Improving Opportunities & Quality of Life for People with Disabilities: Collaboration, Research & Outreach

UNDERGRADUATE STUDENT POSTER ABSTRACTS

RAEGAN ADAMS
Major: Kinesiology
Faculty Advisor: Chia-Chia Chen

The Effects of Adapted Physical Activity Program on Balance and Quality of Life for Young Adults with Intellectual Disabilities
PURPOSE: Limitations in mobility and quality of life are common in persons with intellectual disabilities (ID). The purpose of this study was to determine whether adults with ID could improve their balance and quality of life through adapted physical activity participation. METHODS: Twenty-seven adults with ID (19 males and 8 females, aged 19-28 years) participated in an adapted physical activity program. Participants practiced soccer, basketball, and badminton activities with adults without ID for 2 hours each session, once a week for 6 weeks. Dynamic balance (e.g., Timed Up and Go Test), static balance (e.g., Sit-and-Stand Test), and Quality of Life (e.g., self-reported questionnaire) were measured before and after the program. A paired sample t-test 2 was used to explore the effect on their balance and quality of life. RESULTS: Participants significantly improved their performance in the Sit-and-Stand Test. They also improved their walking time in the Timed Up and Go test and reported more positive scores on their quality-of-life scale; however, both improvements did not achieve a statistically significant level. IMPLICATIONS / CONCLUSION: Participants practiced many fundamental motor skills (e.g., overhand throw, catch, kick, ball bounce, and run). Thus, this study concluded that young adults with ID could gain physical benefits (e.g., muscular strength) through participating in a six-week physical activity program. For dynamic balance, more emphasis needs to be placed on agility training, and for mental health benefits to be significant, more exercise sessions might be needed.

HONOR ELCHOS
Major: Agricultural and Biological Engineering
Faculty Advisor: Lauren B. Priddy

Custom Chamber for Cell Seeding of Scaffolds for Tissue Engineering
Seeding of cells onto biomaterial scaffolds is crucial in tissue engineering to initiate tissue growth. Cell seeding methods include two categories: static seeding, where cells are suspended in a medium and passively adhere to the scaffold over time, and dynamic seeding, which incorporates fluid flow through the scaffold to enhance cell adhesion. Static seeding techniques often yield insufficient attachment and inhomogeneous distribution of cells on scaffolds. Thus, the aim of our current study was to improve cell attachment on poly(lactic-co-glycolic acid) (PLGA) scaffolds using a dynamic method known as oscillation seeding. PLGA scaffolds are biocompatible and easily fabricated via 3D printing. This study uses MC3T3 pre-osteoblast cells because they adhere well, proliferate quickly, are genetically stable, and can be cultured in standard cell culturing media. A custom seeding chamber was designed to accommodate dynamic forces of oscillation seeding, via a peristaltic pump that utilizes rollers to mechanically move the cell suspension through the chamber system in one direction. The chamber comprises two sections: an outer casing, designed as a cube with adapters on both sides for unidirectional media flow, and an inner circular core which will be rotated 180° at various intervals during the seeding process, allowing for flow in the opposite direction (relative to the scaffolds). The core is divided into three hallways, each accommodating two scaffolds, featuring individual adapters to hold the scaffolds in place and promote perfusion through the scaffolds. Ultimately, this custom chamber is designed to facilitate uniform distribution of cells

throughout all six scaffolds in a repeatable manner. A test was conducted perfusing methylene blue dye (as a surrogate for cells) through the chamber to evaluate the distribution of flow throughout the scaffolds.

ANNA GREEN
Major: Kinesiology
Faculty Advisor: Zhujun Pan

Does medical insurance support Mississippi elderly's exercises?
In Mississippi, only 13.4% of adults 65 and older follow the federal physical activity guidelines, making Mississippi one of the least healthy States (ranked 49 of 50) in the country. In contrast, 38.2% of the elderly in Mississippi are physically sedentary, being the 46th in the State rank. The sedentary lifestyle accompanies by high rates of chronic conditions. In Mississippi, 43.6% elderly are diagnosed with High Blood Pressure, 14.6% elderly have Diabetes, and 11.7% elderly suffer from cardiovascular disease. Moreover, the elderly in Mississippi have an obesity rate of 39.7%, the highest rate of elderly obesity in the nation. The current study investigates if the elderly in Mississippi have the support to exercise. Specifically, does medical insurance pay for Mississippi elderly's exercises, such as membership, instructor lessons, and exercise attires? The initial research and interview reveal: - Original Medicare Part A and Part B do not cover the cost of gym memberships and any fitness program. Most Medicare Supplemental plans also do not include fitness programs and gym memberships. However, there are a few Medicare Advantage plans that people can avail of to cover the costs of a gym membership. - Medicare Advantage plans usually offer partial coverage for the costs of fitness programs and gym memberships. - SilverSneakers is a health and fitness program designed for adults 65+ that is included with qualifying Medicare health plans. It provides access to thousands of fitness locations1 across the county, from weights and machines to group classes2 led by trained instructors.

