College of Allied Health Sciences

7th Annual Student Research Day

April 26, 2023

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Welcome to the 7th Annual College of Allied Health Sciences Research Day. We are excited to continue this tradition and recognize the outstanding research and scholarly work presented by our students! We have a wonderful program this year with students from nearly every degree program in the college and at all levels - undergraduate, professional graduate, and research doctorate, presenting. Our students and their faculty mentors have been incredibly productive this year addressing health-related issues to improve the function and quality of life and reduce disability across the lifespan. As you will see, the program is filled with collaborative research - students working together to address health-related issues and students collaborating with faculty in their programs and across other departments in the college and the university to answer clinical questions and improve the quality of healthcare. It is through these collaborations that we are able to transform our region by improving the health-related issues affecting the residents of eastern North Carolina and beyond. Please attend the oral presentations and visit the posters to learn more about the research and scholarly pursuits our students have completed over the past year.

Hope you enjoy the event!

All best,

Heather Harris Wright, PhD Ashley Burch, PhD., HSIM

Associate Dean for Research Chair, CAHS Research Committee

Welcome

# Summary of Events

# Wednesday, April 26, 2023

9:00-10:20 AM

*Opening remarks & Oral Presentations Session A*

10:30- 12:00 PM

*Poster Presentations Session A*

12:00- 12:30 PM

*Lunch Break*

12:30- 2:00 PM

*Poster Presentations Session B*

2:00- 3:15 PM

*Oral Presentations Session B*

3:15- 4:00 PM

*Keynote Speaker*

4:00- 4:15 PM

*Award Presentation & Closing Remarks*

Poster Presentation Session A

MC01. Driving and Community Mobility Bootcamp for Young Adults with Autism Spectrum Disorder: Participants’ Perception of Bootcamp as an Occupational Therapy Intervention ***Skylar Rogan****, Charli White, Anne Dickerson*

MC02. The Effect of Male vs Female Target Voices in Speech Recognition. ***Erin Kokinda****, Andrew Vermiglio, Virginia Driscoll, Caitlyn Paulson, Reyse Stirrett, Ava Conningham, Kathryn Fennie, Laura Hall, Abigail Ormond*

MC03. The Effect of Target Speaker Sex on Monosyllabic Word recognition in Quiet Ability. ***Caitlyn Paulson,*** *Andrew Vermiglio, Virginia Driscoll, Erin Kokinda, Drew Huffman, Gabby Musumeci, Et. al.*

MC04. Does Daily Use of Prolonged Speech Patterns Benefit People Who Stutter ***Nathalia Cannon****, Patrick Briley*

MC05. Activity Levels, Perceived Exertion, & Person Factors During Instrumental Activities of Daily Living in Community-Dwelling Older Adults***Madison Irvin,*** *Paige Lawrence, Kendyl Finley, Young Joo Kim*

MC06. Reliability of Hand-Held Dynamometry of Testing Shoulder Strength in Healthy Individuals ***Kirstan Beaver, Wiley Hoover,*** *Michael Garrison, Shellie Zsoldos*

MC07. Simulated Bone Growth: Implications for Physical Activity Related Bone Stress. ***Hannah McLendon****, John David Willson, Stacey Meardon*

MC08. The Validation of Virtual Reality Sensory Organization Test to Evaluate Postural Control. ***Keri Price****, Chia-Cheng Lin, Avery Vose, Rui Wu*

MC09. Walking in a high fall risk environment and its effects on metabolic energy expenditure ***Brian McGill****, Ryan D Wedge*

MC10. Segment Coordination During Perturbed Symmetric and Asymmetric Walking ***Ashley Arensdorf****, Ryan Wedge*

MC11. HIIT as a Preventative Measure for Normal Age-Related Cognitive Decline ***Justin Stephenson*** *Gabe Gonzales-Contreras, Ted* Graber

Oral Presentations Session A

RD01. Investigating Changes in Spatiotemporal Upper Extremity Characteristics after Short and Intensive Bimanual Training Sessions in Children with Unilateral Cerebral Palsy ***Shailesh S. Gardas****, John Willson Destiny Alling Erica Boswell Tom Jaskson Christine Lysaght Swati M. Surkar*

RD02. Behavioral and transcriptome profiling of heterozygous Rab10 knockout mice ***Wyatt Bunner,*** *Jie Wang, Sarah Cohen, Denys Bashtovyy, Tuan Tran, Ryohei Yasuda, Erzsebet Szatmari*

