

**Missouri
State**

McQUEARY COLLEGE *of*
HEALTH AND HUMAN SERVICES

STUDENT RESEARCH SYMPOSIUM



APRIL 27, 2023

3-5PM

PSU BALLROOM



McQueary College of Health and Human Services

Student Research Symposium

Welcome to the 27th Annual McQueary College of Health and Human Services Student Research Symposium. The purpose of the symposium is to highlight student research and to provide an opportunity for students to gain experience discussing their scholarly work. We are excited to continue this tradition and are looking forward to celebrating MCHHS students' outstanding work, acknowledging the faculty members who serve as mentors, and recognizing the schools and departments which support discovery.

To all McQueary College of Health and Human Services faculty, staff, alumni, board members and students, THANK YOU for participating in this year's symposium! Your hard work, dedication, and active participation is greatly appreciated.

I would also like to thank the MCHHS Student Research Symposium Committee members for their time and effort in organizing the symposium:

Dr. Ashlea Cardin, Occupational Therapy
Dr. Christie Cathey, Psychology
Dr. Melissa Fallone, Psychology
Dr. James Hackney, Physical Therapy
Dr. Michael Hudson, Public Health and Sports Medicine
Dr. Anne Marie Hunter, Public Health and Sports Medicine
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Mrs. Rebeca Reut-Robinson, Executive Assistant
Ms. Molly Laird, Administrative Specialist

Dr. Mark A. Smith

Dean, McQueary College of Health and Human Services

ORDER OF PRESENTERS (First Author)

1. McKenzie Adam-Hager
2. Valeria Perminova
3. Ashley Davis
4. Trey Hoenie
5. Madison Gregory
6. Jeanette Drecker
7. Rachel Pecka
8. Jianna Cox
9. Emma Liimatta
10. Kelsey Kendrick
11. Dana James
12. Corynn Knight
13. Kayla Kline
14. Brooke Franklin
15. Emma Gibfried
16. Molly Matysiak
17. Anne Sommers
18. Kelsey Glaser
19. Melissa Lang
20. Vanessa Barraza
21. Savannah Fate
22. Maggie Quick
23. Kaylee Morales
24. Kal Baguio
25. Brooke Kirby
26. Miqueyla Lopez
27. Jaylin Onnen
28. Rachel Rumsey
29. Christopher Barber
30. Shane Carlson
31. Rebecca Althoff
32. Megan Frey
33. Kelsey Luedecke
34. Allison Petry
35. Abigail Denton
36. Giovanina Bohn
37. Jon Talerico
38. Brian Bartletti
39. William Smith
40. Justin Nguyen
41. Maggie Adler
42. Jaelyn Compton
43. Emily Hermann
44. Lauren Hutchison
45. Taylor Reynolds
46. Katelyn Frahm
47. Evan Reichard
48. Carlos Abrams
49. Laura Adams
50. Rosie Buckner
51. Callie Cochran
52. Madeline Caughron
53. Emily Burns
54. Mykah Doolin
55. Olivia Baron
56. Weston Phipps
57. Chandler Zimmerman
58. Kam Barker
59. Maddie Brutton
60. Paige Hemming
61. Breanna Lee
62. Ryan Moser
63. Whitney Akalugwu
64. Riley Brady
65. Emily Lohrbach
66. Lauren Smith
67. Mykah Doolin
68. Emily Lohrbach
69. Sam Naughton
70. Cassidy Schwentker
71. Jessica Lew
72. Jihyun Oh
73. Peyton Davis
74. Madison Cronin-Burroughs
75. Parker Eley
76. Sydney Murray

Presenters and Faculty Mentors by Department and Abstract Number(s)

ANESTHESIA

Adam-Hager, McKenzie.....	1
Beckham, Tracy.....	1
Davis, Ashley.....	3
Feeney, Monika.....	2
Glatts, Stephanie.....	2
Layman, Jill.....	3
Lee, Jiwon.....	3
Perminova, Valeria.....	2
Scholz, Sarah.....	2
Steil, Sydney.....	1
Thomas, Leanna.....	3
Thurman, Rachel.....	1

BIOMEDICAL SCIENCES

Barron, Caroline.....	10
Baum, Mack.....	7,13
Brodeur, Amanda.....	4,5
Brooks, Patrick.....	5
Cox, Jianna.....	8
Drecker, Jeanette.....	6
Fry, Callie.....	7
Gregory, Madison.....	5
Havlicek, Marc.....	6
Hoenie, Trey.....	4
Hoffman, Grace.....	13
Hulme, Amy.....	6,7
James, Dana.....	11
Kendrick, Kelsey.....	10
Kline, Kayla.....	13
Knight, Corynn.....	12
Liimatta, Emma.....	9

Matheney, Hannah.....	6
Moon, Ryan.....	4,5
Moore, Summer.....	10
Pecka, Rachel.....	7
Piskulic, Alyson.....	7
Schmoll, Emily.....	9
Shank, Ashley.....	13
Smith, Joshua.....	5,8,9
Surls, Morgan.....	7
Ulbricht, J. Randi.....	10
Wang, Jianjie.....	11,12
Whitacre, Hannah.....	7
Witkowski, Colette.....	13
Wood, Kyle.....	4

COMMUNICATION SCIENCES AND DISORDERS

Barraza, Vanessa.....	20
Engler, Karen.....	14,15,16,17
Fate, Savannah.....	21
Franklin, Brooke.....	14
Gibfried, Emma.....	15
Glaser, Kelsey.....	18
Lang, Melissa.....	19
Lockenvitz, Sarah.....	18,19
Matysiak, Molly.....	16
Morales, Kaylee.....	23
Muller, Bailey.....	20
Quick, Maggie.....	22
Rowan, Siobhan.....	18
Slavych, Bonnie.....	20,21,22
Sommers, Anne.....	17

Presenters and Faculty Mentors by Department and Abstract Number(s)

Still, Bri.....	19
Telting, Dee.....	23
Woody, Danielle.....	22

KINESIOLOGY

Armster, Jamiah.....	25
Baguio, Kal.....	24
Banze, Jordan.....	25
Barber, Christopher.....	29
Brester, Kelsey.....	29
Brown, Adam.....	24
Carlson, Shane.....	30
Cash, Mackenzie.....	25
Dove, Landon.....	29
Falk, Andrew.....	27
Freeman, Alyssa.....	26
Goddard, Stacy.....	24,25,26, 27,28
Handa, Abhishek.....	24, 30
Hoelker, Zackary.....	26
Johnson, Shaunda.....	26
Kilgore, Cordell.....	29
Kirby, Brooke.....	25
Lopez, Miqueyla.....	26
Lynn, Trinity.....	29
Martinez, Isaac.....	28
McBrian, Randal.....	27
McBride, Brendan.....	25
McClain, Eban.....	27
McHenry, Maci.....	25
Modi, Zalak.....	30
Muthamsetty, Sai Praneeth.....	24, 30
Onnen, Jaylin.....	27

Rassel, Aaron.....	26
Roberts, Emma.....	28
Rumsey, Rachel.....	28
Sloan, Tim.....	27
Smith, Jordyn.....	28
Wilson, Daniel.....	29, 30
Young, William.....	29
Youngbrandt, Scott.....	29

OCCUPATIONAL THERAPY

Althoff, Rebecca.....	31
Ambra, Taylor.....	31
Bentley, Brianna.....	31
Cardin, Ashlea.....	31, 32, 33, 34
Conner, Paige.....	34
Frey, Megan.....	32
Hedrick, Hannah.....	34
Hoelscher, Kasey.....	34
Loveless, Armetta.....	33
Luedecke, Kelsey.....	33
Marshall, Sid.....	31
Maue, Rachell.....	32
McKinzie, Emily.....	32
Petry, Allison.....	34
West, Maya.....	33
Willis, Jessica.....	31

PHYSICAL THERAPY

Bartletti, Brian.....	38
Bohn, Giovanina.....	36
Cahoj, Patricia.....	35
Chase, Taylor.....	36

Presenters and Faculty Mentors by Department and Abstract Number(s)

Craig, Leigh Ann.....	39
Crawford, Jasmine.....	36
Denton, Abigail.....	35
Donahue, Kyle.....	35
Golladay, Alison.....	38
Gorman, Katie.....	36
Hackney, James.....	36, 37
Hall, Drew.....	37
Himes, Marcia.....	38
Kuchem, Jaimie.....	38
Lekarczyk, Riley.....	35
Newton, Sean.....	35
Nguyen, Justin.....	40
Okenfuss, Brielle.....	39
Palmer, Matt.....	37
Ray, Carson.....	39
Raybourn, Felicia.....	35
Robinson, Barbara.....	39
Schlotzhauer, Christopher.....	36
Schutte, Sydney.....	40
Sexauer, Cade.....	35
Shaw, Jason.....	35
Smith, William.....	39
Stringer, Kyle.....	37
Tallerico, Jon.....	37
Thier, Trevor.....	36
Waltz, Ashleigh.....	37
Weber, Vitoria.....	38
Williamson, Elizabeth.....	40
Woolverton, Megan.....	35

PSYCHOLOGY

Abrams, Carlos.....	48
Adams, Laura.....	49
Adler, Maggie.....	41
Akalugwu, Whitney.....	63
Arroyo, Monique.....	67
Arvizu, Lyric.....	67
Barker, Kam.....	58, 60
Baron, Olivia.....	55
Belisle, Jordan.....	41, 42, 43, 44, 45, 59, 62
Bickel, Hollie.....	55
Brady, Riley.....	63, 64
Brutton, Maddie.....	59
Buckner, Rosie.....	50
Bumgardner, Samantha.....	68
Burns, Emily.....	53
Carroll, Matthew.....	57
Cathey, Christie.....	46, 47
Caughron, Madeline.....	43, 45, 52, 60
Cochran, Callie.....	51
Compton, Jaelyn.....	42, 43, 59
Deal, Paul.....	57
Doolin, Mykah.....	54, 63, 65, 67
Echols, Leslie.....	48, 49, 50, 51
Elliot, Bentley.....	45
Escobar, Amber.....	68
Fallone, Melissa.....	52
Frahm, Katelyn.....	46
Gray, Andrea.....	68
Hall, Ashley.....	48, 49, 50, 51
Hemming, Paige.....	60, 67
Hermann, Emily.....	43, 59, 62

Presenters and Faculty Mentors by Department and Abstract Number(s)

Herrera, Haley.....	59
Houston Jr., Michael.....	48
Huckstep, Logan.....	59
Hui, Kaitlyn.....	62
Huskey, Jenna.....	42
Hutchison, Lauren.....	44
Ifah, Victory.....	47
Jennings, Samonte.....	57
Jones, Hallie.....	46
K C, Mamata	43
Koch, Mattis.....	47
Kostic, Bogdan.....	53, 54
Lambert, Kerry.....	64
Lee, Breanna.....	42, 43, 45, 59, 61
Liley, Kaylee.....	43, 62
Lohrbach, Emily.....	63, 65, 68
Massey-Abernathy, Amber.....	55, 56
McCann, Cassidy.....	51
Middleton, Amanda.....	43, 62
Mitchell, Wayne.....	57
Mitzak, Madison.....	43, 45
Moody, Justin.....	66
Morgan, Chaunice.....	68
Moser, Ryan.....	59, 62
Muslim, Salma.....	67, 68
Nguyen, Minh.....	57, 67
Paliliunas, Dana.....	42, 43, 45, 58, 59, 60, 61, 62
Payne, Ashley.....	63, 64, 65
Phipps, Weston.....	56
Reichard, Evan.....	47, 68
Reynolds, Taylor.....	43, 45, 59
Smith, Lauren.....	66

Snodgrass, Alexis.....	68
Stanbrough, CaSandra.....	55, 66
Tritz, Hannah.....	55
Wicks, Madyson.....	64
Wolken, Sophie.....	64
Yadon, Carly.....	67
Young-Jones, Adena.....	68
Zimmerman, Chandler.....	57