APRIL GUO-YUE
Major: Agricultural and Biological Engineering
Faculty Advisor: Juan Mendoza

Exploring a Novel Immune Modulation Approach for Monomeric Interferon Gamma (IFNγ) Design
Interferon gamma (IFNγ), a key immune regulator, holds promise for therapeutic applications. However, its complex effects have hindered clinical success. Previous research has shown that mutating a dimeric structure can simplify immune responses. This simplification can be achieved by designing a monomeric form of IFNγ to reduce complexity for more predictable and reproducible outcomes in therapeutic settings. Utilizing a rational structure design approach, we reengineered the genetic sequence, unlocking partial agonist potential without dual polypeptide chains. Based on Mendoza et al.'s (2019) findings, we used rational structural design to develop a monomeric IFNy variant. Helical rearrangements were employed to modulate the expression profile as a monomer, enhancing precision in therapeutic targeting. To experimentally validate this design, we utilized a two-pronged approach. First, we amplified the modified IFNγ gene using polymerase chain reaction (PCR). Then, Gibson assembly, a technique for efficient DNA fragment integration, was used to insert the designed sequence into a plasmid vector suitable for cellular uptake. This construct was transfected (introduced) into yeast and insect cells. Yeast cells, single-celled organisms known for their ability to express complex proteins in a controlled environment, allowed for initial confirmation of successful protein production and facilitated analysis of expression levels. Transfection of High Five (Hi5) insect cells utilized mammalian-like folding machinery and post-translational modification capabilities, thereby enhancing the potential of the engineered variant for therapeutic applications. The successful expression of the engineered monomeric IFNγ variant and its receptors in yeast and Hi5 insect cells, demonstrates its feasibility for production in diverse cellular environments. With implications spanning cancer therapy, autoimmune diseases, and infections, this work paves the way for personalized treatments. Future studies will assess its ability to modulate immune responses, promising tailored treatments with enhanced precision and efficacy. Additionally, translation into mouse studies will provide crucial preclinical insights for clinical development.

BROOKE THOMPSON
Major: Counseling, Higher Education Leadership, Educational Psychology, and Foundations
Faculty Advisor: Beca Spencer

Using Behavioral Skills Training to Increase Appropriate Answers to Common Questions During an Interview in Young Adults with Autism

With only 14% of adults with autism spectrum disorder (ASD) having held a paid job within a community setting (Autism Speaks, 2017), it is important for young adults to develop workplace skills needed to both secure and maintain employment. It is common to think that a good interview experience increases an individual's odds of securing employment. To build upon the limited research showing that individuals with ASD can be taught how to respond with appropriate answers to common questions during a job interview to secure employment, we replicated a portion of the study conducted by Roberts et al. (2021) who evaluated the effects of behavioral skills training (BST) on interview skills of young adults with autism. We used a nonconcurrent multiple baseline design across participants for one response (i.e., answering common interview questions appropriately) to extend these results to three young adults with autism. BST consisted of instruction of appropriate criteria for question(s), a verbal model of the participant's developed answer, roleplay, and feedback. Over the course of the study, all three participants showed an increase in appropriate responses, with two participants requiring the addition of a verbal prompt for any criteria not provided by participants to reach mastery. Results aligned with that of the Roberts et al. study in demonstrating that young adults with autism can benefit from behavioral skills training, with or without a verbal prompt, to improve interview skills and future employment opportunities. One limitation of the study is that the number of participants was very small and only featured males. A more diverse population regarding sex of participants could produce interesting results.

KARI YEE
Major: Psychology
Faculty Advisor: Mary E. Dozier

Preliminary Investigation of Gender and Racial Differences in the Presentation of Late Life Hoarding Disorder

In today's world, highlighting the ongoing dialogues that surround inconsistencies in how mental health care and treatment is provided to differing demographics is more paramount than ever before. More specifically, there is a pressing need to recognize the significance of the roles that gender and race play in the context of hoarding disorder and its effects on older adults. While hoarding disorder affects roughly 2-6% of the population, the numbers are likely to be much greater, yet they are not accurately reflected due to a lack of both available and easily accessible treatment options. Although there is progress made in research on hoarding disorder with every passing day, there is a consequential scarcity in a comprehensive understanding of how individuals within specific demographics are affected by hoarding disorder. By exploring the disparity of gender and racial representation in research on hoarding behavior, our hope is to shed light and contribute to a better overall understanding of such a complex issue while improving inclusivity. The purpose of this investigation is to explore possible gender and racial differences in the severity and presentation of hoarding disorder in older adults. Methods Thirty-five adults aged 50 and older completed a comprehensive assessment as part of their participation in a treatment study for late life hoarding in rural Mississippi. The assessment included a battery of self-report and clinician-administered measures of hoarding severity, including the Clutter Image Rating (participant and assessor rated), Relationship Between Self and Items (participant rated), and the Saving Inventory-Revised (participant rated). Scores on hoarding severity measures were compared using t-tests to investigate possible differences by gender and race. Results Twenty-seven participants identified as women; 8 participants identified as men. Six participants identified their race as African American or Black; 29 participants identified as White. Within our sample, women were more likely to report higher levels of clutter on the CIR ($t(33) = 3.09$, $p < .05$) and to report higher symptom severity on the SI-R ($t(33) = 2.50$, $p < .05$). There were no gender differences on the RSI ($p >$

.05). Participants who identified as African American were rated by the assessor as having higher levels of clutter on the CIR (t (29) = 2.16, p < .05); however, there were no race-based differences on participant ratings of their own household clutter or on the other self-reported hoarding measures (all ps > .05). Conclusions The initial objective of this investigation was to determine the impact that factors such as race and gender have on the presentation of hoarding behaviors among older adults, specifically individuals over the age of 50 years old. By furthering the current understanding of how gender and race influence hoarding, future clinicians and mental health professionals can utilize emerging research to provide more effective and inclusive treatment that is tailored to a broader scope of sociodemographic profiles. Of note, the data provided comes from a sample size of 35 individuals, based out of varying locations in rural Mississippi. The limitations in diversity found throughout these areas limit the generalizability of our findings. In the future, an increase in research aimed towards the further exploration of treatment for individuals of differing demographics would facilitate clinicians and mental health care providers to obtain the necessary training to specifically tailor their treatment methods for the individuals who are currently severely underrepresented.