RD03. Speech Accommodation for Older Adults: A Scoping Review ***Rose Baker****, Catherine Nobles, Heidi Reis, Susan Bobb, Kathrin Rothermich*

RD04 Effect of Load carriage on Patellofemoral stress in females ***Ankur Padhye,*** *Stacey Meardon, Junfei Tong, Jaques Reifman, and John Willson*

MC01. Examining Visual Processing Speed Reaction Time as a Predictor for Driving Fitness ***Meagan Denny****, Alec DuCharme, Anne Dickerson*

MC02. Examining multi-tasking ability on an interactive driving simulator task to differentiate between fit and unfit drivers ***Alec DuCharme****, Anne Dickerson*

MC03 Effects of a Prolonged Run on Tibia Bone Stress in Females and Males ***Dylan Sampson****, Stacey Meardon, John Willson*

MC17*.* The Etiology and Prevalence of MSK Injuries in Volleyball Players and Evidence-Based Strategies for Prevention ***Briana Yanello****, Junae Staples, Michael Garrison*

UG07. Reduction of Screen Time Spent Using an Electronic Device ***Alyssa Jones****, Robert Campbell*

MC18. Effects of Training on Bimanual Skill Learning: a Comparative Study Between Typically Developing and Children with Unilateral Cerebral Palsy ***Anna Apperson****, Mary Scott Faircloth, Swati Surkar*

MC19. A Potential Role for Skeletal Muscle in Development of Metabolic Disease ***Lindsay Mitchell,*** *Fliip Jevtovic, Nicholas Broskey, Joseph Houmard, Donghai Zheng, Lynis Dohm, Terry Jones*

UG08. The Effect of Musical Experience on Speech Recognition in Noise Ability ***Melissa Rafaniello****, Andrew Vermiglio, Virginia Driscoll, Caitlyn Paulson, Erin Kokinda, et al.*

UG09. The Relationship Between Working Memory and Speech Perception in Noise Ability ***Emily Harrison****, Andrew Vermiglio, Virginia Driscoll, Caitlyn Paulson, Erin Kokinda, et al.*

MC20. Running Shoe Midsole Cushioning Influences Tibial Stress During Running Shoes ***Lauren Dicktel,*** *Stacey A Meardon, John D Willson*

UG10. The Effect of COVID-19 Infection on Behavioral Measures of Auditory Function ***Laney******Pope****, Andrew J. Vermiglio, Virginia Driscoll, Erin Kokinda, et al.*

UG11. Morphology of the Levator Veli Palatini Muscle: Volumetric Assessment ***McKenzie Perry****, Neda Tahmasebifard, Eshan Schleif, Jamie Perry*

RD01. Quantitative Changes in Velopharyngeal Anatomy Following Buccal Flaps for Velopharyngeal Insufficiency Management ***Taylor Snodgrass****, Thomas Sitzman, Jessica Williams, Jamie Perry, et al.*

MC21. Policy Change Reduces No-Show Visits in Pro-Bono PT Student Run Clinic ***Natalie Bryie****, Gabrielle Lane, Christine Lysaght*

MC22*.* Determining the Relationship Between Clinical Symptoms and Oculomotor Measures in People with Concussion ***Ashley King****, Shellie Zsoldos, Chia-Cheng*

Poster Presentations Session A

UG01. Feasibility of using accelerometer data to quantify performance and compare to capacity measured clinically in children with cerebral palsy. ***Grant Kirkman****, Shailesh Gardas, Casey Burroughs, Swati Surkar*

MC12. Age Related Changes in the Calcium Handling Properties of Skeletal Muscle in Mice ***Justin McCrary****, Ted Graber*

MC13. Retention of Bimanual Performance Following Hand-Arm Bimanual Intensive Therapy in Children with Unilateral Cerebral Palsy ***Casey Burroughs,*** *Paxton Dettor, Shailesh Gardas, Christine Lysaght, Swati Surkar*

MC14. Video fluoroscopic Detection Sensitivity of Swallowing Landmarks following Radiotherapy for Head and Neck Cancer ***Deirdre Larsen****, Caela Collichio, Melda Kunduk, Andrew McWhorter*

UG02. How Perspective Shapes Social Behaviors: A Study on Speech Accommodation ***Daisha Dowson****, Rose Baker, Jaeyoung Kum, Susan Bobb, Kathrin Rothermich*