PUBLIC HEALTH AND SPORTS MEDICINE

Acheson, Olivia.....	70
Arellano, Haley.....	71
Carr, William David.....	69, 70
Christian, McCall.....	71, 72, 73
Coffman, Megan.....	73
Cronin-Burroughs, Madison.....	74
Davis, Peyton.....	73
De Felice, Danielle.....	75
Edwards, Mariah.....	71
Eley, Parker.....	75
Elsbree, Megan.....	73
Frank, Eva.....	75
Havey, Thomas.....	71
Hetzler, Brandon.....	73
Hetzler, Tona.....	70, 73
Hudson, Michael.....	74, 75
Jenkins, Michia.....	74
Lew, Jessica.....	71
Liggett, Allan.....	74, 76
McCarn, Hallie.....	70
McGuire, Daniel.....	75
Mitchell, Mariah.....	69

Presenters and Faculty Mentors by Department and Abstract Number(s)

Murray, Sydney.....	76
Myers, Arianna.....	69
Naughton, Sam.....	69
Oh, Jihyun.....	72
Robinson, Elisha.....	70
Schieffer, Katelyn.....	76
Schouten, Ashley.....	69
Schwentker, Cassidy.....	70
Shastri, Charmi.....	76
Uekuri, Daishi.....	76
Valdez, Sergio.....	75
Wieck, Sarah.....	73

ANESTHESIA

1. Methods for Improving the Safety and Efficiency of Invasive Line Placement by Advanced Practice Providers

McKenzie Adam-Hager, Rachel Thurman, Sydney Steil

Faculty Advisor: Tracy Beckham

Standardization in the education of procedural skill mastery by novice student registered nurse anesthetists (SRNA) in doctoral programs is vital to the maintenance of patient safety and the elevated status and professional standards required by doctorally-prepared anesthetists. In the age of simulation-based health professional education, standardized procedural checklists which follow the most current evidence and guidelines have been shown to improve adult learning as well as patient and safety outcomes when utilized during central venous catheter, arterial line, and pulmonary artery catheter insertions. The implemented intervention included the presentation and dissemination of three procedural skill checklists pertaining to each of the three skills paired with associated standard of care, indication, contraindication, and complication information. Following the review of the safety protocol checklists, a follow-up survey was distributed to the participants to assess perceived comprehension, improvement in knowledge of insertion steps, safety protocols, and tool format usefulness. It was found that an overwhelming majority of DNAP students surveyed supported the use and implementation of the created tools and presentation.

2. Improved Technical Skills Performing Neuraxial Anesthesia Following the Implementation of a Skills Checklist

Valeria Perminova, Sarah Scholz, Stephanie Glatts
Faculty Advisor: Monika Feeney

Throughout anesthesia training, Certified Registered Nurse Anesthesia residents (CRNA) are required to become competent in performing a variety of clinical skills. According to the Council on Accreditation of Nurse Anesthesia Educational

Programs, CRNA residents must independently complete a minimum of thirty-five regional anesthesia techniques. However, spinal and epidural anesthesia techniques are technically challenging procedures and require practice to achieve proficiency and expertise. Several studies suggest that a skills checklist may enhance adult learning of technical skills. We are introducing a neuraxial skills checklist, which we believe will be helpful to RRNAs during education and training in neuraxial anesthesia skills. We hope that our checklist can provide a quick and concise review of neuraxial anesthesia implementation and identify possible challenges before residents provide neuraxial anesthesia to a patient. In addition, we recommend implementing this checklist at the beginning of neuraxial anesthesia skills training and utilizing it as a self, peer, and educational evaluation tool as the resident continues through clinical rotations.

3. Basic Airway

Ashley Davis, Jiwon Lee, Leanna Thomas
Faculty Advisor: Jill Layman

Once the patient is induced with anesthesia for many surgical procedures, a temporary airway device is placed. There is a learning curve to safely establishing an airway, and standardized checklists enhance learning and improve skill and understanding, particularly for novice students. The aims of this project were (1) to develop checklists in basic airway procedures, which include adult and pediatric intubation, video laryngoscope, laryngeal mask airway (LMA), LMA Fastrach, double-lumen endotracheal tube (DLETT), and Cook exchange catheter, and (2) to evaluate the confidence level of Student Registered Nurse Anesthetist (SRNAs) in performing basic airway procedures after the presentation of the skill using the checklist. A literature review verified standards of care, guiding each checklist's development. A presentation of each airway device checklist was given, including the algorithm for known and unanticipated difficult airways, which describes when to utilize some of these techniques or tools. The results from post-presentation surveys indicate that all participants agreed or strongly agreed that using a checklist to

learn how to establish an airway, with various tools as described, improved learning.

BIOMEDICAL SCIENCES

4. Post-COVID Syndrome/Long COVID: Global Impacts, Pathophysiology, Cell and Molecular Biology, Treatment, and Prognosis

Trey Hoenie, Ryan Moon, Kyle Wood, Amanda Brodeur

Faculty Advisor: Amanda Brodeur

COVID-19 is a global health concern that continues to impact the entire world and make lasting changes on the future of medicine and healthcare. SARS-CoV-2's ability to adapt, mutate, and infect makes it difficult to diagnose and treat. Hundreds of millions of people have been infected. Not only is the virus detrimental to a person's health upon initial infection, but the effects of COVID-19 infection have been seen to alter one's health over extended periods of time including weeks, months, and years later. It is estimated that 20% of those initially infected will experience Long COVID, or Post-COVID syndrome. Long COVID can present with fatigue, fever, and cough that persist after the initial infection has resolved; however, patients can also experience multi-organ effects such as renal failure, diarrhea, and hypotension that develop following resolution of active infection. Further investigation into the molecular mechanisms of Long COVID development will inform treatment and improved outcomes for those that experience the condition.

5. Hypochlorous Acid as an Antimicrobial Treatment Preventing Infection in Compound Fractures

Madison Gregory, Ryan Moon, Patrick Brooks, Joshua Smith, Amanda Brodeur

Faculty Advisor: Amanda Brodeur

Compound fractures are susceptible to bacterial infection due to environmental exposure. Irrigation of the fracture is a common method to prevent infection. There is not yet a clinical practice guideline in terms of the type of irrigation solution

to be used. The goal of this work is to explore if hypochlorous acid irrigation solution is effective at killing bacteria, while being non-toxic to human cells, and to determine the therapeutic window for use of hypochlorous acid in irrigation of compound fractures. Hypochlorous acid is commonly used in cleaning solutions, wound treatment, and is naturally produced by the human body as part of a natural immune response. Some sources in the literature suggest that hypochlorous acid may cause cellular damage and change the way in which the cell functions. First, we generated cultured osteoblast cells, which will serve as the model for exposed cells in compound fractures. Next, we introduced hypochlorous acid in various concentrations to cultures of osteoblasts to determine the maximum concentration that will result in cell death. Finally, we identified the concentration (ppm) at which hypochlorous acid inhibits the growth of opportunistic pathogens.

6. SPTBN1 Involvement in Reverse Transcription of HIV-1 in CHME3 Cells

Jeanette Drecker, Hannah Matheney, Marc Havlicek, Amy Hulme

Faculty Advisor: Amy Hulme

Human Immunodeficiency Virus 1 (HIV-1) is a lentivirus that infects CD4+ cells. When left untreated, the virus will attack the immune system leading to Acquired Immunodeficiency Syndrome (AIDS). While there is no cure available, treatments can slow disease progression. HIV-1 utilizes host proteins to complete viral replication. SPTBN1 is a molecular scaffold protein. Dai and Gallo's studies show that SPTBN1 knockdown inhibits HIV-1 infection. However, the viral replication steps that SPTBN1 impacts are not known. Previous work has shown that SPTBN1 knockdown delays HIV capsid uncoating but does not impact viral fusion kinetics. The uncoating and reverse transcription steps of HIV replication can influence each other. Therefore, the goal for this study is to analyze the impact SPTBN1 knockdown has on the reverse transcription of HIV-1 in microglial cells. Knockdown SPTBN1 cells will be tested for completion of reverse transcription with a GFP

reporter virus. Cells will then be exposed to a reverse transcriptase inhibitor at different time intervals.

7. SPTBN1 and Actin Staining in Microglial Cells to Better Understand HIV Replication

Rachel Pecka, Callie Fry, Mack Baum, Alyson Piskulic, Morgan Surls, Hannah Whitacre, Amy Hulme

Faculty Advisor: Amy Hulme

Human immunodeficiency virus (HIV) is a viral infection that weakens the immune system by decreasing the amount of active CD4 cells. The early stages of HIV replication are still unclear within the science community. The purpose of this study was to investigate the role of the cellular protein spectrin β nonerythrocyte 1 (SPTBN1) in early stages of HIV replication and localization within CHME3 microglial cells. The Dai study found that lowering expression of SPTBN1 in macrophages led to HIV-1 resistant cells. In this study, knockdown of SPTBN1 caused a partial depolymerization in the actin cytoskeleton, which may contribute to the overall resistance to HIV-1. The goal of our study is to optimize fluorescent microscopy techniques to visualize SPTBN1 and actin in CHME3 microglial cells. We found clusters of SPTBN1 protein distributed throughout the cells utilizing 2X antibody staining. In 0.25X phalloidin stained cells, we clearly visualized the actin fibers. In the future, this technique can be used to determine if HIV-1 colocalizes with SPTBN1 and actin during early replication and the effect of SPTBN1 knockdown on HIV-1 infection. These results will lead to an understanding of what host cell features HIV-1 uses for replication.

8. Characterization of the Overexpression of the RecA Homologs DMC1 and RAD51 in *Tetrahymena thermophila*

Jianna Cox, Joshua Smith

Faculty Advisor: Joshua Smith

Two RecA homologs, Dmc1 and Rad51, work to repair DNA double-strand breaks (DSBs) within the cell through the recombination of homologous

sections of DNA. Dmc1 works to repair programmed DSBs through meiotic recombination, while Rad51 functions to repair DSBs caused by DNA damaging agents. Many chemotherapeutics work to form DSBs in cancer cells, attempting to inhibit the cell's growth. A hyper-recombinant phenotype is often seen in cancer cells due to the overexpression of RAD51, leading to drug resistance, the persistence of cancers, and an overall poor patient outcome. In the model organism *Tetrahymena thermophila*, an amacronuclear phenotype is observed at elevated growth temperatures (35 °C), when RAD51 is overexpressed. Further evidence shows that this phenotype is more affected from the change in temperature rather than only the temperature itself. A complication in the elongation of the macronucleus occurs but DNA synthesis is not halted, resulting in a macronucleus containing up to 5 times the normal genetic content. When DMC1 is overexpressed, no notable phenotype was observed. Further study between the two RecA homologs will help elucidate how RAD51 overexpression leads to genomic instability in the cell.

9. Characterization of the Novel UV Resistance Phenotype in *Tetrahymena thermophila* With RAD23 Deleted

Emma Liimatta, Joshua Smith, Emily Schmoll
Faculty Advisor: Joshua Smith

Nucleotide Excision Repair is an essential process which when mutated results in diseases such as Xeroderma Pigmentosum. The NEF2 complex, made up of proteins RAD4 and RAD23, is indispensable in recognizing bulky lesions in the genome caused by mutagens and UV radiation. RAD4 has been shown to be degraded and less effective if RAD23 is absent. Current research has mainly concerned *Saccharomyces cerevisiae*, and the deletion of RAD23 has shown to lead to a decrease in cell survivability when exposed to UV radiation. However, in recent years novel research has shown that deletion of RAD23 in the organism *Tetrahymena thermophila* leads to an unexpected ~150% increase in cell survivability following UV treatment. This result is hypothesized to be caused

by an unknown function of RAD23 in the cell cycle. If RAD23 contains this function, then its deletion could imbalance the cell cycle causing the cell to not undergo apoptosis when damaged. Tetrahymena may showcase this function better than *Saccharomyces* due to its dimorphic nuclei. Survivability assays testing homologous recombination in the same cell lines have been performed. Preliminary data supports the hypothesis of RAD23 having a novel cell cycle function.