GRADUATE STUDENT POSTER ABSTRACTS

JAMEY BACHMAN
Major: Counseling, Higher Education Leadership, Educational Psychology, and Foundations
Faculty Advisor: Beca Spencer

Using Behavioral Skills Training to Increase Appropriate Body Language During an Interview in Young Adults with Autism

With only 14% of adults with autism spectrum disorder (ASD) having held a paid job within a community setting (Autism Speaks, 2017), it is important for young adults to develop workplace skills needed to both secure and maintain employment. It is common to think that a good interview experience increases an individual's odds of securing employment. To build upon the limited research showing that individuals with ASD can be taught how to maintain appropriate body language while responding to questions during a job interview to secure employment, we replicated a portion of the study conducted by Roberts et al. (Journal of Behavioral Education, 2021) who evaluated the effects of behavioral skills training (BST) on interview skills of young adults with autism. We used a nonconcurrent multiple baseline design across participants for one response (i.e., displaying appropriate body language) to extend these results to three young adults with autism. BST consisted of instruction of criteria for appropriate body language, a visual model, roleplay, and feedback. Over the study, all three participants showed an increase in appropriate body language. Initially, the first two participants' growth became stagnant during BST sessions. However, providing more individualized feedback paired with the interview probe being administered by a different staff member than who conducted the BST training led to mastery criteria being met. These modifications were incorporated from the beginning with the third participant who met mastery criteria after six BST sessions. Results aligned with that of the Roberts et al. study in demonstrating that young adults with autism can benefit from BST to increase appropriate body language to enhance their job interview performance and ability to secure future employment. Limitations of the study included small number of participants and only featuring males. A more diverse population regarding sex of participants could produce interesting results.

PO LIN CHEN
Major: Kinesiology
Faculty Advisor: John Lamberth & Zhujun Pan

Assistive technology on workstation and activity of daily living among the elderly

With the growing number in the geriatric population, innovative support for independence and activity for daily living (ADL) to assist them in specific situations are extremely critical. Physical impairments and a loss of independence are two common occurrences witnessed in the elderly population and those suffering from chronic illnesses. This can have a negative effect in their independency and carrying ADL. With the advancement of technology, several low-tech (Alexa Echo, Siri, personal assistive devices) and high-tech (assistive robots, robotic arms, brain-computer interface) assistive devices have been developed over the past decade that could offer a solution to increasing quality of life (QoL) and independence in these populations. The purpose of this review is to explore the efficacies and application of different assistive technologies towards workstation and ADL among the elderly population. After reviewing empirical evidence that could potentially provide future solution in obtaining stable and sustainable solution in ensuring QoL and ADL in the elderly population, we categorized them in accordance with the used technology. The geriatric population may have little use for a robotic arm that is controlled via a joystick or voice-interface, but with the option for eye-gaze control they are still able to benefit from this type of technolog. Assistive robots have the flexibility to be programmed for various functions such as: fall prevention, object retrieval, telecommunication, and provide daily reminders in order to make sure the quality and safety of the elderlies. Artificial intelligence (AI) has become more readily available to the general population due to the popularity of smartphones, smart speakers, and other smart technologies. By incorporating these types of devices into their living environment, the elderlies can retain their independence and adapt their environment to meet their needs.

MALLIE DONALD
Major: Counseling, Higher Education Leadership, Educational Psychology, and Foundations
Faculty Advisor: Hailey Ripple

Functional Academics in the Real World
Federal legislation has mandated the use of evidence-based practices and transition planning for individuals with disabilities within the Individuals with Disabilities Education Improvement Education Act (IDEIA 2004; Ninci et al., 2015). In 2021, students with disabilities represented 15% of the total student population within the school system (National Center of Education Statistics, 2023). While transitional planning is mandated, students in self-contained classes often fail to receive functional skill training within the current curriculum (Nince et al., 2015). As a result, there is a need for evidenced-based practices to be applied within an academic and functional skill context, therefore incorporating standard academic skills such as mathematics and reading to a functional life skill (Domire et al., 2014). Moreover, the purpose of functional academics is to turn academic skills learned in the classroom into applicable life skills that makes day-to-day life more efficient and facile (Clark, 2013). The purpose of the current project is to apply an evidenced based academic and behavioral intervention to address reading and mathematics deficits within a functional real world setting. The current study includes three adolescent participants with diagnoses of autism spectrum disorder and a special education ruling of specific learning disability. The intervention services are being conducted through a school psychology services clinic on a university campus in the southeastern United States. All data collection is in process with expected completion in early Fall 2023. Participants are being taught through the evidenced based practice of behavioral skills training to read and identify items on a shopping list. They will then be required to select these items, buy the items, and provide the correct amount of money. Following the training phase, each of the participants will enter the generalization phase which will follow the same procedures as baseline. For both baseline and intervention sessions, the percentage of steps completed will be organized in a non-concurrent multiple baselines of participants and visually analyzed to demonstrate the intervention effect. The results of the intervention are expected to develop meaningful independence skills among the participants by teaching academic skills within a life skill context. Research indicates that individuals with disabilities that can perform functional living skills independently are more likely to obtain employment or post-high school education opportunities (Wagner et al., 2005). Nince et al., (2015) identified that few transition age youth receive adequate acquisition of functional skills within the current academic focused curriculum. Therefore, such individuals are placed at risk for decreased life satisfaction and well-being. As a result, it is imperative that teachers and practitioners incorporate functional skills within their academic and intervention curriculums for transition age students. The poster will address a research gap for evidenced based practices implemented in the school setting that additionally has real world implications. Additionally, the poster will address how similar interventions can be adapted and added to school-age transition plans.

RITA DRUFFNER
Major: Counseling, Higher Education Leadership, Educational Psychology, and Foundations
Faculty Advisor: Kayla Bates-Brantley

An Evaluation of an Academic-Based Level System
Level systems are intervention packages where a group or individual receives varying degrees of reinforcement based on responding (Cihon et al., 2019; Hagopian et al., 2002). The literature on level systems has been focused on the implementation of group- or individual-based behavioral intervention seeking to decrease socially maladaptive behavior while increasing socially appropriate behaviors. The purpose of the current study was to evaluate the effectiveness of a level system as a component of a reading intervention package. The participant was one 9-year-old, Black female referred by her parents for additional academic support in reading. The level system provided tiered reinforcement based on academic performance across reading interventions aimed to increase nonsense word fluency. The results of a multielement comparison across academic interventions suggest the level system increased academic performance in reading. A subsequent component analysis suggests the level system alone was effective to increase academic performance in reading. The current combination of reading intervention

and the level system provides a preliminary demonstrated of how to address skill and motivational deficits to increase nonsense word reading fluency.

EMMA FARNLACHER
Major: Animal and Dairy Science
Faculty Advisor: Mollie Nicodemus

Cortisol concentrations associated with psychotherapy incorporating equine interaction compared to cognitive behavioral therapy in treatment of substance abuse disorder

Psychotherapy incorporating equine interaction (PIE) is emerging as an effective supplemental substance use disorder (SUD) treatment. Benefits are attributed to decreased stress levels associated with the presence of the horse, however, research concerning stress parameters related to short-term equine interaction during SUD treatment is limited. Therefore, the purpose of this study was to investigate cortisol concentrations in SUD patients participating in PIE for two weeks compared with those in traditional cognitive behavioral therapy (CBT). Salivary cortisol samples were collected from two populations of SUD patients: 1) PIE participants and 2) CBT participants. To determine the influence of SUD on therapy type, individuals with no diagnosed mental health disorders (CONT) participating in PIE and those in CBT were sampled for comparisons. A mixed linear model in SAS was utilized with significance level set at 0.05. When comparing PIE to CBT within groups (SUD and CONT), no significant impacts on therapy type (SUD: $P = 0.74$, CONT: $P = 0.193$), week of sampling (SUD: $P = 0.69$, CONT: $P = 0.686$), or week by treatment interactions (SUD: $P = 0.86$, CONT: $P = 0.858$) were observed. When comparing the two groups, there was a significant impact associated with therapy type ($P = 0.0024$) on patient post-therapy cortisol concentrations between SUD and CONT groups. Results suggest equine interaction within the therapy process did not introduce additional stress from that of CBT, and while this was consistent between groups, therapy type does influence SUD participants unique from those without a diagnosed mental health disorder.

OLIVIA FRANKLIN
Major: Educational Psychology - ABA
Faculty Advisor: Hallie Smith & Meme Staggers

Increasing Compliance with Nail-Cutting in a 14-Year-Old Student with Autism Spectrum Disorder: A Case Study

Individuals with autism spectrum disorder (ASD) and other developmental disabilities often engage in challenging behaviors during personal hygiene routines which may interfere with their ability to successfully comply with and complete essential personal hygiene routines (Jennings et al., 2022). In many cases, to complete personal hygiene tasks, an individual may come into contact with stimuli that are perceived as uncomfortable or aversive. As a result, an individual may engage in extreme forms of responding (e.g., tantrums, aggression) when presented with the stimulus. These extreme forms of responding, or problem behaviors, increase the likelihood of injury during hygiene routines and ultimately lead to poor personal hygiene. Without intervention, poor personal hygiene can lead to negative health and social consequences. The purpose of the current study was to evaluate an intervention to reduce challenging behavior that interfered with nail cutting by 80% of baseline results and increase compliance with fingernail cutting by 90% of baseline results. Results indicate a reduction in challenging behavior interfering with nail clipping by 88.33% from baseline levels and an increase in compliance of nail cutting by 96.67% from baseline levels.

NAILAH KENT
Major: Counseling, Higher Education Leadership, Educational Psychology, and Foundations
Faculty Advisor: Hailey Ripple

Using Video Modeling to Teach Picture Exchange Communication Systems

The picture exchange communication system (PECS) is an evidence-based communication intervention designed to improve communication skills in people with limited to no functional speech. Because of this, professionals frequently look for opportunities to receive training in how to implement PECS. Though most training methodologies have included robust, and time intensive, training methodologies, one recent study used video modeling (VM) with voice-over instructions and text descriptions to train three future professionals in the implementation of PECS. Thus, to find even more efficient and effective training methodologies, this study aimed to train future professionals in the first three phases of PECS using VM alone and, if necessary, verbal feedback. A nonconcurrent multiple baseline design across three participants was used in the study. The results indicated all three participants demonstrated an immediate change in skills following VM alone, with only one participant requiring brief feedback in Phase 1. This was further evidenced by large effect sizes. Thus, results indicate that training future professionals using VM was both more efficient and equally effective when compared to previous training methodologies.

MARILYN KOLPIEN
Major: Counseling, Higher Education Leadership, Educational Psychology, and Foundations
Faculty Advisor: Hailey Ripple

Acceptance and Commitment Therapy Used to Increase Psychological Flexibility and Manage Symptoms of Anxiety in Adolescents with ASD
Acceptance and Commitment Therapy (ACT) aims to increase psychological flexibility using cognitive behavioral therapies oriented toward mindfulness and acceptance (Juvin et al., 2021). Although there is a significant literature base supporting the use of ACT with parents of adolescents with ASD (Halliburton & Cooper, 2015), there are limited studies demonstrating ACT outcomes in adolescents with ASD. Furthermore, outcome measures in current literature assessing the use of ACT with adolescents with ASD do not often include measures of anxiety. The current study used ACT to increase psychological flexibility and decrease symptoms of anxiety in an adolescent female with ASD.

RYLEE McHENRY
Major: Counseling, Higher Education Leadership, Educational Psychology, and Foundations
Faculty Advisor: Kayla Bates-Brantley

Enhancing Email-Writing Skills in College Students with Disabilities
Email exchanges are a key component of communication between students and instructors (Petrie, 1999). Despite email's prominence, there are few resources instructing students to write professional emails. Therefore, students who cannot independently conceptualize necessary email components are at a disadvantage (Chalk et al., 2005). The researchers examined the effects of self-regulated strategy development (SRSD) on the email writing skills of three college-aged males receiving disability accommodations. SRSD is an evidence-based intervention that teaches all components of the writing process in conjunction with self-regulatory processes (Graham et al., 2005). A multiple baseline design across participants was used to compare the presence of necessary email components in the participants' emails after SRSD implementation. The results indicated that the SRSD intervention resulted in an increased presence of necessary components in the participants' emails. By improving students' email writing skills, SRSD might also enhance their academic, vocational, and interpersonal success.

RYLEE McHENRY
Major: Counseling, Higher Education Leadership, Educational Psychology, and Foundations
Faculty Advisor: Kayla Bates-Brantley

"Let's Go to the Store!": Making Functional Academics Accessible
The current study sought to target a client's functional academic skill of purchasing items at a store. The client, Salvador, was a 17-year-old male with autism spectrum disorder (ASD) who was referred to the university-

affiliated summer academic and behavioral clinic due to needed improvement in adaptive skills. Specifically, Salvador's mother reported wanting to increase his independence in making purchases. Due to Salvador's current inability to independently purchase items on a shopping list from a fake store with pretend money, the clinician developed two separate interventions targeting the prerequisite skills of purchasing items from a store. The first intervention utilized behavioral skills training (BST) to teach Salvador to read a shopping list, match the items on the list with items in a pretend store, and placing the items in a shopping basket. This intervention utilized a changing criterion design, and the dependent variable was the number of steps Salvador correctly demonstrated. The second intervention targeted the variations of Salvador's expressive money production (e.g., when prompted to provide the clinician $10, Salvador could provide ten $1 bills, two $5 bills, and one $10 bill). This intervention utilized an ABC design with generalization, and the dependent variable was the number of bill variations Salvador produced. The results of the first intervention indicated an increase of the number of steps Salvador demonstrated following the intervention when there were five items, ten items, and fifteen items on his shopping list. The nonoverlapping pairs effect size was 0.97, indicating a large effect. The results of the second intervention indicated an increasing trend of the number of bill variations presented before the trend leveled out around the mastery criteria; however, the level of responding decreased during generalization. The nonoverlapping pairs effect size was 1.0, indicating a large effect.

RYLEE McHENRY
Major: Counseling, Higher Education Leadership, Educational Psychology, and Foundations
Faculty Advisor: Kayla Bates-Brantley

Taking Social Skills Solo
The researchers sought to examine the effectiveness of an adapted, individually administered PEERS® social skills curriculum on increasing the conversation skills of a 14-year-old male with autism spectrum disorder (ASD). Specifically, the researchers focused on the first three conversational skills of the PEERS® curriculum: trading information, having two-way conversations, and conversing over the phone. The study followed a concurrent multiple probe design across behaviors (Horner & Baer, 1978), allowing the researchers to examine the intervention's effectiveness using visual analysis and nonoverlap of all pairs (NAP) effect size calculations.

ANNA GRACE McLAIN
Major: Counseling, Higher Education Leadership, Educational Psychology, and Foundations
Faculty Advisor: Hailey Ripple

Evaluation of a Levels System to Address Food Refusal in Adolescents
A levels system, an intervention that uses a combination of behavioral principles (e.g., reinforcement, response cost), requires individuals to meet a specific behavior criterion in order to gain access to specific reinforcers available at the different levels within the system. Although levels systems have effectively reduced severe problem behavior, only one study has explored the use of a levels system without nonremoval of the spoon to address food refusal (Ripple et al., 2022). The purpose of this study was to implement an individualized levels system and demand fading procedures with two female participants, (ages 10 and 15) who both presented with a history of food selectivity and food refusal, to increase the volume of both preferred and non-preferred foods consumed during meals. A reversal (ABAB) design was used; results indicated that the levels system intervention paired with demand fading was effective at increasing consumption of a variety of foods for the participants.