UG03. Experiences from Analyzing Nasopharyngoscopy Data: Quality Improvement Suggestions ***Lydia LaFevers****, Taylor Snodgrass, Kathryn Fennie, Imani Gilbert, Thomas Sitzman Jamie Perry*

MC15. Remote ischemic conditioning effects on gait kinematics and muscle recruitment in children with cerebral palsy ***Emma Weis****, Shailesh Gardas, John Willson, Swati Surkar*

UG04. The Effect of Eye Closure on Speech Perception in Noise Ability ***Trenton Barnett****, Andrew Vermiglio, Virginia Driscoll, Caitlyn Paulson, Erin Kokinda, Drew Huffman, Gabriela Musumeci, Alyssa Alford, et al.*

UG05. Effect of Risk for Cochlear Synaptopathy and Musical Experience on Speech Recognition in Noise Ability ***Kaitlin Abrams****, Andrew Vermiglio Virginia Driscoll, Huffman Erin Kokinda, Gabriela Musumeci, Caitlyn Paulson, Alyssa Alford, et al.*

MC16. Driving and Community Mobility Bootcamp for Young Adults with Autism Spectrum Disorder: Perceptions of Law Enforcement ***Lindsay Diab*** *Madison Rogan*

UG06. Investigating the relationship between compensatory misarticulation errors and hypernasality severity ***Hannah Ragsdale****, Jessica Williams, Imani R. Gilbert, Jamie Perry*

Poster Presentations Session B

MC25. The Effects of Age on Endothelial Response to High Intensity Interval Training ***Gabriel Gonzalez-Contreras*** *Megan L. Pajski, Ted G. Graber*

UG12. A Mixed Methods Review of the Fresh Start Program. ***Grace Regan,*** *Lauren Sastre*

UG13. Standardizing Brake Force. ***Makenzie Steidl****, Anne Dickerson*

UG14. The Effect of Tinnitus on Speech Perception in Noise Ability. ***McKenzie Perry****, Andrew J. Vermiglio, Virginia Driscoll, Caitlyn Paulson, Erin Kokinda, Drew Huffman, Gabriela Musumeci, Kaitlin Abrams, Alyssa Alford, et al.*

UG 15. The Relationship Between Speech Recognition in Noise vs Dichotic Digits Performances. ***Katelyn Overcash****, Andrew J. Vermiglio, Virginia Driscoll, Erin Kokinda, Drew Huffman, Gabriela Musumeci, Kaitlin Abrams, Alyssa Alford, et al.*

UG16. Chronic Disease Prevalence, Morbidity rates, and Management Strategies in rural United States: A Comparative Literature Review ***Ava Asbell,*** *Ashley Burch, Linda Bolin*

UG17. HIIT Training and Preservation on Muscle and Mitochondrial Function in Mice. ***Hayden Carter,*** *Justin Stephenson, Ted Garber*

UG18. Exploring the Relationship Between Stuttering and Issues Related to Hearing ***Anna Scott Ivey****, Patrick Briley, Molly Jacobs*

UG19. The Relationship between the Ratings of ADHD Symptoms vs. Speech Recognition in Noise Ability ***Kelly Dorman****, Andrew Vermiglio, Virginia Driscoll, Caitlyn Paulson, Erin Kokinda, Drew Huffman, Gabby Musumeci, Kaitlin Abrams, Alyssa Alford, et el.*

RD03. Quantitative Changes in Velopharyngeal Anatomy Following the Furlow Double-Opposing Z-Plasty for Velopharyngeal Insufficiency Management ***Taylor Snodgrass****, Thomas J. Sitzman, Jessica L. Williams, Davinder J. Singh, Jeffrey Miller, Patricia Cornejo, Michael Kuwabara, Jamie L. Perry*

RD04. Neuro-immune interactions in heterozygous Rab10 knockout mice ***Wyatt Bunner****, Lauren Grodi, Jonathan Jacob Carver, Debajit Bhowmick, Alessandro Didonna, Erzsebet M. Szatmari*

Oral Presentations Session B

Mc04. The Social and Emotional Influence of Group Engagement in Occupations Among Cancer Survivors ***Heidi Kreis****, Lynne Murphy*

MC05. Adding Somatosensation Thresholds to Improve the Steadi Fall Risk Screening Algorithm ***Alyssa Adamkowski,*** *Chia-Cheng Lin, Taylor Luibrand, Natalie McBryde, Abby Volz, et al.*