10. Inflammation, Sex, and Tissue Dependent Gene Expression and RNA Editing in Mice

Kelsey Kendrick, Summer Moore, Caroline Barron, Randi J. Ulbricht
Faculty Advisor: Randi Ulbricht

Inflammation occurs as a result of insult/infection within the body. Individual cells respond to inflammation by upregulating genes that help mediate the immune response, such as ADAR1. ADAR1 helps regulate the immune response but also catalyzes a process called RNA editing. RNA editing alters the sequence of select mRNAs to alter the encoded proteins. The result is altered function of the protein, often beneficial for the cell. Our goal was to determine how inflammation affects the function of ADAR1. Since we know that the effects of inflammation vary between different organs and sexes, we examined ADAR1 function in heart, brain, and muscle in male and female mice after the introduction of LPS, an inflammation-inducing agent. We found that editing in the heart and brain was unaffected. RNA editing of FLNB in skeletal muscle was increased by LPS in males but was unaffected in females. Another RNA editing target, FLNA was unaffected by the treatment, but showed a sex-dependent difference in editing. These results show that the effects of inflammation may selectively affect the function of FLNB in muscle. Furthermore, expression of inflammatory factors ADAR1, TNF α , and MDA5 was induced by LPS, as expected, but TNF α and MDA5 expression was induced more in females. Our work suggests that the impact of sex on inflammatory factors may also indirectly affect the rate of RNA editing of select transcripts in select tissues.

11. P2Y2 Receptor Involvement in Endothelial Cell Permeability

Dana James, Jianjie Wang
Faculty Advisor: Jianjie Wang

The endothelium lining the luminal surface of the vascular wall is pivotal in hemostasis, organismal homeostasis, and inflammatory response. Interestingly, inflammation is involved in processes of broad disorders and diseases such as atherosclerosis, diabetes, cancer, and vasculitis. Inflammation has a profound effect on increasing endothelial permeability. Previously, our group has shown that the activation of P2Y2 receptor (P2Y2R) increases permeability in vivo. The goal of this project is to determine the molecular mechanism of P2Y2R-induced increase in permeability using murine microvascular endothelial cells (MEC), an in vitro model. Our first aim is to measure permeability in response to uridine triphosphate, a P2Y2R agonist, in wild type and P2Y2R knock out primary murine MEC. Endothelial permeability will be assessed using Transwell Permeable Supports with albumin-fluorescence complex. Fluorescence intensity will be quantitatively measured using spectrophotometry. Identifying the mechanistic involvement of MEC P2Y2R in permeability will further the understanding of vascular permeability during inflammatory response and will aid in the treatment of a broad group of diseases.

12. Effect of P2Y2 Receptors on Leukocyte Behavior in Vivo Under Acute Inflammation

Corynn Knight, Jianjie Wang
Faculty Advisor: Jianjie Wang

P2Y2 receptors, G-protein coupled receptors, are present on most cells in the body and hold a wide variety of roles. It has been shown that under resting conditions, P2Y2 receptors suppress the movement of leukocytes but it is unknown how inflammation in an organism will alter this. The objective of this project is to determine the effect of P2Y2 receptors on leukocyte behavior in vivo under acute inflammation using Intravenous microscopy (IVM) in post-capillary venules of the cremaster skeletal muscle. LPS will be injected into the scrotum of

transgenic male mice to cause localized acute inflammation. Leukocytes that are conjugated with Rhodamine 6G injected through the tail vein are visualized with an IX81 Olympus fluorescence microscope. We predict to observe increases in recruitment, rolling, and adhesion of leukocytes when compared to a control group. If this is the case, it could suggest that the P2Y2 receptors expressed on both endothelial cells and leukocytes regulate the leukocyte response during inflammation. With increased understanding of the P2Y2 receptor role in inflammation, we will have better control of an inflammatory response by potentially diminishing harmful effects of inflammation on normal tissue.

13. Vaccine Hesitancy

Kayla Kline, Grace Hoffman, Mack Baum, Ashley Shank

Faculty Advisor: Colette Witkowski

Vaccine Hesitancy is the delay in acceptance or denial of vaccination despite the availability of vaccine services and evidence of safety. Those who are vaccine hesitant are fearful that the vaccine will cause adverse effects or contain harmful substances, and hence refuse the treatment. Vaccine hesitancy has been recognized by the World Health Organization as the 8th top global health concern, with incidents rising since the COVID-19 pandemic. Vaccines are important to strengthen the immune system and protect against diseases that would otherwise be serious or fatal, such as chickenpox, hepatitis, meningitis, and much more. There are many different types of vaccines depending on their mode of action such as inactive, live-attenuated, mRNA, and recombinant vaccines.

While the availability of the COVID vaccine has caused a surge in the discussion of vaccine hesitancy, this concern has been prevalent throughout history, primarily within communities of color due to health disparities, medical mistreatment, and practical barriers. In recent years, vaccine hesitancy has been increasing due to the spread of misinformation, unreliable documents, distrust of clinicians, and lack of knowledge about how vaccines are made and work.

COMMUNICATION SCIENCES & DISORDERS

14. Utilization of a QR Code for Identification for Newborn Hearing Screening Follow-up

Brooke Franklin

Faculty Advisor: Karen Engler

It has been found that approximately 1-3 per 1000 newborns in the United States have been identified with hearing loss. The average percentage of infants who are lost to follow up after their initial hearing screening is 25.4%. Although lost to follow up has decreased, it is still a problem within the United States. The purpose of this study is to find and create a solution to decrease the percentage of lost to follow-up in infants. The creation of a QR code is utilized to increase the number of parents that do go to follow-up appointments. The expected outcome of the QR code will be that parents are informed about the referral and follow-up appointments to be made immediately after the infant has been “referred”. The QR code will also inform parents about the ramifications of hearing loss.

15. Language Deprivation and Self-Injurious Behavior: Strategies for Decreasing Self-Injurious Behavior in d/Deaf and Hard of Hearing Children

Emma Gibfried

Faculty Advisor: Karen Engler

Children who are d/Deaf and Hard of Hearing (d/DHH) with language deprivation may be at a higher risk for self-injurious behavior (SIB). This research project aimed to explore similarities between SIB in individuals with autism and d/DHH individuals with language deprivation in order to collect a list of effective strategies to reduce SIB in d/DHH children with language deprivation. Although there is currently no research on SIB in the d/DHH population, individuals with autism and d/DHH individuals share many common factors that have been shown to increase SIB. In this project, an in-depth review of the literature was conducted to collect information on effective strategies used to reduce SIB in individuals with autism. That

information was then adapted to create a collection of behavior management strategies and communication tools that could assist deaf educators in preventing and stopping self-injurious behavior in early elementary d/DHH students with language deprivation.

16. Promoting Self-Advocacy in Elementary Aged Students in the Classroom Setting

Molly Matysiak

Faculty Advisor: Karen Engler

Self-advocacy skills increase quality of life outcomes for students with disabilities, including Deaf and hard of hearing students. Self-advocacy skills are often lacking among these students. This research highlights important factors like post-secondary outcomes, explicit instruction strategies, and aspects within self-advocacy that are important for upper elementary aged students. This project resulted in compiling a set of resources for teachers who serve Deaf and hard-of-hearing students to teach self-advocacy skills.

17. Trauma-Informed Education of the Deaf and Hard of Hearing

Anne Sommers

Faculty Advisor: Karen Engler

Adverse childhood experiences (ACEs) are experienced by almost a quarter of the U.S. population. For individuals who are d/Deaf and hard of hearing (d/DHH), these traumatic events occur at an even higher rate and are intensified by unique communication challenges. An accumulation of ACEs may cause negative health outcomes and behaviors later in life. To decrease youth trauma and its negative effects on quality of life, researchers recommend protective resources, assessments, and treatments that target ACEs amongst this special population. Therefore, the purpose of this composition was to create a guide for trauma-informed teaching of d/Deaf and hard of hearing students that incorporates Substance Abuse and Mental Health Services Administration's (SAMHSA) Trauma and Justice Strategic Initiative.

This information can enhance the knowledge of general education teachers to support d/DHH students that have been exposed to traumatic events in their classroom.

18. Perspectives of Neurodiversity

Kelsey Glaser, Siobhan Rowan

Faculty Advisor: Sarah Lockenvitz

The medical model, which aspires towards normalization and symptom reduction, has long been accepted orthodoxy. There have been calls from the autistic community to rethink the way in which autism is viewed. Neurodiversity challenges the medical model and celebrates diagnoses including autism, ADHD and dyslexia as an inseparable aspect of identity. The purpose of our research is to gather information on perspectives of neurodiversity among Speech-Language Pathology (SLP) students and professionals. Participants were given surveys that asked about their knowledge and experience with the term "neurodiversity". Data was collected from 73 individuals with 59 being students, 12 being professionals, and 2 being both. Although analysis continues to be ongoing, we anticipate results to indicate that there is a current increase in the term "neurodiversity" among SLPs. We also anticipate for many students and professionals to identify with some aspects of neurodiversity themselves. Our findings indicate that neurodiversity is continuing to grow to be more conventional and widely accepted among students and professionals in the SLP field.

19. The Effect of Loudness of Diphthongs

Melissa Lang, Bri Still

Faculty Advisor: Sarah Lockenvitz

We commonly use a certain type of vowel with two elements, known as diphthongs, in our communication, and as speech sounds they are used at different volumes in different situations. We are interested in seeing if production of diphthongs at different levels of loudness affects either vowel element of a diphthong. Fifteen randomly-selected Missouri State Graduate students are reading a list

of 25 words twice, once quietly and once loudly. The list contains various monophthongs and diphthongs. The readings are recorded and entered into the speech analysis software Praat. Data from Praat enable us to analyze the vowel elements of diphthongs and any changes according to whether they were produced quietly or loudly. Data collection continues to be ongoing, but at this time we anticipate results to indicate that a change in loudness when speaking has a distinguishable effect on diphthongs.

20. Evaluation of Online Consumer Information Related to Communication Sciences and Disorders

Vanessa Barraza, Bailey Muller
Faculty Advisor: Bonnie Slavych

When patients seek out medical information, they often turn to the internet. To encourage patient and caregiver empowerment, individuals should have access to quality educational materials. This study will discuss the relationship between health literacy and patient outcomes. It will summarize the current state of readability, understandability, actionability, and quality of online materials related to communication sciences and disorders.

21. Capturing Patient Outcomes Using Patient Reported Outcome Measures

Savannah Fate
Faculty Advisor: Bonnie Slavych

Patient reported outcome measures (PROMs) are a vital aspect of non-instrumental assessment, especially for those with voice disorders. PROMs are standardized surveys given to patients that ask them to rate their voice problem in various areas regarding activities of daily living and other areas. Voice-related PROMs provide subjective data about the patient and how they view their voice problem. They also offer a guide for clinical decision making when creating goals that meet the patient's personal needs. Thus, PROMs are beneficial non-instrumental assessment tools that should be incorporated throughout any voice assessment,

alongside other instrumental and non-instrumental methods. Most standardized PROMs in existence are for adults experiencing voice problems. For adolescent voice disorders, PROMs are often written to be completed by their caregivers. This leaves adolescents' personal concerns regarding their voice problem out of assessment, despite them being the ones experiencing the voice disorder. There are many psychosocial repercussions that adolescents with voice disorders may experience; these may vary per individual and are important for the speech-language pathologist to consider for both treatment and counseling.

22. Aging and Disability Bias

Maggie Quick, Danielle Woody
Faculty Advisor: Bonnie Slavych

This presentation will discuss the differences between implicit and explicit bias, the biases associated with aging and disability, and the potential impacts these biases could have on treatment outcomes. According to the United Nations Department of Economic and Social Affairs, an estimated 15% of the world population (over 1 billion people) live with one or more disabling conditions. Over 46% of people 60 years and older have disabilities and more than 250 million of these people experience moderate to severe disabilities. These populations are commonly found on the caseloads of speech language pathologists whose biases, whether they are aware of them or not, impact their clinical decision making. These judgments are carried through assessment, evaluation, and treatment of their patients and diminish the quality of care that these vulnerable populations receive. As allied health professionals, it is the responsibility of the SLP to educate themselves on their own biases, adjust their thoughts and behaviors accordingly, and be an advocate for more equitable care within the healthcare system.

23. Caregivers' Use of Alternative Strategies in Managing Dementia

Kaylee Morales, Dee Telting
Faculty Advisor: Dee Telting

Caregivers play a crucial role in the lives of those with Dementia. Every year, more than 16 million Americans provide more than 17 billion hours of unpaid care to family and friends who have Dementia due to Alzheimer disease (Alzheimer's Association 2022). Dementia has no definitive cure and available drug treatments can have many adverse effects that interfere with the quality of life of the persons with Dementia. Due to this, the use of complementary and alternative approaches to manage Dementia related symptoms has become an emerging topic. The purpose of this study is to examine what kinds of complementary and alternative approaches are being used to help manage Dementia related symptoms in the individual under their care. A short survey was conducted on caregivers of those with Dementia. Participants were questioned on their use and perception of complementary and alternative approaches, and any change of behaviors before and after implementation. The results of the survey will be discussed. The results of this survey will aid in educating other caregivers on what type of alternative approaches are being used as well as any trends.

KINESIOLOGY

24. Correlation Between Fear of Falling and Senior Fitness Test and Fullerton Advanced Balance Test Score Among Community-Dwelling Older Adults

Kal Baguio, Adam Brown, Abhishek Handa, Sai Praneeth Muthamsetty
Faculty Advisor: Stacy Goddard

One in four older adults falls each year in the United States (Centers for Disease Control and Prevention [CDC], 2021). Half of the elderly that are admitted to the hospital due to fall-related injuries die within a year (Jeoung, 2015). Physical activity plays an important role in reducing the risk of falls through

greater muscular strength to adapt to postural disturbances (Jeoung, 2015). Older adults who have a fear of falling may be at an increased risk of falling as well. This current study has received IRB approval and aims to determine if there is a correlation between older adults' fear of falling assessment score and their Senior Fitness Test (SFT) and Fullerton Advanced Balance (FAB) scores. Community-dwelling older adults over the age of 65 will be recruited to complete the SFT and FAB as well as the Fear of Falling assessment. The implications of this study will help to determine where the exercise professional can focus on in relation to increasing participants' self-efficacy related to falling.

25. Barriers of Aging Adults

Brooke Kirby, Mackenzie Cash, Jordan Banze, Jamiah Armster, Maci McHenry, Brendan McBride
Faculty Advisor: Stacy Goddard

According to the Centers for Disease Control and Prevention (CDC), about 28% of adults 50 or older are inactive due to different physical barriers, such as arthritis and chronic illness. The CDC also says that aging adults dealing with a chronic illness are 30% more inactive than those without a chronic disease. The aim of this study is to determine if there is a correlation between perceived barriers to physical activity and how older adults score on Senior Fitness Test (SFT) and the Fullerton Advanced Balance (FAB) test. This study has been given IRB approval. Participants, who are individuals that are 65 years and older, will be asked to complete a barriers-to-physical activity survey as well as complete the SFT and FAB assessments. The data will be analyzed using a Pearson's r correlation. The information gained from this investigation will help further the knowledge related to barriers to physical activity among older adults and help exercise professionals develop methods to overcome those barriers to improve the health of older individuals.

26. How Does the Satisfaction With Life Scale Impact Senior Fitness Tests (SFT) and Fullerton Advanced Balance (FAB) Scores?

Miqueyla Lopez, Shaunda Johnson, Zack Hoelker, Aaron Rassel, Alyssa Freeman
Faculty Advisor: Stacy Goddard

Often the ability to participate in physical activity and complete activities of daily living (ADL) decreases with advancing age. Continuing to participate in physical activity has been shown to help older adults complete ADLs and remain independent for longer (Centers for Disease Control and Prevention [CDC], 2021). Being physically active can also improve psychological well-being (CDC, 2021). The aim of this study is to determine if there is a correlation between older adults' self-assessed satisfaction with life scale and how they score on the Senior Fitness Tests (SFT) and Fullerton Advanced Balance (FAB) tests. This study has been given IRB approval. Participants will be recruited and asked to complete the satisfaction with life scale and then administered the SFT and FAB. The results will be analyzed using the Pearson's r correlation. The implications of this study will add to the current knowledge of understanding how fitness level and balance ability affects older adult's overall satisfaction with life with the purpose of improving all measures.

27. MOEES Physical Outcomes Research Project (KIN567/667-SP23)

Jaylin Onnen, Tim Sloan, Andrew Falk, Eban McClain, Randal McBrian
Faculty Advisor: Stacy Goddard

Few older adults are reaching recommended activity levels for both aerobic and muscle strengthening activities, with the percent declining as age increases: 16% of 64-75-year-olds, 12% of 75-84-year-olds, and only 7% of those 85 years of age and above (Office of Disease Prevention and Health Promotion [ODPHP], 2020). This study aims to identify the relationship between older adults' perception of the physical benefits of exercise participation and their score on the Senior Fitness Test (SFT) and the Fullerton Advanced Balance

(FAB) test. The project is IRB approved and is collecting data. Participants will complete the Outcome Expectations for Exercise Scale (MOEES) and the SFT and FAB test. Participants will complete the Outcome Expectations for Exercise Scale (MOEES) and the SFT and FAB test. Participants will complete the Multidimensional Outcome Expectations for Exercise Scale and the SFT and FAB test. The data will be analyzed to determine a correlation between physical outcomes expectations from the MOEES and the scores on the SFT and FAB. The findings from this research will help exercise professionals better understand older adults' motivation and expectations of physical activity to make changes for healthier living.

28. Motivation and the Physical Activity of Older Adults

Rachel Rumsey, Jordyn Smith, Isaac Martinez, Emma Roberts
Faculty Advisor: Stacy Goddard

Research has shown that older adults who participate in physical activity have reduced symptoms of anxiety and depression and improves mood and psychological well-being (Centers for Disease Control and Prevention [CDC], 2021). This research will explore the correlation between older adults' perceived psychological outcomes from exercise motivation related to physical activity and their scores on the Senior Fitness Test (SFT) and the Fullerton Advanced Balance (FAB) tests and has been given IRB approval. Participants will complete the Multidimensional Outcomes Expectation for Exercise Scale (MOEES) as well as the SFT and FAB tests. Data will be analyzed using the Pearson's r correlation. This research will provide exercise professionals with better knowledge on what can be done to keep the older adult population motivated to be physically active to maintain a healthy fitness level.

29. Stability of the Back Squat Under Different Conditions

Christopher Barber, William Young, Cordell Kilgore, Landon Dove, Kelsey Brester, Trinity Lynn, Scott Youngbrandt
Faculty Advisor: Daniel Wilson

Background: The barbell back squat is an essential movement in any weightlifting program, and when done correctly, provides increases in muscular strength, muscular power, and functionality.

Experienced weightlifters often use weightlifting shoes to elevate the heel and reduce the need for flexion at the ankle, allowing for a more upright torso, which may increase the lifters stability.

Objective: Our project's aim is to compare the lifter's stability while performing a barbell back squat, (1) barefoot and (2) wearing Olympic weightlifting shoes. Methods: Four experienced lifters (aged 22-24), will perform five repetitions of the barbell back squat, to parallel, at 50% of their 1RM, on a force platform, under each condition (foot placement; neutral vs externally rotated and barefoot vs weightlifting shoes). Total anterior/posterior forces will be used to measure stability under these conditions. Hypothesis: Weightlifting shoes, with external foot rotation, will show an increase in stability.

30. Differences in Ground Reaction Forces Between Obese and Non-Obese Individuals

Shane Carlson, Sai Praneeth Muthamsetty, Abhishek Handa, Zalak Modi
Faculty Advisor: Daniel Wilson

Abstract: The aim of our study is to compare ground reaction forces in normal BMI (18.5-24.9) vs. obese BMI (>30) individuals. Background: Research suggests that obese people have higher ground reaction forces created by obese individuals may lead to increased levels of discomfort or pain when walking. Methods: six subjects 20 to 30 years old (three-obese/three-normal BMI), will walk at a pace of 85 steps per min paced by a metronome and will strike the dominant foot on the force plate. Each subject will perform two trials. Three-dimensional (A-P, M-L, Vertical) ground reaction forces will be

measured and compared to determine which force component is most associated with differences in body composition.

OCCUPATIONAL THERAPY

31. Factors Influencing an Infant's Length of Stay and Time to Full Oral Feeding in the Neonatal Intensive Care Unit

Rebecca Althoff, Taylor Ambra, Brianna Bentley, Sid Marshall, Ashlea Cardin, Jessica Willis
Faculty Advisor: Ashlea Cardin

For premature infants in the Neonatal Intensive Care Unit, feeding is a complex task. Multiple factors affect length of stay (LOS) and time-to-full oral feeding (TTFF). Researchers employed a retrospective chart review to examine how 14 primary and 10 secondary predictor variables influenced LOS and TTFF, if variables influenced LOS and TTFF in the same way, and how LOS and TTFF were related. Stratified random sampling identified 150 infants meeting age-range and medical inclusion criteria. Researchers used multiple- and simple linear regression and Pearson's correlation analyses. Gestational age, birthweight, type of respiratory support, number of breastfeeding episodes, number of feedings offered by either professionals or family, and number of distinct caregivers significantly influenced LOS and TTFF. LOS and TTFF were directly correlated ($r = .87$, $p < .001$). Seven secondary variables were also predictive, indicating an infant's LOS and TTFF is dependent upon various intrinsic and extrinsic factors. To support shorter LOS and TTFF, professionals should understand the impact of comorbidities on infant feeding progression, promote continuous family involvement, and advocate for consistency in caregivers and feeding practices.

32. Supporting Developmental Milestones for Amish Children: Application of the Canadian Model of Occupational Performance-Engagement (CMOP-E)

Megan Frey, Rachell Maue, Emily McKinzie, Ashlea Cardin

Faculty Advisor: Ashlea Cardin

Background: Expanding Amish communities have an increasing need for accessible, evidence-based healthcare and rehabilitative services, especially for pediatric populations. **Method:** Master of Occupational Therapy student researchers used the Matrix Method (Garrard, 2022) to organize and conduct a rigorous health science literature review focused on the developmental needs of Amish children, occupational therapy practitioners' care for this culturally diverse population, and the utility of the Ages and Stages Questionnaire as a developmental screening tool. **Model Explication:** Researchers utilized the Canadian Model of Occupational Performance and Engagement (CMOP-E) to explicate an occupation-based response to meet the needs of Amish children and envision a culturally responsive developmental screening program within the community.

Conclusions: With a focus on Amish populations, the CMOP-E was a useful tool to analyze spiritual, personal, environmental, and occupational factors that are necessary to ensure culturally responsive healthcare. Findings support use of the CMOP-E to explicate the needs of a culturally distinct population and inform the role of pediatric occupational therapy within rural, community-based settings.

33. An Exploration of Birth Method and its Influence on Sensory Development: A Literature Review

Kelsey Luedecke, Armetta Loveless, Maya West

Faculty Advisor: Ashlea Cardin

Abstract: It is unknown how birth method shapes future sensory processing capacities. There is little evidence of the cause of sensory processing difficulties or how perinatal sensory experiences may impact a child's ability to perform meaningful activities. This study aims to (1) provide a

comprehensive review of evidence pertaining to early sensory development, (2) explore the impact of birth method on future sensory processing, and (3) inform occupational therapists working in antenatal, perinatal, and postnatal settings. Using the Matrix Method to structure the organization of the review (Garrard, 2022), researchers synthesized findings focused on birth method and sensory development, which can inform occupational therapists working with mothers and babies. These provisional and inconclusive findings suggest more research should take place surrounding birth method and sensory processing difficulties.

34. Understanding Feeding Complexity and Culture in the NICU: A Qualitative Study

Allison Petry, Paige Conner, Kasey Hoelscher, Hannah Hedrick, Ashlea Cardin

Faculty Advisor: Ashlea Cardin

While much has been published about family and infant contributions to feeding, less is known about neonatal professionals' perspectives on feeding complexity. Researchers employed a descriptive qualitative design to explore roles, feeding culture, aspects of skillful feeding, and enablers and barriers influencing feeding within the Neonatal Intensive Care Unit. Thirteen interdisciplinary professionals participated in 1 of 4 focus groups. Transcribed interviews were thematically coded; cross-case analysis, reflexivity, and triangulation promoted research integrity. Three activity-focused feeding themes emerged: 'doing,' 'doing with others,' and 'doing for others.' Feeding success was attributed to familiarity with the infant and family, self-efficacy, specialized education, collaborative communication, and "knowing" the infant. In promotion of feeding success, professionals may advocate for caregiver continuity and infant-driven feeding, encourage continuous parent involvement, and facilitate effective interdisciplinary collaboration.

PHYSICAL THERAPY

35. Effectiveness of Virtual Reality Based Physical Therapy Treatment on Urinary Incontinence: A Case Report

Abigail Denton, Riley Lekarczyk, Felicia Raybourn, Megan Woolverton, Patricia Cahoj, Sean Newton, Jason Shaw, Kyle Donahue, Cade Sexauer
Faculty Advisor: Patricia Cahoj

Purpose: This study investigated the effectiveness of WiiFit® as an intervention for urinary incontinence (UI). **Methods:** A 59-year-old female with self-reported UI performed WiiFit® games for 30 minutes, three times a week for six weeks. **Intervention** included seated balance activities for ten minutes on the Downhill Ski Slalom, ten minutes on the Tilt Table, and ten minutes on the Penguin slide. The Kings Health Questionnaire, ICIQ UI-SF, and ICIQ-OAB questionnaires were utilized to assess pre- and post-test UI and its impact on quality of life. **Results:** Comparison of pre- and post-test questionnaire scores improved on the ICIQ-OAB from 37 to 17 and ICIQ-UI-SF from 18 to 10. The Kings Health Questionnaire showed decreased UI and physical limitations contributing to improved sleep and an overall improvement in her perception of quality of life. **Conclusion:** The utilization of WiiFit® resulted in overall improvements in UI and in quality of life demonstrating that WiiFit® may be an effective treatment option for this condition. Additional research is warranted to further investigate the efficacy of this treatment.

36. Effect of Style of Hip Flexor Stretching on Gait Characteristics for Patients Using Prostheses After Dysvascular Transtibial Amputation

Giovanina Bohn, Katie Gorman, Jasmine Crawford, Christopher Schlotzhauer, Trevor Thier, Taylor Chase
Faculty Advisor: James Hackney

Individuals following a transtibial amputation are at risk to develop a hip flexion contracture which may adversely affect future ambulation with a prosthesis. Traditionally, patients have been advised to lie

prone to maintain or improve hip extension, however this position has been shown to facilitate compensatory pelvic tilting. Recent research showed that the modified Thomas position was more effective in bringing involved side hips further into extension than lying prone.

In this study, patients will be recruited following dysvascular transtibial amputation in a modified consecutive style. Patients will be divided into two groups of 40, with one group stretching the hip flexor musculature through prone lying and the other stretching in the modified Thomas position. After four weeks, participants will undergo instrumented three-dimensional gait analysis using the Motion Analysis Optical Motion Capture System. This study aims to determine whether stretching of the hip flexor muscles using the Modified Thomas Position will result in improved step length, symmetry, walking velocity, and maximum hip extension angle during gait in patients with dysvascular transtibial amputation compared to those using the prone lying position.

37. Effects of the Backalast on Trunk Proprioception: A Within-Subjects Study

Jon Tallerico, Matt Palmer, Ashleigh Waltz, Drew Hall, Kyle Stringer
Faculty Advisor: James Hackney

INTRODUCTION: Backalast is a compression jacket that is intended to improve posture and proprioception of the trunk and shoulder girdle for dancers and dance students during dance training. **PARTICIPANTS:** Fifteen students from the Department of Theatre and Dance at Missouri State University participated (4 male, mean age 19.9 ± 1.4 years old). **METHODS:** The dependent variables of lumbosacral angle and vertical alignment of the trunk of each participant was measured using motion capture analysis before and after completion of a series of trunk movements, comparing the dependent variables within-subject with paired t-tests. The order of whether Backalast or control shirt was worn first was alternated between participants. **RESULTS.** The pre/posttest difference in lumbosacral angle wearing the Backalast was 0.8

degrees \pm 0.8 degrees, but for the control shirt, the differences was 1.8 degrees \pm 1.4 degrees, $p = 0.034$. The difference in vertical alignment was not significant.

CONCLUSION: This study supports the claim that the Backalast can help enhance trunk proprioception when compared to the control compression shirt, although it did not change the angle at which the participants held their trunks.

38. Can a Geriatric Simulation Activity Change Attitudes Toward Aging Individuals?

Brian Bartletti, Alison Golladay, Jaimie Kuchem, Vitoria Weber

Faculty Advisor: Marcia Himes

Purpose: To expose first-year Doctor of Physical Therapy students to older adult limitations via a geriatric simulation activity.

Methods: The UCLA Geriatrics Attitudes Scale (UCLAGA) was completed before and after simulation activities. A mobility activity was completed sans impairments, then participants donned a geriatric simulation suit and completed the same mobility course and several Instrumental Activities of Daily Living (IADL) activities (taking medications, etc).

Results: A 2 (Group; males vs females) X 2 (Test; pre vs post) ANOVA revealed significant differences between pretest and post-test scores ($F(1,37) = 26.87$, $p < .001$; $\eta^2 = .27$). There was a significant increase from pretest to post-test (Mean: males 51.63-54.42; females 51.51-53.65). No gender by test interaction resulted ($F(1,37) = 0.45$, $p = .50$; $\eta^2 = .006$).

Conclusion: Simulation resulted in higher post scores on the UCLAGA, indicating a more positive attitude toward aging. As participants develop professionally, this activity could promote better engagement and communication with older adults, as well as change student perceptions related to working with the geriatric population and create a more empathetic practitioner.

39. Can Vestibular Rehabilitation and Virtual Reality Training Reduce the Frequency and Intensity of Motion Sickness? A Case Study

William Smith, Carson Ray, Leigh Ann Craig, Brielle Okenfuss

Faculty Advisor: Barbara Robinson

Although motion sickness (MS) affects nearly one-third of individuals who travel by land, sea, or air, little information exists regarding prevention or management. Investigators have determined that the underlying mechanisms involved in motion sickness include a conflict of visual and vestibular information. The purpose of this case study is to determine if vestibular rehabilitation (VR) and virtual reality training (VRT) with the Bertec Balance Advantage (BBA) can reduce the frequency and intensity of symptoms associated with motion sickness. Traditional VR treatment includes adaptation exercises, habituation exercises, and vision training that will be supplemented by VRT on the BBA. The BBA uses an immersive visual field to stimulate the visual system. The projected image is concentric circles (optokinetic test) and can be changed during treatment for visual flow to a grocery store aisle.

An 8-week program of VR and VRT was completed by a 47-year-old female with a history of MS. Although her symptoms were not resolved, the frequency, intensity, and duration of symptoms decreased. The ability to change the visual background during VRT may ultimately reduce the frequency, intensity, and duration of symptoms associated with MS.

40. Balancing During Walking With Perturbations While Performing an Auditory Task

Justin Nguyen, Sydney Schutte

Faculty Advisor: Elizabeth Williamson

Background and Purpose: Balance during walking with perturbation of the center of mass (Gray et al. 2020) and when completing a tracking task (Zettel et al. 2008), has been studied. This study examined how auditory, executive function tasks affect reactive walking balance.

Methods: This study consisted of 36 participants. Each participant completed 3 walking trials (control; simple auditory, executive task; complex auditory, executive task) on a treadmill which randomly moved forward, backward, right, and left at 6 separate degrees of perturbations.

Results and Discussion: Significant effects were noted for balance strategies in the control, simple, and complex executive function conditions. At lower perturbation levels, simpler balance strategies occur more than expected by chance in the left, and right direction. On the higher-level perturbation levels, more complex balance strategies were needed to maintain balance. No significant differences were noted between control, simple and complex executive function conditions.

Conclusion: Our findings justify further study of balance during walking with perturbation and define parameters for studies of older adults with and without executive function deficits.

PSYCHOLOGY

41. Evaluating the Perceived Severity of Different Crimes and its Effect on Reentry Support

Maggie Adler, Jordan Belisle
Faculty Advisor: Jordan Belisle

Research has shown reentry support reduces rates of recidivism (Yang, 2017). In this study we evaluated the perceived severity of crimes and its effect on how much assistance people believe prisoners who committed those crimes should receive upon reentering society. Participants included undergraduate students enrolled in a psychology course at a Midwestern University. In this study participants completed a multi-dimensional scaling task where they related crimes on a scale of 1 to 10. Participants also filled out a discounting task in which they determined how much monthly assistance a prisoner should receive based on the crime they committed. We found that participants chose to give less monthly assistance to prisoners who committed a crime they perceived as more severe. This study aligns with diversity and inclusion because prisoners are often mistreated in the system (Butterfield, 2004) and minorities are

incarcerated at disproportional rates (Jeffers, 2019). This study shows preliminary data that can be used to advocate for assistance upon reentry for prisoners.

42. Evaluating the Influence of Relational Behavior on Climate Discounting of the Point of No Return

Jaelyn Compton, Breanna Lee, Jordan Belisle, Dana Paliliunas, Jenna Huskey
Faculty Advisor: Jordan Belisle

The present study extended behavioral economic discounting research on public policy preferences related to climate change (Belisle et al., 2021) and relational consumer behavior of common household items (Matthews et al., under review). In this study, we presented choices between two policies, A and B, where A included restrictions on high emission behaviors such as driving and B imposed no restrictions. Option A carried a delay to the climate point of no return (i.e., point of climate non-recoverability) and Option B ensured a point of no return in 15 years based on current climate science estimates. In addition, Option A was presented with an unfamiliar symbol A and Option B was presented with an unfamiliar symbol B as arbitrary choice point features. We then conducted a respondent-type relational training procedure to pair pro-climate stimuli with the symbol A and anti-climate stimuli with the symbol B and re-administered the climate discounting task. Results have implications for promoting of climate policy as we rapidly approach climate non-recoverability.

43. Measuring the Effects of Meditation on Impulsivity Through Various Noise Contexts

Emily Hermann, Jaelyn Compton, Amanda Middleton, Taylor Reynolds, Madison Mitzak, Madeline Caughron, Mamata KC, Kaylee Liley, Breanna Lee, Jordan Belisle, Dana Paliliunas
Faculty Advisor: Jordan Belisle

Stress can affect a person's health both physically and mentally. Increased rates of stress may lead to higher rates of hypertension, unhealthy habit formation, and even changes within brain structure

and connectivity (McEwen, 2008). Meditation has been shown to change brain processes and provide better consistent attentional focus, enhanced sensory processing, and reflective awareness of sensory experience (Kilpatrick, 2011). The purpose of the current study is to identify if feelings of stress and impulsivity due to noise conditions can be decreased following mindfulness meditation. Participants will complete a go/no-go task through a stressful noise context, then will complete the go/no-go task again during a peaceful noise context. Participants will then be randomly placed in a control group or intervention group. The intervention group will receive ten minutes of mindfulness meditation. The participants will complete the go/no-go task in both contexts again. The results of this study will evaluate if meditation serves as tool to reduce impulsivity. If so, people may benefit from incorporating meditation into their day-to-day life to combat the stress they experience from everyday noise conditions.

44. Flight or Fight: Evaluating the Relationship between Climate Action, Anxiety, and Psychological Flexibility

Lauren Hutchison, Jordan Belisle
Faculty Advisor: Jordan Belisle

A recent report from the Intergovernmental Panel on Climate Change (IPCC, 2021) states that increases in greenhouse gas (GHG) concentrations, as well as the warming of atmospheric temperature, ocean, and land, are undeniably caused by human actions. Climate anxiety could serve to either increase or decrease actions to resolve some climate change challenges and may be mediated by psychological flexibility as a behavioral process. In the current study, we recruited a representative sample of 500 participants using crowdsourcing platforms. Climate action was measured using two assessments, the Stanford Climate Change Behavior Scales and the EARTH-beta. Climate anxiety was measured using the Climate Anxiety Scale and psychological flexibility was measured using the Acceptance and Action Questionnaire 2. Results supported convergence of the two behavior scales supporting interrelatedness of pro-climate action, and a positive

relationship was observed between climate anxiety and climate action. Moderating analyses further suggest that participants who were both anxious about climate change and psychologically flexible were most likely to engage in climate action. Implications for climate policy are discussed.

45. Evaluating the Multiple Control of Unhoused Contributing Factors and Social Distance on Sympathy, Empathy, and Charity

Taylor Reynolds, Bentley Elliot, Madison Mitzak, Madeline Caughron, Breanna Lee, Jordan Belisle, Dana Paliliunas
Faculty Advisor: Jordan Belisle

Approximately 580,000 people in the United State were unhoused in the year 2022 (NAEH, 2022). Sympathy and empathy describe perspective-taking behaviors that can be interpreted from within a Relational Density Theory (RDT; Belisle & Dixon, 2020) framework and applied to analyzing factors controlling charitable behavior towards unhoused people. The study was conducted in two phases. First, participants completed a multidimensional scaling procedure (MDS) to develop a relational network model of causes of homelessness. Second, a multiple stimulus including the cause and the social distance of the unhoused person (scale of 1 to 100, where 1 is a person who is socially close and 100 is a person who is socially distant) was presented along with the hypothetical scenario where participants were given \$1000 and could give an amount ranging from \$100 to \$1000 to the unhoused person. Participants also indicated how sympathetic and empathetic they felt towards the unhoused person. Results produced a three-dimensional causality and social discounting model to analyze multiple control over sympathy, empathy, and charity expressed towards unhoused individuals.

46. The Relationship Between Self-Compassion and Mental Illness Stigma

Katelyn Frahm, Hallie Jones, Christie Cathey
Faculty Advisor: Christie Cathey

Mental illness stigma leads people to psychologically distance themselves from those with mental illness out of fear of identifying with the stigmatized group. This distancing can further perpetuate negative attitudes, reifying mental illness stigma (Schimmel et al., 2000). Self-compassion involves treating the self with kindness rather than harsh self-criticism in times of suffering (Neff, 2003). This study examined how engaging in self-compassion might reduce prejudice toward those with mental illness by targeting individuals' relationship with their own mental health. Ninety-three Introductory Psychology students were assigned to one of three conditions. Those in the self-compassion condition completed a writing prompt where they recalled a time when they experienced extreme worry and then wrote about it using components of self-compassion. Participants in the two other conditions wrote about their morning routine or a worry without the self-compassion prompt. All participants completed measures of self-compassion, prejudice toward those with mental illnesses, and attitudes toward seeking help for a mental illness. Results revealed no differences by condition, suggesting the need for longer-lasting self-compassion interventions.

47. Mindfulness Among College Athletes

Evan Reichard, Mattis Koch, Victory Ifah, Christie Cathey
Faculty Advisor: Christie Cathey

Mindfulness is present-moment awareness that brings attention to one's thoughts, feelings, and sensations and to the experiences of one's environment (Cheavens et al., 2022). The benefits of mindfulness practice include greater well-being and lower levels of negative affect and stress (Tomlinson et al., 2018). Increased mindfulness among athletes can lead to increased flow experience and self-confidence (Kaufman et al., 2009) and decreased competition anxiety (De Petrillo et al., 2009). Given

the benefits of mindfulness training, our goal is to design and test the efficacy of a mindfulness intervention for MSU student athletes. We first conducted a pilot study to examine student athletes' openness to and opinions about mindfulness interventions, and to determine whether willingness to participate in mindfulness interventions differs by gender or other demographic factors. A sample of NCAA athletes completed an 118-item survey that included measures of attitudes toward mindfulness training, awareness, acceptance, self-stigma, conformity, resistance to change, and emotional intelligence. This poster presents data from the study and discusses how findings inform plans for designing mindfulness training for local student-athletes.

48. The Mediating Role of Academic Self-Efficacy on School Context and Academic Performance

Carlos Abrams, Michael Houston Jr., Ashley Hall, Leslie Echols
Faculty Advisor: Leslie Echols

The purpose of this study was to examine the association between school context and academic performance and how academic self-efficacy may play a role. Previous studies have shown that important school context variables such as school liking and belonging, perception of school safety, and perceptions of school fairness contribute to better academic performance (Tinto, 1975; Kim, 2020). In this study, we tried to better understand the causal mechanisms of those associations. Specifically, we explored the mediating role of academic self-efficacy. The results demonstrated that academic self-efficacy mediated the association between all three school context variables and academic performance. By using a novel approach to examining school context and academic performance, this study reveals that school context may only influence academic performance indirectly through other important academic adjustment variables.

49. The Role of Gender Identity in Bullying and Victimization in Middle School

Laura Adams, Ashley Hall, Leslie Echols
Faculty Advisor: Leslie Echols

The purpose of this study is to better understand the experiences of bullying and victimization among youth who identify as non-gender binary in middle school. This research is part of a larger study of peer relations and students were selected for the current study if they chose a non-binary response to the self-reported gender item on the questionnaire. Out of approximately 350 students who responded to the questionnaire, four students self-identified as non-binary. Given the small sample size, this study is descriptive in nature and explores important indicators of social adjustment in middle school including bullying, victimization, and adjustment outcomes including mental health symptoms, loneliness, self-worth, and social anxiety.

50. The Examination of Attributions of Victimization as Predictors of Academic Self-Efficacy

Rosie Buckner, Ashley Hall, Leslie Echols
Faculty Advisor: Leslie Echols

Peer victimization results from negative, hostile interactions (e.g., bullying) that occur amongst classmates. Its effects are detrimental to an adolescent's self-efficacy, ability to relate to their peers, mental health, academic performance, and overall well-being. Victimization intrinsically motivates students to question and discover why negative events happen to them, leading them to make attributions. Attribution theory provides a lens through which we can categorize and examine these attributions, allowing us to better understand the implications they may have. For example, attributions about victimization related to dispositional factors are more likely to result in poor adjustment than attributions related to situational factors. It is important to understand the effect that specific attributions have on adjustment as such attributions may allow us to predict and eventually prevent detrimental effects that may occur. The present study focuses on the role of attributions in

academic adjustment and aims to examine specific attributions of victimization as predictors of self-efficacy and perceived academic performance from a sample of 336 middle school students.

51. The Correlation Between Perceived Peer Conformity and Social Anxiety in Middle School Students

Callie Cochran, Cassidy McCann, Ashley Hall, Leslie Echols
Faculty Advisor: Leslie Echols

Adolescence is a time of heightened susceptibility to peer influence, particularly among same-sex peers (Sanders, 2013). It is also a time of heightened social anxiety characterized by excessive fear of interpersonal scrutiny and thoughts of humiliation and embarrassment (Erath, Flanagan & Bierman, 2007; Ghandour et al., 2018). Previous research suggests that risk-averse behaviors, such as the tendency to avoid scrutiny of others through copying of the unanimous majority, are more likely to be displayed by socially anxious individuals. Thus, the purpose of this study was to examine the relationship between social anxiety and perceived school-wide conformity in adolescence. This study draws on a sample of 336 middle school students participating in a larger study on peer relations.

52. Comparing the Perceived Well-Being of Collegiate Athletes

Madeline Caughron, Melissa Fallone
Faculty Advisor: Melissa Fallone

The well-being of athletes is widely discussed in the popular media as professional athletes come forward with their mental health struggles and colleges try to address the complex issues facing athletes. Little research exists about social comparisons student athletes make, comparing themselves with their fellow collegiate athletes. Though common, engaging in social comparisons can have adverse effects on ones' self-esteem and general well-being, both physically and mentally. This study utilized a link to an on-line questionnaire sent to student collegiate athletes that included the Short General

Health Questionnaire (14-SGWB; Longo et al, 2018) and the Sport Mental Health Continuum - Short Form (Sport MHC-SF; Foster, 2018). To examine social comparisons, participants completed each measure a second time from the perspective of their fellow collegiate athlete. Findings from 46 participants did not support the hypothesis that collegiate athletes believe their fellow collegiate athletes would report higher levels of general well-being and sports mental health than themselves. Instead, the data indicate that athletes believe their fellow collegiate athletes would report lower levels of general well-being and sports mental health.

53. Clock Displays and Time Estimates

Emily Burns, Bogdan Kostic

Faculty Advisor: Bogdan Kostic

Clocks are necessary for timekeeping in modern life but very little research has explored the differences between analog and digital displays. Some previous research has suggested that digital displays are easier to read, but Paivio's (1978) results suggest that analog displays may be preferable for spatial tasks. The current study seeks to explore how estimates of time compare when dealing with analog and digital displays. Participants were students recruited from an introductory psychology class. They were randomly assigned to either an analog-display or digital-display condition. Then, on individual computers, participants estimated the amount of time left until the next hour by clicking and dragging a red circle on a slider without ticks. The procedure involved 36 trials in a random order. Results showed no significant difference in the accuracy of the estimates in the analog and digital display condition. However, participants were slightly faster to respond when viewing digital displays. Future research will explore time estimates under conditions of divided attention.

54. Collaborative Inhibition and Stereotype Threat

Mykah Doolin

Faculty Advisor: Bogdan Kostic

Collaborative memory has garnered an influx of research within the last decade as cognitive psychology extended its exploration of cognition beyond a single individual. Although collaborative memory appears to have some improvements on memory retention, it also impairs initial performance, a concept referred to as collaborative inhibition (Weldon & Bellinger, 1997). Previous researchers have identified various mechanisms which could factor into group inhibition, such as social loafing or social contagion errors (Rajaram & Pereira-Pasarin, 2019; Weldon & Bellinger, 1997). Additionally, Pepe et al.'s (2021) study on collective inhibition in ethnically diverse settings suggests stereotype threat to be a factored mechanism. This study extends Pepe et al.'s (2021) collaborative memory study on ethnic composition by changing the uniform condition to Black participants. The goal is to determine if stereotype threat contributes to collaborative inhibition and if so, to what degree.

55. Cry Me A River: The Relationship Between Empathy and Adult Attachment Orientation

Olivia Baron, Hannah Tritz, Hollie Bickel, Amber Massey-Abernathy, CaSandra Stanbrough
Faculty Advisor: Amber Massey-Abernathy

The current study aims to examine the complexities of adult attachment style and its influences on cognitive and affective empathy. Adults with insecure attachment styles, such as anxious or avoidant attachment, often have interpersonal difficulties and display lower levels of empathy (Péloquin et al., 2011). Although this finding is beneficial, empathy is examined only as a single construct. Empathy can be divided into two dimensions: cognitive (the ability of a person to take on the mental mindset of another person) and affective (the reaction of experiencing the emotions of others; Gladstein, 1983). In the current study, participants were given a series of questionnaires, including a Questionnaire of Cognitive and

Affective Empathy (QCAE) and the Adult Attachment Style (AAS) questionnaire. Regression analysis indicated significant relationships between affective empathy and anxious adult attachment style, cognitive empathy and avoidant adult attachment style, and between cognitive empathy and secure adult attachment style. Our findings conclude that adult attachment style may be a predictor of the type of empathy adults display.

56. Overcoming Depression: Functional Impulsivity in High-Risk Professions

Weston Phipps, Amber Massey-Abernathy
Faculty Advisor: Amber Massey-Abernathy

While depression has been thoroughly researched, there is little work on the relationship between depression and specific facets of impulsivity, while considering the riskiness of one's personal profession. When considering impulsivity, functional impulsivity is related to positive outcomes, such as opportunity seizing, while dysfunctional impulsivity is related to negative outcomes, such as inappropriate sensation seeking (Stoyanova & Ivantchev 2021). Correlational results showed statistical significance among BDI and Functional Impulsivity ($r = -.358, p < .001$), Functional Impulsivity and Dospert-recreational scores ($r = .388, p < .001$), Functional Impulsivity and Dospert-Health scores ($r = .275, p = .011$), Functional Impulsivity and Dospert-Financial Scores ($r = .323, p = .002$). Independent t-test results comparing high risk and low risk professions showed significance among Functional Impulsivity ($t(83) = 5.357, p < .001, d = 1.166$). The results suggest that as Functional Impulsivity scores increase, that depression scores would generally decrease. Independent t-tests results suggest that individuals within the risky professions group had statistically significantly higher levels of functional impulsivity, along with large effect sizes.

57. The Relationship Between Heart Rate Variability, PTSD Symptomology When Viewing Stressful Stimuli

Chandler Zimmerman, D. Wayne Mitchell, Paul Deal, Matthew D. Carroll, Minh Q. Nguyen, Samonte Jennings
Faculty Advisor: Wayne Mitchell

Previous research has provided support for evoked heart rate (HR) as a measure of cognition, with decreases in HR corresponding to encoding of information and increases in HR corresponding to processing of previously encoded information. The present study measured evoked HR changes to stressful and neutral visual stimuli and assessed whether measures of PTSD were related to evoked HR. The primary hypothesis was that changes in HR in response to the stressful stimuli would differ for people scoring high in PTSD, reflecting different cognitive activity. In other words, participants scoring high on these scales would encode and process the stressful stimuli differently and that this difference in processing would manifest in the magnitude of evoked HR. Neutral stimuli evoked HR acceleration whereas stressful stimuli evoked HR acceleration followed by HR deceleration. Also, individuals who scored high on the PTSD measures had greater evoked HR in response to the stressful stimuli. Although not statistically significant, heart variability (HRv) and PTSD symptomology measures were found to be correlated positively with evoked HR when viewing the stressful stimuli.

58. Investigating Relations Regarding the Religious Ought and Actual Self Using a Relational Density Theory Approach

Kam Barker
Faculty Advisor: Dana Paliliunas

Religiosity may produce positive outcomes (e.g., greater life satisfaction, hope, and optimism) or negative outcomes (e.g., psychological distress), especially if the one's identity is in conflict (Koenig, 2001). This distress, as explained by self-discrepancy theory, is caused by inconsistency between the identity of the "actual" self (attributes the individual believes they possess) and the identity

of the "ought" self (attributes the individual believes they ought to (or should) possess) (Higgins, 1987). Exploring stimulus relations related to these "selves" using a relational density framework (Belisle & Dixon, 2020) may provide insight regarding relational networks including the selves and agitation-related emotions. In the present study, we utilized two multidimensional scaling procedures (MDS) to analyze reported relations among these "selves" from both a life experience and religion framework. We analyzed this data, comparing the relations among those who report high and low degrees of religiosity. The differences between religious and nonreligious individuals' responses and potential future avenues to explore the impact of religious experience on relations regarding self will be discussed.

59. Measuring the Effect of a Brief Values Intervention on Values-Driven Relational Responding to Support Unhoused Persons

Maddie Brutton, Haley Herrera, Logan Huckstep, Emily Hermann, Jaelyn Compton, Taylor Reynolds, Ryan Moser, Breanna Lee, Dana Paliliunas, Jordan Belisle
Faculty Advisor: Dana Paliliunas

Houselessness remains a prominent issue throughout the United States. Those who are unhoused often face biases and microaggressions (Torino & Sisselman-Borgia, 2016), which may impact their access to support (Ruff Institute of Global Homelessness, 2017). The present study sought to examine relations among a person's identified values and helping behaviors for unhoused individuals using a Relational Density Theory framework (Belisle & Dixon, 2020). Participants completed a task using a multidimensional scaling procedure to analyze the relationship among stimuli at pre- and post-test, including their reported values, behaviors that support these values, and helping behaviors that support those who are unhoused. Participants were randomly assigned to two groups, completing a values-based intervention or control task. Results are interpreted in terms of the strength of relations among values and helping behavior stimuli and reported willingness to engage in

behaviors that support individuals who are unhoused. We discuss avenues for future research that could be useful to guide initiatives to improve support for individuals without housing informed by relational responding and valued action.

60. An Evaluation of Implicit Biases and Intersectional Identities in Academia Within Psychology

Paige Hemming, Breanna Lee, Kam Barker, Madeline Caughron, Dana Paliliunas
Faculty Advisor: Dana Paliliunas

The lack of representation among women and marginalized racial groups in research and academia is documented (e.g., Li et al., 2018; Martin et al., 2022). The concept of intersectionality examines these issues and whether the interconnected experiences related to individuals' social identities implies interactive or separate consequences (Connor et al., 2022). The current project utilizes Relational Density Theory (RDT; Belisle & Dixon, 2020), where complex relational networks are examined, for example, as they relate to racial and gender bias. We analyze these biases regarding underrepresented groups in academia. Stimuli include images of people representing a variety of racial and gender identity expressions, adjectives, scholarly activities, and stereotypically gendered occupations; these were presented in stimulus-stimulus pairings and the strength of the relations were interpreted using a multidimensional scaling (MDS) procedure. Results indicate complex relations along the dimensions of gender, race, and professional activity. An account of implicit bias in academia must be informed by an intersectional perspective; this study provides initial exploration. We discuss how biases may contribute to underrepresentation in academia.

61. Values-Based Classroom Intervention for Fostering a Productive Academic Environment

Breanna Lee, Dana Paliliunas

Faculty Advisor: Dana Paliliunas

As the demand for mental health services rises, there is an increased need for preventative measures involving social support for college students.

Research has suggested Acceptance and Commitment Therapy (ACT) can be used to treat a variety of mental health-related symptoms (Hayes & Strosahl, 2005). Specifically, its focus on values-based living provides the opportunity for individuals to develop flexibility and motivation for purposeful action (Hayes, 2005). These skills may serve as a useful component in helping college students develop values-oriented academic behavior. Atkins and colleagues (2019) introduced the integration of ACT in improving group prosociality through tools such as the collective ACT matrix. The combination of valued living in ACT and group connectedness in prosocial work provides an opportunity to create a productive environment for college students to operate in. The current study seeks to expand the use of valuing and prosociality to enhance the academic environment through brief interventions that are accessible for instructors to use in regular practice. Results are expected to provide information on how course instructors can create a space for students to learn and feel supported in.

62. Nutritional Discounting and the Multiple Influence of Price and Delay on Health-Related Choices

Ryan Moser, Emily Hermann, Kaitlyn Hui, Amanda Middleton, Kaylee Liley, Dana Paliliunas, Jordan Belisle

Faculty Advisor: Dana Paliliunas

The present study extended on existing research on health-related choices from a behavioral economic framework as well as research on multiple contextual control (Belisle, Paliliunas, et al., 2018). Participants were presented with a series of hypothetical concurrent choices between a more nutritional hamburger meal and a less nutritional hamburger meal with the taste of both meal options

held constant. In a first block of questions, we manipulated the delay to receiving the more nutritional meal, where nutrition was expressed in terms of calories, protein, fats, and carbohydrates. Results showed that participants were more likely to select the healthier option with lower delays and that the probability of selecting the less nutrition meal increased as the delay to the healthier meal increased. We then manipulated the price of the healthier option ranging from \$10-\$50, and we obtained similar results where selecting the less nutrition meal increased as the price of the healthier option increased. These results support that delay and price are two economical factors that influence health related decision making with implications for engineering a healthier and more active society.

63. Making Social Media for Me: Black College Women, Social Media, and Identity Development

Whitney Akalugwu, Mykah Doolin, Riley Brady, Emily Lohrbach

Faculty Advisor: Ashley Payne

Social media has become an important contextual influence on the lives, experiences, and identities for youth in Generation Z (Gen Z). While the research in social media and identity development is rapidly growing, there is a dearth on the impact that it has on Black college women. The purpose of this study is to explore how Black college women (re)construct their gendered racial identities on social media. Utilizing a grounded theory methodology and analysis, four themes were found that illuminate the role of social media in the identity development process for Black college women. Implications for this study reflect the need for colleges and universities to note the added race-related stress that may impact their matriculation through their college years.

64. Respectability Politics: Black College Women Coping in Counterspaces

Riley Brady, Kerry Lambert, Sophie Wolken,
Madyson Wicks, Ashley Payne
Faculty Advisor: Ashley Payne

Coined by Higginbotham (1993), respectability politics is “the process by which privileged members or marginalized groups comply with dominant social norms to advance their group's condition” (Dazey, 2020). This study is part of a larger qualitative, youth participatory action research approach (YPAR) with Black college women mentors and Black female high school mentees. The following research questions will be addressed: (1) How has respectability politics influenced how Black women navigate a predominantly white institution? (2) How are young Black women (18-22) navigating the world around them in reference to respectability politics? (3) How does having counterspaces to discuss with peers impact the experience of Black women and the effects of respectability politics? Results from 25 pre- and post-program mentor interviews were analyzed through thematic analysis, and 3 themes were found: (1) influence of respectability politics on Black college women's identity and mental health (2) employing coping strategies such as code switching or Strong Black Woman schema to protect well-being (3) utilizing counterspaces (Black Girl Talks) and self-created counterspaces (social media) to counteract impacts of respectability politics.

65. Media Role Models: Black College Women and Identity Development

Emily Lohrbach, Mykah Doolin
Faculty Advisor: Ashley Payne

With Black girls and women being underrepresented in television, print, and movies, popular social media and Hip Hop figures emerge as secondary role models. Additionally, an effective role model might not only be a positive one; it is hypothesized that negative role models may be as beneficial as a positive one (Payne, 2020; 2022). Utilizing a Hip Hop feminist qualitative methodology, the purpose of this study is to explore Black women Hip Hop

and social media role models impact of gendered racial identity development of Black college women. The following research questions will be addressed: (1) How do media role models influence Black girls and women's identity development? (2) How do media role models inform how Black college women navigate their social worlds (i.e., social media, home, and educational settings).

66. Personality Moderate's Relationships Between Parental Perception and Views of Morality and Shame

Lauren Smith, CaSandra Stanbrough, Justin Moody
Faculty Advisor: CaSandra Stanbrough

This project examines the interaction between one's personality, perception of parenting, moral identity, and responses to guilt and shame. It explores the complex process of reacting to moral shame. Students at MSU completed parenting questionnaires, guilt and shame proneness questionnaires, and responded to Kohlberg's (1981) moral dilemma. Regression analysis indicated that positive mother parenting traits explain 14% of the variation in shame-withdraw. A moderation analysis also revealed that participants' neuroticism moderated this relationship. This indicates that having a mother with warmth, structure, and autonomy support decreases shame withdraw during moral shame. However, if the participant is high on neuroticism, they will increase shame withdraw. Regression analysis indicated that perception of negative father parenting traits explain 14% of the variation in moral integrity. A moderation analysis also revealed that participants' conscientiousness moderated this relationship. This indicates that having a father with rejection, chaos, and coercion increases the self-report of moral integrity. However, if the participant is high on conscientiousness, they will report lower moral integrity.

67. Physiological and Self-Reported Sensory Measures' Relationship With Broad Autism Phenotype Traits: A Research Proposal

Mykah Doolin, Paige Hemming, Lyric S. Arvizu, Salma Muslim, Minh Nguyen, Monique Arroyo, Carly A. Yadon

Faculty Advisor: Carly Yadon

It was not until the DSM-5 that sensory processing was added to the diagnostic criteria for autism spectrum disorder (ASD). First-degree relatives of individuals with autism may experience phenotypic characteristics of ASD such as reduced interest in social interaction, termed the broad autism phenotype (Hurley et al., 2006). Limited research suggests that differences in sensory processing may be related to ASD traits (Robertson & Simmons, 2013). This proposed study aims to replicate past findings and extend them using additional sensory scales, including both experiential and physiological measures of sensory gating. Participants will complete a paired-tone event-related potential (ERP) paradigm followed by sensory questionnaires. In addition to looking at the relationship between sensory processing and traits associated with ASD in the full sample, the sensory processing of participants with a first degree relative with ASD will be compared to participants who do not endorse having a relative with ASD. Understanding individualized sensory processing needs can help create more sensory inclusive environments and allow individuals to better support themselves.

68. Guided Meditations: Examining Social Attitudes and Implicit Racial Bias

Emily Lohrbach, Alexis Snodgrass, Salma Muslim, Amber Escobar, Chaunce Morgan, Evan Reichard, Samantha Bumgardner, Andrea Gray, Adena Young-Jones

Faculty Advisor: Adena Young-Jones

Recent research has demonstrated that meditation can decrease implicit bias (Lueke & Gibson, 2016; Oyler et al., 2021). Minimal research compares loving-kindness meditations with success, confidence, and self-esteem meditations on students' social attitudes, and racial implicit bias. The present

study evaluated the role of self-esteem meditations, loving kindness meditation, and a control condition. Participants (N = 63) completed a pre-survey (Implicit Association Test for Race (IAT), Self-Esteem and Psychological Well-Being Scale, Self-Compassion Scale, Diversity and Social Justice Scale, Questionnaire of Cognitive and Affective Empathy, Basic Psychological Needs Scale) and were randomly assigned to one of three audio conditions, followed by a post-survey consisting of the previous scales. Results found that loving-kindness meditation reduced implicit racial bias whereas the control condition increased implicit bias; no significant results were found for self-esteem meditation. Data collection will continue in order to better inform universities on strategies that will potentially reduce students' racial implicit bias.

PUBLIC HEALTH & SPORTS MEDICINE

69. Quality Improvement (QI): Athletic Trainers and Post-Concussion Anxiety Treatment

Sam Naughton LAT, ATC, Ashley Schouten LAT, ATC, Arianna Myers ATS, Mariah Mitchell ATS, William David Carr PhD, ATC

Faculty Advisor: W. David Carr

Context: Anxiety is a mental health issue contributing to concussion management and recovery. Based on a previous study, athletic trainers (ATs) have indicated decreased confidence in managing mental health due to a lack of resources for concussion patients with anxiety.

Methods: A series of education modules were created to provide ATs with the resources to comfortably manage concussions affected by anxiety. Pre- and post-surveys were developed to measure the change in comfort (8 questions), knowledge (11 questions), and use (6 questions) of anxiety treatments. A sample of convenience was selected in the local community to pilot test the intervention.

Results: Four participants took the pre-survey, indicating on a scale of 1-5 the comfort (2.93, ± 1.13), knowledge (1.38, ± 1.20), and treatment use (3.23, ± 0.83). One participant completed the study showing an increase in ATs' comfort (pre=1.45,

post=1.83) but no increase in knowledge (pre=1.87, post=1.87) or use (pre=2.83, post=1.83). We believe that as more ATs complete the study, the findings will show an increase in all topics.

Discussion: The low response rate indicates that when given the resources, ATs are reluctant to address anxiety related to concussion management.

70. Average Vacuum Pressure With Two Therapeutic Cupping Techniques

Cassidy Schwentker, Hallie McCarn, Olivia Acheson, Elisha Robinson, Tona Hetzler, David Carr

Faculty Advisor: W. David Carr

Context: This study aims to explore the vacuum pressure utilized in two therapeutic cupping treatments among certified athletic trainers.

Methods: A convenience sample of 12 certified athletic trainers participated in this cross-sectional design study. Three trials of static and three trials of dynamic cupping applications using a plastic cup connected to a pressure gauge, a manual pump, and a piece of synthetic skin were recorded for each participant. A descriptive analysis including averages and standard deviations was calculated for each participant. A questionnaire was used to identify participant demographics, training, and experience.

Results: Static cupping trials averaged 261.58 (+/- 8.5) mmHg. Dynamic cupping trials averaged 172.08 (+/- 9.7) mmHg. The number of years certified as an athletic trainer ranged from 0.5-22 years with an average of five years. The number of years clinicians practiced cupping therapy ranged from 3-10 years with an average of five years. All participants practice in the collegiate setting.

Conclusion: Most participants had a high variance between cupping trials for both static and dynamic applications. Further research is needed to confirm these findings.

71. The Prevalence of Symmetry in the Crouching Cheng Shape

Jessica Lew, Haley Arellano, Mariah Edwards, Thomas Havey

Faculty Advisor: McCall Christian

Functional movement is necessary to perform activities of daily living. Asymmetry is seen as a limitation to functional movement, but there is limited research on the prevalence of asymmetry in the population. The objective of this study is to utilize the Shapes of Movement (SoM) profile to observe the prevalence of asymmetry. Participants (n=100, age=22.8±6.3yrs) had no current injury or illness that was contraindicative to performing the Crouching Cheng shape (CCS): an asymmetrical single-leg stance in a half squat. Participants performed the CCS on the right and left sides and were assessed if they passed or failed the shape based on established criteria. Symmetry occurs when the participant passes or fails the criteria on both sides. Asymmetry is present when the participant passes the criteria on only one side. In the population studied, 87% presented with symmetry, while 13% presented with asymmetry. Of the symmetrical participants, 65% (n=65) failed on both sides, while 22% (n=22) passed on both sides. Using the SoM profile criterion, non-injured individuals show symmetry in the CCS. Despite the general assumption that humans are side-dominant, individuals can show symmetry in asymmetrical functional movements.

72. Does Extended Reality Intervention Improve Patient-Reported Outcomes in Musculoskeletal Injuries Compared to Traditional Interventions?

Jihyun Oh

Faculty Advisor: McCall Christian

Clinical scenario: Extended reality (XR) is a global term referring to augmented reality (AR) and virtual reality (VR) and is used in various fields. In sports rehabilitation, it is mainly used for injuries of the nervous system. However, compared to neuromuscular injuries, there are relatively few studies on the rehabilitation of musculoskeletal patients, and the results are not clear yet. The effect

of XR intervention on musculoskeletal injuries can be proved by patient-reported outcomes and the results can be used to replace conventional treatments.

Summary of Key Finding: Four randomized controlled trials were included for critical appraisal. The four studies investigated patient-reported outcomes on musculoskeletal injuries using XR interventions. Most studies concluded that XR made returning to daily activities faster, and the patient's level of activity improved quicker than in the treatment-as-usual group.

Clinical Bottom Line: XR intervention has a positive effect on the rehabilitation of various musculoskeletal patients. Including post-op patients, chronic pain, upper and lower extremities injury patients reported rapid functional recovery and return to daily life through XR intervention.

73. The Prevalence of Symmetry in General Populations Using the Deadlift Shape

Peyton Davis, Megan Elsbree, Megan Coffman, Sarah Wieck, Tona Hetzler, Brandon Hetzler, McCall Christian

Faculty Advisor: Tona Hetzler

Context: This study aims to look at whether symmetry is present in an asymmetrical stance. Methods: A cross-sectional study conducted on a university campus consisted of 105 voluntary participants (23.08 ± 6.82 years), gender (male= 51; female=52; prefer not to say= 2), and previous medical conditions who completed a health questionnaire. One hundred of the 105 participants qualified to take a movement profile consisting of the bottom of the deadlift shape and the offset bottom of the deadlift shape bilaterally. Objective pass or fail criterion had been previously established. The statistical analysis employed included percentages, Pearson r correlation, and chi-square.

Results: Left and right offset deadlift resulted in equal pass/fail rates (pass = 60%, and fail = 40%). The chi-square showed a statistically significant relationship between left and right offset deadlifts ($\chi^2(1) = 62.67, p < 0.001$) with a positive, significant correlation between both sides ($r = .79, p < 0.001$).

The association between the left and right sides was moderately strong, Cramer's $V = .79$.

Conclusion: The study shows when a person is in an asymmetrical stance, they can still exhibit symmetry across an axis.

74. Rehabilitation Specialty Knowledge and Skills: An Investigation of Perceived Similarities and Differences

Madison Cronin-Burroughs, Michia Jenkins, Allan Liggett

Faculty Advisor: Michael Hudson

We will conduct structured interviews with practicing rehabilitation specialists and directors of the Commission on Accreditation of Athletic Training Education (CAATE) accredited rehabilitation residency programs. We want to know the similarities and differences between the teaching and understanding of rehabilitation and those who specialize in rehabilitation. The structured interview questions will consist of rank order and closed-ended questions. We will interview eight individuals, which include four residency program directors and four experienced clinicians. After data is collected from the initial survey, the data will be compiled and analyzed with descriptive statistics and coding of the open-ended responses. We project that current practices do not align with what residency programs are teaching. This project aims to describe the consistencies and inconsistencies between what athletic training residency programs are teaching and what clinicians are practicing.

75. What are the Knowledge and Perceptions of Athletic Training Students and Early Professionals Regarding the Athletic Training Profession as a General Practice or Specialty Practice?

Parker Eley, Danielle De Felice, Daniel McGuire, Sergio Valdez, Eva Frank

Faculty Advisor: Michael Hudson

Athletic trainers' ability to differentiate the concepts of general, advanced, and specialized practice is unknown. Understanding these concepts is important to developing specialty practices in

athletic training. The purpose of this study was to examine the knowledge and perceptions of these concepts with athletic training students from accredited professional programs and newly credentialed athletic trainers. We used a nonequivalent groups and cross-sectional survey design to study the knowledge, perceptions, and confidence of subjects regarding the concepts of general, advanced, and specialized practice. We developed and validated a new survey with a Content Validity Index (CVI) score of 1.0. Participants were randomly selected through the National Athletic Trainers' Association Survey Service. We hypothesized that both populations will lack knowledge surrounding specialty practice, and more early professionals perceived athletic training as a general practice.

76. Preceptors' Perspectives on the Benefits of Immersive Clinical Education

Sydney Murray, Katelyn Schieffer, Charmi Shastri, Daishi Uekuri
Faculty Advisor: Allan Liggett

In 2020, the Commission on Accreditation of Athletic Training Education (CAATE) required programs to have a 4-week immersive clinical experience. Limited research has been completed on the benefits of immersive athletic training clinical education. The purpose of this study was to evaluate preceptor perspectives on the benefits of immersive clinical education. Participants included full-time certified athletic trainers in the collegiate setting who were members of the National Athletic Trainers' Association (NATA) and have previously been a preceptor for an immersive and integrated athletic training student. A Qualtrics survey was randomly sent to 1,000 collegiate athletic trainers. The survey collected demographic information and contact information if the participant volunteered for a Zoom interview. Data collection was in progress at the time of abstract submission. Data analysis will be performed upon saturation of data. Analysis will include member checks, peer reviews, and triangulation. Findings will be presented in a theme format.

STUDENT ORGANIZATION SPOTLIGHT

Unlock Your Potential With The Kinesiology Research and Career Club

Grace Landewee, Caleb Dodd, Blake Hamelink,
Olivia McIntyre, Keith McShan
Faculty Advisor: Keith McShan

The Kinesiology Research and Career (KRC) Club provides students enrolled in the Kinesiology department the opportunity to explore career and research related opportunities. The KRC club began in January 2023 and has 55 members. The club is composed of students from all levels of academic study (e.g., freshman, seniors) and all disciplines in the field of Kinesiology (e.g., exercise and movement science). The members are key as this club is student focused and student led. To attract members, the student led executive board brings industry professionals (e.g., Career Resources Specialist) to present career and research related workshops (e.g., “What Can I Do With This Major” workshop). For students seeking research experience, the club offers an annual trip to a research symposium, where they have opportunities to network and expand their knowledge about current and future research possibilities.

In conclusion, the KRC club offers a platform for students to engage in meaningful research and career experiences. Additionally, it provides an opportunity for students to gain insight into the field, expand their network, and make connections to further their future career prospects.