TAYLOR MOORE
Major: Counseling, Higher Education Leadership, Educational Psychology, and Foundations
Faculty Advisor: Stephanie Mattson

A Systematic Review of Behavior Skills Training: Focus on Procedural Variations and Additional Intervention Components

Behavioral Skills Training (BST) is a widely used competency-based teaching and training framework. BST has been applied broadly in the field of behavior analysis across child and adult learners and individuals with and without disabilities. Although the instructions, modeling, rehearsal, and feedback components remain consistent across BST studies, there is considerable variability in the implementation of these components, and other behavioral strategies (e.g., reinforcement, additional teaching strategies, etc.) researchers add to BST procedures to achieve socially significant outcomes. We conducted a systematic review of studies where researchers used BST to teach skills to individuals on the autism spectrum. In the majority of studies included in our review, researchers needed to augment BST with additional intervention components for at least some participants to master the skill. We present a summary of these additional components and discuss implications for clinical practice and future research.

JAMIE MOSS
Major: Counseling, Higher Education Leadership, Educational Psychology, and Foundations
Faculty Advisor: Mark Wildmon

School Psychology and AAC Devices: Teacher Support and Training Needs
This study investigates special education teachers' perceptions of the effectiveness of support and training received while working with AAC device users. The study indicates a need for continuous professional development, which necessitates individual training approaches and interdisciplinary collaboration with teachers, SLPs, and school psychologists to enhance the usability of AAC devices in the classroom.

JAMIE MOSS
Major: Counseling, Higher Education Leadership, Educational Psychology, and Foundations
Faculty Advisor: Kayla Bates-Brantley

Leveling Up Social Skills: A Game-Based Intervention Enhancing Responses in Adolescents with Autism Spectrum Disorder
There is a plethora of literature that showcases the effectiveness of social skills groups in increasing individuals' ability to interact in social settings. Game-based interventions are commonly used by clinicians as an alternative to commonly used lesson methods. The purpose of this study is to expand the literature as it pertains to social skills interventions for adolescents through a game-based method while aiming to decrease inappropriate game responses and simultaneously increase appropriate game responses. Participants of this study included three adolescent boys with ASD. The study followed an ABAB design, consisting of a baseline phase (A), and structured game phase (B). The baseline phase allowed participants to respond freely when engaging in a game of their choice. The intervention phase consisted of a structured game in which clients were redirected to posted rules when inappropriate responses were given. Phase change decisions were made based on an increase in appropriate responses for participants one and two and a decrease in inappropriate responses for participant three. Preliminary results show that appropriate responses for participants one and two increased suddenly with implementation of the structured game phase with a decreasing trend. Inappropriate responses for participant three showed a sudden decrease with a decreasing trend upon implementation of the structured game phase. These preliminary findings have potential implications for the effectiveness of structured play in decreasing inappropriate social responses and support the need for future research in game-based play in social skills groups across populations.

JAMIE MOSS
Major: Counseling, Higher Education Leadership, Educational Psychology, and Foundations
Faculty Advisor: MacKenzie Sidwell

ORF? More Like, Bro-RF: Increasing Oral Reading Fluency with Duo Repeated Reading and Goal Setting
There is a plethora of literature that showcases the effectiveness of repeated reading and goal setting

interventions, yet the literature examining the effectiveness of repeated reading with those with ASD is much thinner. Further, there is limited evidence regarding the effect of variations of repeated reading, such as Duo Reading on reading fluency. The purpose of this study was to evaluate the effect of duo repeated reading and duo repeated reading with goal setting on oral reading fluency. The participants of this study included two adolescent boys with ASD. The study followed an ABCBC design, consisting of a baseline phase (A), duo repeated reading (B), duo repeated reading with goal setting (C). Both intervention types used the same six AI-generated reading passages. Results showed that while participant one's words correct per minute (WCPM) scores increased gradually with implementation of the duo repeated reading, there was a sudden increase in level with implementation of duo repeated reading with goal setting and a consistent upward trend through the rest of the intervention phases. Participant two's results showed a sudden decrease in WCPM with the implementation of duo repeated reading but a sudden increase with implementation of duo repeated reading with goal setting and a steady upward trend for the remainder of intervention. These findings have potential implications for the effectiveness of the addition of goal setting to a repeated reading intervention and support the need for future research in extending peer-to-peer interventions across academic subject areas.

BROOKE PABEN
Major: Counseling, Higher Education Leadership, Educational Psychology, and Foundations
Faculty Advisor: Hallie Smith

Count Your Chews! A Self-Monitoring Intervention to Increase Chewing Efficiency
Oral-motor skill deficits and food selectivity often coincide, particularly when it comes to the consumption of regular texture foods. Common interventions that are used to address food selectivity include differential reinforcement, escape extinction, and demand fading (Silverman, 2016). However, when an individual's food selectivity is more closely related to oral-motor skill deficits or delays, these interventions may not be appropriate or effective. There is limited research on the use of behavioral interventions to address chewing efficiency, largely because these concerns are treated primarily by speech language pathologists or occupational therapists, and not by behavior analysts. The current study aimed to fill this gap in the literature by developing a self-monitoring intervention to decrease the number of chews and the latency to mouth clean regular texture food using a multiple baseline design across foods. Results indicated that this intervention was effective at increasing the efficiency of chewing for this participant.

BROOKE PABEN
Major: Counseling, Higher Education Leadership, Educational Psychology, and Foundations
Faculty Advisor: Hallie Smith

Increasing Efficiency of Treatment Identification for Feeding Problems Through the Development of a Rapid Assessment Tool
During treatment of pediatric food refusal, when nonremoval of the spoon and reinforcement-based strategies are ineffective at increasing acceptance, physical guidance procedures may be considered. It might be more efficient to evaluate multiple physical guidance procedures during the assessment process instead of introducing these procedures sequentially from least to most intrusive. In the current study, a rapid assessment tool was developed and evaluated with one participant, an 8-year-old male with ASD, who was admitted to an outpatient treatment program for the assessment and treatment of food selectivity and associated inappropriate mealtime behavior. The participant's caregiver also completed a treatment acceptability survey. Four physical guidance procedures were evaluated in the assessment tool: jaw prompt, finger prompt-stationary, finger prompt-moving, and finger prompt plus side deposit. The procedure identified as most effective in the RAPP was introduced into the treatment evaluation. Results suggest the RAPP may be an efficient and effective way to assess physical guidance procedures prior to their incorporation into treatment.

BROOKE PABEN

Major: Counseling, Higher Education Leadership, Educational Psychology, and Foundations
Faculty Advisor: Hallie Smith

Determining Dosage of Training Required for Accurate Data Entry of Behavioral Observation Data in Excel

Task analyses have been used in the field of applied behavior analysis to teach a variety of skills. Using task analysis allow researchers the opportunity to give participants detailed instruction on how to complete a task without having to directly train them. The purpose of this study was to examine if a task analysis was efficient enough to teach individuals how to accurately enter data from a feeding session. Researchers used start point randomization within a multiple baseline design to take participants across three different phases throughout this project. Each phase included an addition to the previous phase to better assist the participant in reaching mastery criterion. The phase following the addition of the task analysis and self-check list included variables such as modeling and a practice trial. All participants throughout this project needed the addition of the modeling phase to reach the mastery criterion. One participant needed the additional phase of a practice trail to reach mastery criterion. This research is important as it can be implemented as a structured training tool across pediatric feeding disorder labs.

CECELIA POWELL

Major: Counseling, Higher Education Leadership, Educational Psychology, and Foundations
Faculty Advisor: Kasee Stratton-Gadke

Evaluating Issues in Adulthood for Individuals with CHARGE Syndrome

What are we missing? What questions do you have that are not being answered? How can we help improve your needs? We want to help you! The Bulldog CHARGE Syndrome Research Lab at Mississippi State University asked adults with CHARGE as well as parents of individuals with CHARGE to complete a survey of needs in order to facilitate research in areas that often get overlooked due to not being aware of the importance to individuals in the community. This poster highlights the results of responses given by participants and what they determine to be the next steps of research in the CHARGE Syndrome research community. Further, it describes the resulting direction of research the Bulldog CHARGE Syndrome Research Lab will be embarking on in response to these results.

JILLIAN RESSLER

Major: Counseling, Higher Education Leadership, Educational Psychology, and Foundations
Faculty Advisor: Mark Wildmon

Promoting the Identification and Understanding of Emotions

Promoting the Understanding and Identification of Emotion Understanding and being able to identify emotions is an important life skill that is used in daily interactions (Cutting & Dunn, 1999). An important component to a child's overall development is being emotionally competent (Denham et al., 2003). Being emotionally competent has also been shown to make individuals more successful in academics, social interactions, and in relationships (Denham et al., 2012). Not only is it important for a child's social and academic development, it is important to identify and understand other people's emotions (Pons, Doudin, & Harris, 2004). Therefore, the purpose of this research study was to help the development, comprehension, and understanding of emotions for a 6-year-old boy with autism. The study was conducted at a university based clinic over the course of 7 months. Results suggest that the use of picture cards and social stories increased the comprehension and understanding of emotions for this individual.

JILLIAN RESSLER
Major: Counseling, Higher Education Leadership, Educational Psychology, and Foundations
Faculty Advisor: Mark Wildmon

Using a Check-in/Check-out + Behavior Report Card Intervention to increase appropriate behavior in a self-contained classroom
Check-in/Check-out (CICO) is an evidenced based Tier 2 intervention that has shown to decrease problem behaviors and increase academic engagement (Kittleman, et al., 2018). It is one of the most commonly used intervention in schools for students showing minor problem behaviors across multiple school settings. Research has been conducted in over 3,000 schools (Hawken et al., 2014). The CI/CO intervention is easy to implement and only requires four intervention components, 1. Meet with student and review expected classroom performance, 2. Observe student's behavior throughout session or class period, 3. Complete the data sheet/behavior report card, and 4. Meet with the student and review the report card/performance, deliver reward or give feedback to increase goal (Dart et al., 2012). There is also a fifth intervention component if access to adult attention is observed when the student engages in problem behavior. The firth component is a take-home component which includes sending home a daily summary report for the parent to review (Weber et al., 2019). Even with numerous empirical evidence provided on the CI/CO intervention in a variety of settings, there is little or outdated research conducted in the self-contained classroom on the effectiveness of this intervention. In this review, I will discuss the characteristics, presentation, features, and guidelines of the CI/CO intervention, as well as research and results of CI/CO conducted in the self-contained classroom in a rural public school in central Mississippi.

JILLIAN RESSLER
Major: Counseling, Higher Education Leadership, Educational Psychology, and Foundations
Faculty Advisor: Mark Wildmon

Using a Brief Experimental Analysis to Determine an Effective Reading Intervention
Reading Fluency remains the most common difficulty for which children are referred to school psychologists (Bramlett, Murphy, Johnson Wallingsford, & Hall, 2002). Therefore, summer months can be a time of skill loss for students who are already struggling academically, especially when compared to their peers (Schacter, 2003). To help improve this, a summer academic clinic was opened for the month of July at a university-based clinic to help decrease the skill loss in academics. The current study involved two 10-year-old male students that were brought to the summer academic clinic by their parents for help in reading fluency. To help increase the participants reading fluency, a Brief Experimental Analysis was used to quickly determine effective interventions by manipulating instructional variables and assessing immediacy of effect. Brief Experimental Analysis allows researchers to quickly test the relative effects of two or more interventions on a target behavior such as reading oral fluency (Daly, Witt, Martens, & Dool, 1997). Three interventions were used in the BEA, I Read-You Point, Phoneme Go Fish, and Vowel Slide. After each intervention was implemented, a AIMSWEB cold probe was presented to determine Words Read Correctly Per Minute. The results suggest that I Read-You Point is an effective reading intervention method to teach reading fluency skills to individuals with reading difficulties.

JACIE RINEHART
Major: Counseling, Higher Education Leadership, Educational Psychology, and Foundations
Faculty Advisor: Kayla Bates-Brantley

Decreasing Group Disengagement and Inappropriate Vocalizations Within a Small Group Setting
Individuals with a diagnosis of autism spectrum disorder (ASD) often present with higher frequencies of inappropriate behaviors within a group setting (Goodl et al.). Social skills groups are designed to target both increasing appropriate behaviors and decreasing inappropriate behaviors. Over the course of 12 one and a half hour sessions three student participated in an intensive social skills group to decrease group disengagement and inappropriate vocalizations. The demographics of the participants were as follows: 9-year-old African American

female, a 10-year-old Caucasian male, and a 5-year-old African- American male. Further, group disengagement was defined as "participant leaves their chair, participant orients body away from game/story, or participant covers their face with clothes/toys". Inappropriate vocalizations were defined as "participant engages in inappropriate vocalizations that is defined as verbal responses that are not on topic, interrupting the group leaders, or vocal scripting that exceeds 5 seconds in duration." Baseline data was collected on the percentage of engagement in problem behavior. Each session, the clinicians reminded the participants of the group rules, which included only using the pieces that belonged to you and using a quiet voice. A fixed ratio schedule was used to provide reinforcement. If the participants met the criteria of the fixed ratio, they were able to earn access to preferred reinforcement. The clinicians used partial interval recording date to calculate the frequency of behaviors. Overall, participants 2 and 3 displayed a decrease in group disengagement when compared to baseline data, while participant 1 displayed an initial increase in group disengagement. Additionally, all participants displayed a decrease in inappropriate vocalizations when compared to baseline. In conclusion, while the data is not significant, this intervention is effective at decreasing both group disengagement and inappropriate vocalizations within a small group setting.

RYLEIGH SAMPEY
Major: Applied Behavior Analysis
Faculty Advisor: Hallie Smith

Classroom Password: An Independent Group Contingency Targeting Academic Engagement and Disruptive Behaviors in a 3rd Grade Classroom
Classroom Password is an independent class-wide group contingency intervention that has been successful at increasing academic engagement and decreasing disruptive behavior in both high school and middle school general education classrooms (Bates-Brantley, Kayla E., "The Classroom Password: An Independent Group Contingency Targeting Academic Engagement and Disruptive Behaviors In High School Classrooms" (2017). Master's Theses. 318.). However, it has never been evaluated in an elementary classroom setting. The purpose of this study was to determine if the Classroom Password intervention was successful at increasing academically engaged behaviors (e.g., students directing their body and eyes towards the teacher during instructional time or participating in academic tasks) while decreasing disruptive behaviors (e.g., out of seat, making noises, fidgeting with items unrelated to academic task) in a third grade general education classroom. An ABAB design was used to determine intervention effectiveness. Results indicated that the intervention was successful at increasing academic engagement and decreasing disruptive behavior. Social validity data was taken across teachers and students and suggested that this intervention is a valid option for implementation in a third-grade classroom.

MATTIE WILLIAMS
Major: Counseling, Higher Education Leadership, Educational Psychology, and Foundations
Faculty Advisor: Dr. Mark Wildmon

School Psychology and AAC Devices: Use and Challenges
This study investigates special education teacher's utilization of Augmentative and Alternative Communication (AAC) and the perceived challenges associated with using AAC devices. The study reveals key challenges in AAC usage, implying a need for targeted interventions and comprehensive educator training. Additionally, it examines the diverse perceptions of AAC effectiveness and its impact on relationships, shedding light on the intricacies of user experiences. The study highlights the pivotal role of AAC devices in enhancing communication and fostering social interaction, emphasizing their significance in inclusive education.

MATTIE WILLIAMS
Major: Counseling, Higher Education Leadership, Educational Psychology, and Foundations
Faculty Advisor: Dr. Mark Wildmon

An Exploratory Study Integrating Occupational Therapy Techniques into Applied Behavior Analysis during a Skill Acquisition Intervention

Many adults with developmental and intellectual disabilities lack the appropriate and necessary physical skills or mental understanding to successfully accomplish daily tasks regarding independent living. However, many interventions typically fail to fully consider the individuals overall physical development and only focus on acquiring behaviors specific to the skill. For some individuals the addition of an occupational therapy technique or exercise may be necessary for improved rate of acquisition and potentially improve generalizability of the skill. Using Behavior Skills Training (BST) as a basic paradigm for skill-acquisition the present study compared two forms of Behavior Skill Training. The first was the standard presentation of BST with a fine-motor exercise and the second used BST without an additional component. The discussion will focus on the difference between the rate of acquisition between the two interventions, new ways to conceptualize interventions for independent living skills, and considerations for combining the disciplines of Occupational Therapy and Applied Behavior Analysis in future research.