MC06. Medical Students' Perceptions of Physical Therapy: An Opportunity for Interprofessional Collaboration ***Heather Hubeli****, Christine Lysaght, Natalie Bryie, Gabrielle Lane*

MC07. Velopharyngeal MRI Predictors of Success and Quality Assessment in Multi-Site Observational Study ***Kathryn Fennie,*** *Taylor Snodgrass, Thomas Sitzman, Jamie Perry*

MC08. Clinical predictors of tibiofemoral joint contact force asymmetry during running following anterior cruciate ligament reconstruction ***Rachel Donaldson****, John Willson, Ankur Padhye, Stacey Meardon*

UG01. Change Management: Losing Weight by Using Isagenix Meal Replacement Shakes, Isagenix Dietary Supplements, and Intermittent Fasting ***Robyn Hamilton,*** *Robert Campbell*

*UG02.* Multi-omics analysis of nutrient metabolism reveals novel role for B12 neuro-inflammatory regulation ***Abigail Dickerson****, Michael Wheeler*

Poster Presentations Session B

MC23. Factors Influencing Gross Motor Development During the First Year of Life in Typically Developing Infants: A Rapid Review. ***Sarah Coward****, Christina Larkins-Roach, Kara Kern, Jamie E. Bloss, Linda E. May, Amy Gross McMillan*

MC24. The Relationship between Monosyllabic Word Recognition in Quiet VS. Speech Recognition in Noise Test Results. ***Drew Huffman,*** *Andrew J. Vermiglio, Virginia Driscoll, Caitlyn Paulson, Erin Kokinda, Gabriela Musumeci, Kaitlin Abrams, et al.*

RD02. MRI Study of the Velopharyngeal Closure Location in Relation to the Palatal Plane ***Neda Tahmasebifard,*** *Taylor Snodgrass, Kevin O'Brien, Jamie Perry*

MC34. The Impact of Blood Flow Restrictions on strength and Coordination of a Young Adult with Quadriplegic Cerebral Palsy ***Taylor Lucas****, Sarah Johnson, Swati Surkar, Shailesh Gardas*

MC35. A Convergent Validity Study: Listening in Spatialized Noise-Sentences (LiSN-S) Test and the BKB-SIN Test. ***Gabriela Musumeci****, Andrew J. Vermiglio Virginia D. Driscoll, et al.*

UG23. The Relationship Between Self-Reported Symptoms of Attention Deficit Hyperactivity Disorder (ADHD) vs Speech Recognition in Noise Ability. ***Alyssa Alford*** *Andrew Vermiglio Virginia Driscoll Kaitlin Abrams Julia Bak Trenton Barnett, et al.*

UG24 Associations Between Social Determinants of Health and Diabetes Self-Care Behaviors Among Insured Patients ***Sarah Elliott****, Ashley Burch, Linda Bolin*

UG25. The Relationship between Stigma and Mood Outcomes for College Students with Disabilities ***Caroline Knox,*** *Christy Walcott*

MC36. Exploring the Relationship Between Praxis & Handwriting Legibility in Elementary Students *Denise Donica,* ***Larymi Beck****, Kathryn Hill*

MC37. Characterizing Nationally Available Gelatin-Based Products using IDDSI Testing Methods ***Meghan Eisenhardt****, Abigail Perrini, Mathew Vansant, Deirdre Larsen*

Poster Presentations Session B

MC26. Surviving to Thriving: Qualitative Perspectives on an Occupation-based Cancer Survivorship Group ***Ayoola Ajani****, Logan Leggett, Lynne Murphy*

MC27*.* Aphasia Subsequent to Stroke in Adults with Williams Syndrome and Autism: Where are the cases? ***Sierra Silva****, Rhiannon Phillips, Jamie E. Bloss, and Matthew Walenski*

UG20. Centaurinα1-Bid Signaling in Alzheimer’s Disease Progression ***Mary Phipps,*** *Wyatt Bunner, Denys Bashtovyy, Ryohei Yasuda, Erzsebet M. Szatmari*

UG21. An Investigation of Gravity’s Impact on the Velopharyngeal Mechanism ***Haley M. Masterjohn****, Imani R. Gilbert, Eshan Schleif, Jamie L. Perry*

MC28. Exploring Readiness for Mobility Transitions Among Older Adults Being Evaluated for Fitness to Drive ***Claire Gardiner****, Phoebe LaCroix, Lynne Murphy*

MC29. Effects of Remote Limb Ischemic Conditioning on Peripheral Sensations and Hand Grip in Children with Unilateral Cerebral Palsy ***David Turnure****, Michaela Larrison, Chia-Cheng Lin, Swati M. Surkar*

MC30. The Effect of Hamstring Length on Ground Reaction Force in Pitchers ***Tommy Houmard****, Lydia Tart, Joey Casadonte, MS Alex Durland, Brandon Young*

RD05. Potential Clinical Applications of a Velopharyngeal Atlas Tool ***Imani R. Gilbert****, Jamie L. Perry, Fangxu Xing Riwei Jin David P. Kuehn, Ryan K. Shosted, Jonghye Woo, Zhi-Pei Liang, Bradley P. Sutton*

MC31. Tibiofemoral Joint Contact Forces with Slip Perturbations During Symmetric and Asymmetric Walking ***Alexander S. Clark****, Madison Deanes, John D. Willson, Ryan D. Wedge*

MC32. Parent Perceptions of Effects of a Driving and Community Mobility Bootcamp in their Children with Autism Spectrum Disorder ***Emily Kron****, Kelly Oglesby, Anne Dickerson*

UG22. Handwriting Abilities of Low-SES Elementary Students Compared to Grade-Level Expectations ***Ashley Jones****, Denise Donica*

MC33. Effects of an Occupational Therapy Ground-Based Horsemanship Program on Executive Function and Social Participation in Children and Youth with Disabilities: A Pilot Study ***Dani Campbell****, Jill Donaldson, Ella Duffy, Lydia Mead, Ashley Wilhite, Heather Panczykowski*

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**Keynote Speaker**

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**Fostering Diverse Teams in Research and Clinical Practice**

“*The focus of East Carolina University’s Office for Equity and Diversity is to ‘build an inclusive ECU.’ As a nurse of Indian heritage, this statement of diversity and inclusion resonates with me and strengthens my commitment as a Pirate nurse. During my 5+ years at ECU, I have developed valuable DEI skills that serve the tripartite mission of research, teaching, and service.”*

**THANK YOU!!**

**2022-2023 CAHS Research Committee**

**Heather Harris Wright** CSDI Professor; Associate Dean of Research

**Ashley Burch** *HSIM Assistant Professor; Committee Chair*

**Chia-Cheng Lin** *PTHE Associate Professor*

**Myshalae Jamerson Euring** *DARS Assistant Professor*

**Denise Donica** *OCCT Professor*

**Matthew Walenski** *CSDI Associate Professor*

**Special Thanks to all CAHS Faculty Mentors!**

Kathrin Rothermich

Lauren Sastre

Lynne Murphy

Matthew Walenski

Michael Garrison

Michael Wheeler

Patrick Briley

Rhiannon Phillips

Ryan Wedge

Sarah Johnson

Shellie Zsoldos

Stacey Meardon

Swati Surkar

Ted Graber

Terry Jones

Alex Durland

Amy Gross McMillan

Andrew Vermiglio

Anne Dickerson

Ashley Burch

Chia-Cheng Lin

Christine Lysaght

Deirdre Larson

Denise Donica

Elizabeth Locklear

Erzsebet Szatmari

Heather Panczykowski

Jamie Perry

John Willson

Young Joo Kim

**Special Thanks to all CAHS Research Day Judges!**

**PhD Student Judges**

Ankur Padhye

Imani Gilbert

Neda Tahmasebifard

Rose Baker

Shailesh Gardas

Taylor Snodgrass

Wyatt Bunner

**Faculty Judges**

Ashley Burch

Denise Donica

Diedre Larsen

Elijah Asagbra

Erzsebet Szatmari

Heather Harris Wright

James Lin

Kathrin Rothermich

Lauren Turbeville

Matthew Walenski

Michael Wheeler

Myshalae Jamerson-Euring

Richard Baybutt

Robert Campbell

Ryan Wedge

Stacey Meardon

Young Kim

**Research conducted in the College of Allied Health Science focuses on health-related issues affecting eastern North Carolina and beyond. Research within our college is multidisciplinary, innovative, engages community partners, and seeks to improve function and quality of life and reduce disability across the lifespan. Our research is broken down into four main categories.**

* **Prevention & Intervention** Creating and implementing new strategies for preventative health care throughout the lifespan, targeting critical issues including nutrition, physical activity, communication, hearing, and behavioral health.
* **Community Engagement & