibility between their personality and the "personality" of their environment. Currently, the primary focus of the literature is city settings, although the findings may translate to other settings. The concept of person-environment fit might also affect young students on a college campus. This is important to investigate, as prior research demonstrates that the match between people's characteristics and the characteristics of their environment can predict a number of positive outcomes (Bleidorn et al., 2016). For our study, fifty participants were selected from Belmont's Introduction to Psychology students. We created and administered a survey using Qualtrics, which measured participants' Big 5 personality traits, academic major satisfaction, and GPA. From the measurement of Big 5 traits, we aggregated all participant answers to create the "Belmont average" of personality. We sought to compare individual participants' personality traits to the overall average we compiled, allowing us to assess the relationships between "fit" at Belmont, academic major satisfaction, and corresponding GPA. We anticipate that the stronger a person's "fit" with Belmont is, the higher his/her cumulative GPA will be. Additionally, we hypothesize that the more satisfied a person is in an academic major, the higher his/her major GPA will be.

This research has implications for people's choice of higher education and academic major, as each may have influence on successful academic outcomes.

6:30 p.m. – 6:45 p.m.

## The Effects of a Short-term Mindfulness Intervention on Hand Grip Duration and Discomfort

Charlie McDonald, Grace Burton, Libby Day, Nathan Glyder, Maddie Rockouski & Lenn Spurlock
Faculty Advisor: Pete Giordano, Ph.D.

Whether it be a trip to the gym, moving furniture into a new home, or opting to take the stairs at work, instances requiring some form of physical endurance arise in our everyday lives. Understanding how to best supplement this endurance during times of physical exertion can be of great value in the completion of daily tasks. Researchers have investigated numerous ways in which to improve physical endurance, with many focusing on the concept of mindfulness as a means of enhancement (Friese, Messner, & Schaffner, 2012; Liu et al., 2013; Stocker, Englert, & Seiler, 2018). Some have even examined the benefits of short-term mindfulness interventions on physical endurance (Bergomi et al., 2013; Forsyth, & Hayes, 2014). In the current study, we compared the effects of a brief mindfulness meditation exercise versus a brief mind-wandering exercise on grip-duration. Participants were randomly assigned to either a mindfulness or mind-wandering condition wherein they would listen to a guided meditation that would either induce mindfulness or mind-wandering . After completing the guided meditation, participants completed a second grip-duration task where they were required to maintain between 20% and 25% of their maximum grip strength for as long as possible. Following this task, participants rated their subjective discomfort on a sliding scale, and then completed the Toronto Mindfulness Task to measure state mindfulness (Lau et al., 2006). We expect to find that participants in the mindfulness condition will exhibit a longer grip duration and less discomfort than participants in the mind-wandering condition.

6:45 p.m. – 7:00 p.m.

## Nutrition Knowledge and Perception of Recommended Serving Sizes in College Students

Kaylen Dotter, Ally Wallace, Lauren Oberman, Jess Ligon
Faculty Advisor: Linda Jones, Ph.D.

Growing portion sizes in the United States have contributed to a change in what Americans consider a "normal serving" of food. Previous research has analyzed college students and their perceptions of normative food serving sizes (Burger, K. S., Kern, M., & Coleman, K. J. 2007). Findings of this research indicate that repeated exposure to exaggerated food serving sizes results in a larger normative food portion perception and greater food consumption. The present study examines the relationship between college meal plans, living situation, and serving size perception. Participants were instructed to complete a general nutrition knowledge test, view a questionnaire of various servings of food products, and identify appropriate servings sizes. In addition, participants provided information on their current residential arrangement. It is

hypothesized that greater nutritional knowledge is associated with accurate predictions of serving size. It is also hypothesized that the participants who live on campus and have a meal plan will less accurately identify normative serving sizes.

7:00 p.m. – 7:15 p.m.

## Sense of Self and the Barnum Effect

Brayden Hunter, Mary Kathryn Parrott, Reed Priest, & Allison Svoboda
Faculty Advisor: Patrick Morse, Ph.D.

According to Synder et al. (1977), the Barnum Effect is a tendency for people to give their approval and acceptance of personality interpretations supposedly derived from the results of assessment procedures. Frequently seen in horoscopes, the Barnum Effect could represent a lack of self-knowledge because it involves an earnest belief in imprecise personality descriptions. Because of the importance to know thyself, the present study examined the Barnum Effect and two factors that may negatively or positively associated to it. Self-esteem was examined because having a clear, positive understanding of oneself may prevent falling for factitious descriptions of one's personality. Furthermore, need for validation was examined because the drive for external input may enable belief in external, factitious descriptions. To measure these constructs, participants received a battery of questionnaires and a Barnum Effect manipulation. Participants engaged a self-esteem measurement, a need for validation measurement, bogus personality/intelligence items, factitious descriptions of their personality (purportedly due to the previous bogus personality/intelligence items), and a Barnum Effect measurement evaluating to what degree participants agreed with the factitious descriptions of their personality. Researchers expect susceptibility to the Barnum Effect to be negatively related to self-esteem and positively related to need for validation. Results and implications of this study will be discussed.

7:15 p.m. – 7:30 p.m.

## Academic Motivations and Group Dynamics

Reed Priest
Faculty Advisor: Lonnie Yandell, Ph.D.

As the *why* behind behavior, motivation plays a pivotal role in any context. Particularly in academic environments, students are mainly motivated to either learn or to get a grade. Specific mindsets, such as believing that ability is either fixed or growable, might relate to such motivations because mindsets can typically extinguish or enable motivation. Furthermore, these motivations to learn or to get a grade might relate to student interest in a specific course.
To understand the relationships among these variables, participants completed a battery of questionnaires measuring general desires to learn or to get a grade, desires to learn or to get a grade in one specific course, a mindset measurement, and an academic interest scale for one specific course. Specific and general desires to learn are expected to be positively associated with growth mindsets and academic interest. Furthermore, desires to get a grade are predicted to be positively associated with fixed mindsets and academic disinterest. Implications of findings will be discussed.

7:30 p.m. – 7:45 p.m.

## Impact of Various Virtual Reality Experiences on Expression of Aggression

Mary Kathryn Parrott
Faculty Advisor: Patrick Morse, Ph.D.

A myriad of studies investigate the relationship between violent video games and aggression, however, more information is required on implications of other types of games and how this knowledge may be used clinically. Due to the trend in gaming towards virtual reality, the present study seeks to examine how peaceful versus aggressive virtual experiences may impact the expression of aggression. In order to study this, participants performed a minor aggression manipulation that involved listing pet peeves, and expression of aggression was measured using a derivative of the Taylor Aggression Paradigm (TAP). Participants entered either a peaceful or aggressive simulation and took the TAP derivative before and after the simulation. Changes in expression of aggression were analyzed. Researchers expect participants in the peaceful condition to exhibit a decrease in expression of aggression.

**2019 Belmont Undergraduate Research Symposium**

# Psychological Science

Moderator: Patrick Morse, Ph.D.

**April 11, 2019, 5:30-7:30 p.m.**
**JAAC 5010**

5:30 p.m. – 5:45 p.m.

## The Pattern Between Scanning a Nutrition Facts Label and Eating, Exercising, Sleeping Habits

Claire Botros, Brittany Kennett, Steven Spears, Christianna Ellison
Faculty Advisor: Linda Jones, PhD

J.A. Wolfson et al examined the student evaluation of nutrition labels using eye tracking equipment. These nutrition labels were manipulated to include the activity equivalent information (e.g., type of activity and amount of time it would take to burn off the calories from that food). The researchers discovered that the majority of the college students believed that the activity-equivalent information was helpful and trustworthy. The students who were trying to lose weight viewed this information frequently and longer. This suggests that health-conscious people tend to view nutrients with negative connotations more than other nutrients. The purpose of this study is to measure the relationship between a person's eating, sleeping, and exercising habits and the way in which they perceive nutrition labels. Participants were Belmont undergraduate students who were in introductory psychology courses. Participants were asked to take three surveys pertaining to their eating, sleeping, and exercising habits and were then asked to view ten nutrition label slides. Using an eye tracker, we evaluated three areas of interest on the nutrition labels. Specifically, we measured the amount of time looking at total fats, sugars, and sodium. It was the hypothesized is that participants who have a healthy lifestyle (based on eating, exercise, and sleeping habits) will look more frequently at fat, sugar, and sodium.

5:45 p.m. – 6:00 p.m.

## Religious Identity, Attendance Over Time, and Its Association with Personality Traits

Mary Kate Parmer, Meagan Winkle, Rachel Hutchings, & Christianna Ellison
Faculty Advisor: Patrick Morse, Ph.D.

Religion is something that everyone has a relationship to. It is also something that people have changing opinions about as they move throughout life. One transition that often reveals a change in a person is going off to college. You meet new people and hear new opinions outside the bubble of your hometown. This move, and a person's personality begins to shape the way they see and practice religion. There have been many studies that look at how personality is related to

religiosity and church attendance, specifically the facets of agreeableness and conscientiousness. This study utilized students from Belmont's introductory psychology course. They were given a Qualtrics survey that included three measures. Two religiosity measures were given to the participants twice: once for their habits before college and once for their time in college to assess their change score in religiosity. One personality measure was also used to assess their Big Five scores. We anticipate that those who stay in church will have higher agreeableness and conscientiousness scores and a lower neuroticism score, while those who leave will have lower agreeableness and conscientiousness and higher neuroticism. In conjunction, those who have not previously attended church, but now attend as a college student will have a higher agreeableness and conscientiousness score and a lower neuroticism score, while those who did not attend church and still do not will be lower in agreeableness and conscientiousness, and higher in neuroticism. Looking at this information is important in the conversation surrounding college students' development into well-adjusted adults. This study will help highlight the reasons religion is so prevalent in people's lives, and how the college years are so formative in the discovery of religious opinions.

6:00 p.m. – 6:15 p.m.

## Mindfulness and Gender Stereotypes

Taylor Mize, Jordan Hoffman, Cristina Feliciano, Steven Spears, Jess Ligon & Maddie Boerste
Faculty Advisor: Pete Giordano, PhD

Research suggests that mindfulness can reduce implicit stereotyping of gender and race (Burgess, Beach & Saha, 2017). As well, mindfulness can allow for more awareness of the present situation in which biases can be assessed before being assumed. There are four main components of mindfulness such as awareness, attention, focus on the present, and acceptance, in which persons can use these components to reduce mindless biases towards gender, race, age, and so on. (Kang, Gruber & Gray, 2013). Our study utilized a 2x2 mixed factorial design to assess the impact of both a state mindfulness (versus mindlessness) manipulation and the subject variable of trait mindfulness on implicit and explicit gender stereotyping. We hypothesized that participants who are high in trait mindfulness and who are exposed to a state mindfulness manipulation will show the lowest amount of implicit and explicit gender stereotyping, compared to those who are low on trait mindfulness and who are exposed to a mind wandering activity.

6:15 p.m. – 6:30 p.m.

## Does Self-Esteem Play a Role in Disordered Social Media Use and its Correlation with Narcissism?

Madelyn Boerste, Kelly Givens, Starling Crossan, & Benton McClintock
Faculty Advisor: Patrick Morse, Ph.D.

As technology and social media become more prominent, narcissistic traits tend to appear in the content of one's profile. The relationship between narcissism and social media has been researched to determine a correlational relationship, but little is known about what explains this

relationship. Being that social media is not going away anytime soon, understanding its effects, especially the negative ones, on our personality and behavior is necessary. This study gathered data from participants currently enrolled in an intro level Psychology course at Belmont University. Participants were asked to complete a Qualtrics survey developed to help researchers better understand students' levels of narcissism, self-esteem, social media 'addiction' levels, and social media usage. This study tested the hypothesis that self-esteem mediates the relationship between narcissism and social-media. A more definitive connection between social media, self-esteem, and narcissism would prompt further research into how to reduce disordered social media use and possibly how narcissism and self-esteem prompt this behavior or vise-versa.

6:30 p.m. – 6:45 p.m.

## The Effect of the Act of Coloring on Time Perception

Starling Crossan, Chloe Garbe, Heena Ismaili, and Anslee Lake
Faculty Advisor: Lonnie Yandell, Ph.D.

Previous research has suggested that the perception of time can be modulated by attention. In this study, the act of coloring is used to modulate attention. Fifty participants were randomly assigned to either a coloring or non-coloring group. Both groups were asked to listen to seven minutes of a history podcast. The coloring group was given additional instructions to fill outlined figures on prepared sheets with the color of their choosing while listening. After the podcast clip was over, participants were asked how long they thought the podcast had played and basic questions to test how attentive they were to the podcast's content. We predict that those in the coloring group will report perceiving the podcast as lasting shorter than those in the non-coloring group.

6:45 p.m. – 7:00 p.m.

## A Validation Study of the Belmont Measure of Barnum Susceptibility Level - Revised

Eason Taylor & Gracie Kelly
Faculty Advisor: Pete Giordano, Ph.D.

With personality tests on the rise, people may be more vulnerable to accepting overgeneralized and vague feedback about themselves and believing that it is true. This misinterpretation is called the Barnum effect. Despite past research on the Barnum effect, to our knowledge currently there are no empirically validated scales that measure someone's susceptibility to it. Previous research suggests that the Barnum effect may be related to magical ideation, paranormal beliefs, openness to experience, and hand dominance (Bryson, et al., 2009; Chauvin and Mullet, 2018; Christman, et al., 2008; Tobacyk, et al., 1988). The current study sought to verify the Belmont Measure of Barnum Susceptibility Level - Revised (BMBSL-R) by correlating participants' scores on this new measure with measures of the previously mentioned constructs. Participants were provided with generalized "bogus feedback" (allegedly based on their responses to a personality measure) and then completed a post-feedback questionnaire asking them to rate how much they felt this personality feedback applied to them. We hypothesized that the BMBSL-R would demonstrate internal reliability, and would demonstrate convergent validity by showing positive relationships

with magical ideation, paranormal beliefs, and openness to experience. We also hypothesized that mix-handed people would demonstrate greater susceptibility to the Barnum effect as compared to dominant-handed people.

7:00 p.m. – 7:15 p.m.

## Written All Over Your Face: The Effects Of Emotional Cueing On Ambiguous Facial Perception

Dani Jackson, Eason Taylor, Emilio Esquivel, and Sonee Markelova
Faculty Advisor: Lonnie Yandell, Ph.D.

Nonverbal social cues are an effective means of communication, but are subject to contextual factors impacting how they are perceived (Davis, Neta, Kim, Moran & Whalen, 2016). Additionally, research has shown that familiarity leads to positive perception of faces (Carr, Brady, & Winkielman, 2017). There is a gap in research regarding if and how negative emotions elicit similar responses. The present study hypothesizes that familiarity with a facially-expressed emotion will result in the perception of an ambiguous face as exhibiting that emotion. Around fifty participants watched slide shows of groups of 20 positive, 20 negative, and 20 mixed emotion facial pictures, presented in counterbalanced order, before rating their emotional perception of a neutral face after each group. It is expected that the negative condition will cue a negative perception of the neutral face, and the positive a more positive perception. This research has significant implications for understanding social-behavioral factors, such as social desirability and fitting in.

7:15 p.m. – 7:30 p.m.

## The Effects of Bio-Type and Physical Attractiveness on Online Dating Profile Likeability

Madeline Rockouski, Laila Karim, Elizabeth Hastey & Emilio Esquivel
Faculty Advisor: Patrick Morse, Ph.D.

The digital age is taking over as more aspects of our everyday lives are moving into technological advancement – including our relationships. Research suggests the importance of disclosing personal information (John, Barasz, & Norton, 2016; Toma, 2010) as well as the importance of physical attractiveness (McGloin & Denes, 2018; Peters & Salzieder, 2018) on the overall desirability of online dating profiles. Additionally, the link between humor and physical attractiveness in relation to likability has been well documented (McGloin & Denes, 2018; Tornquist & Chiappe, 2015). The current study considers the effects of bio-type and physical attractiveness on dating profile-likability. We asked 50 undergraduate psychology students to rate the overall likability of 12 simulated dating profiles, where each profile had a random combination of bio-type (informational, humorous, or blank) and level of physical attractiveness. (attractive, neutral, or unattractive). We hypothesized that (1) a main effect for bio-type would occur, such that profiles with informational bios would elicit greater likability than profiles with humorous or empty bios, and (2) there would be a main effect for physical attractiveness such

that more attractive photos would elicit greater profile-likability, regardless of bio-type. Additionally, we reasoned that a possible interaction between humorous bio-type and physical attractiveness may occur. Online dating has become increasingly popular in the last several years, and it is important that we adjust ourselves to fit this changing model. Particularly, it is of value to us to learn how to navigate online dating sites and applications, and how to best represent ourselves on these platforms.

**2019 Belmont Undergraduate Research Symposium**

# Psychological Science

**April 11, 2019, 5:30-7:30 p.m.**

**JAAC 4th Floor Atrium**

Psychological Science

## Sleep Deprivation and High-Fat Diet in Adolescence

Karina Glushchak

Faculty Advisor: Timothy Schoenfeld, Ph.D.

The adolescent period is critical for normal brain development. Abnormalities that may occur during the adolescent period can have a profound effect on brain structure and behavior into adulthood. Diet and sleep are two important aspects of life and their compounded impact has not been investigated in rodent models, especially long-term effects in behavior and brain structure. This study consisted of three groups: the control, the high-fat diet (HFD) and regular sleep cycle, and the HFD + light deprivation. The manipulations were implemented during the rodent adolescent period (4-8 weeks). After the manipulations, the rats recovered for six weeks. They were then tested using two memory tests: object recognition (dependent on perirhinal cortex activity) and object location (dependent on hippocampus activity). Once they complete the second memory test, their brain tissue will be fixed for c-fos (marker of brain activation) expression analyzation. It is expected that the combination of HFD + light deprivation will show lower forms of object location memory and activate less neurons than the HFD group, which will be similar compared to the control group. This study examines the long-term effects of HFD and light deprivation during adolescence on memory and brain activation in adulthood.

Psychological Science

## The Effect of Exercise on Motivation and Resilience in Rodents

Damaris Guevara, Samantha Foerke, Amelia Harris, Feby Ibrahim, Bryan Itzep, Daniel Mata, Ben McClintock, Taylor Pickle

Faculty Advisor: Timothy Schoenfeld, Ph.D

Research has shown that animals strive to optimize outcomes but take into account energy costs and risks when performing these reward-seeking behaviors. A study by Friedrich and Zentall confirmed that rodents prefer to choose harder-to-access food because they are motivated to forage, a concept known as contrafreeloading. Another study substantiated this notion by showcasing gerbils that preferred to choose seeds that were hidden over seeds that were clearly visible. To test this concept and observe whether exercise had an effect on motivation, eight Sprague-Dawley male rats were tested using a t-maze. Rodents were given the choice of two available rewards, each of a lesser or greater value. For the greater value reward, one full portion of a Fruit Loop was used, while the lesser value reward was one half-portion of a Fruit Loop. Each reward was placed on an opposing position of the flex maze. Rats were habituated to the maze and the Fruit Loops during the first week of testing, and the second week introduced the rats to either reward choice for "preference testing". Weeks 4-6 introduced rats to different aversive stimuli - light at differing intensities, a physical barrier, or presence of an artificial natural predator - on the side with the "better" reward. Assuming reward choice in conjunction with rapid travel speed continues to be apparent with the full portion of Fruit Loop, it can be assumed that this is the greater value reward. It is predicted that exercised rats will demonstrated greater motivation to overcome a variety of obstacles en route to greater reward.

Psychological Science

## Effect of Short-term Exercise on Acute Stress and Overcoming Aversive Stimuli for Reward

Hannah Branthwaite, David Sturges, Dima Qu'd, Hannah Johnson, Nardeen Fayik, Molly Tatum, Shannon Kelly

Faculty Advisor: Timothy Schoenfeld, Ph.D.

The purpose of this study is twofold; 1) to investigate the effect of short-term exercise on acute stress and 2) to see how this corresponds to the likelihood of overcoming an aversive stimulus to obtain a reward. Previous research has focused on the effects of long-term exercise on acute stress, but little has been conducted on how short-term exercise could alleviate acute stress. Additionally, most literature has focused on motivation for reward, whereas almost no research investigates overcoming aversive stimuli in order to obtain a reward. This study could help determine if short-term exercise is a useful mechanism to cope with acute stress and increase resilience in rodents and humans. Experimentation began with operant chamber training to condition the association of left lever bar presses with a grain-based reward. Once that association was learned, the rats underwent aversive conditioning utilizing lavender as the neutral/aversive stimulus–this aversive conditioning was tested using a T-maze as a manipulation check. The aversive stimulus, lavender, was later applied to the left lever bar, which the rats previously had a positive association with. We expect to find that the rats given access to short-

term exercise between acute stress and lever press testing will be less hesitant and more likely to overcome the aversive stimuli to obtain a reward.

Psychological Science

## Influences of Stimulus Saliency: A Study on Rat Motivation and Reward

Victor Hamilton, Nathaniel Glyder, Crystal Lemus, Maddie Bounds, Ashlyn Davis, Tiffany Dunlap, Austin Townsend, Jason Cloyd

Faculty Advisor: Timothy Schoenfeld, Ph.D.

The current study focused on how the varying degrees of stimulus saliency (concentration of clove oil) impacts motivation in rodents. Based on previous literature, it is known that rats are more motivated to complete a task quicker when paired with a more salient stimulus. In our study, we hypothesized that rats are more motivated to move through an obstacle when containing a more salient stimulus. To test this, Sprague-Dawley rats (n = 8) were trained over a four-week period using the Radial Arm Maze (RAM). During habituation, the rats learned to associate a medium potency clove essential oil dilution with an appetitive stimulus (fruit loop). After an association was established to the fruit loop, the rats were then introduced to lower potency and higher potency versions of clove oil dilutions. The rats were then presented with a physical obstacle (restraint tube) and completed separate trials with the varying concentrations of clove oil. The effects of essential oil strength on motivation was measured by the time spent to enter the RAM and complete a full trial. A one-way ANOVA between groups was used to determine the effects.

Psychological Science

## Minding the Eye: An Aphantasia Case Study

Natalie Halloran, Abigail Beck

Faculty Advisor: Carole Scherling, Ph.D.

Aphantasia, a condition in which an individual is not able to conjure images within the “mind’s eye,” reveals deficits in the ability to mentally picture people, places, or events (Zeman, 2018). Hence, these individuals may have differences in their ability to learn, mentally modulate as well as recognize and remember items. Deficit diagnosis is uncommon due to a lack of awareness for individuals and clinicians alike. Case studies are essential to advance our understanding. The current study examined 2 patients (23; 1M) with aphantasia. They completed a battery of

visuospatial and memory tasks: mental rotation, change blindness, abstract word recognition, spatial reasoning, and memory load (Jacobs, 2017). Such tests measure the capacity for internal representation of objects. Healthy controls demonstrate higher capacity to fulfill visual tasks, while being even with aphantasia patients on spatial tasks (Keogh & Pearson, 2017). Results indicate that aphantasia subjects demonstrate expected task reaction times and error rates compared to healthy controls (ex: Rey-Osterrieth reaction time: 102 seconds, scores: 20/36 and 22/36). However, subjects were unique in approaching the tasks and self-reported high levels of frustration and fatigue. In addition, they demonstrated higher-than-expected verbalization of task actions. Concluding, aphantasia individuals have likely acquired compensatory skills to overcome internal representation short-comings, but deficits lead to increased cognitive load. Continued study of cases, adding neuroimaging, and increasing sample sizes will lead to a better understanding of this cohort and grant a better understanding of the practical role that the mind's eye plays in daily life.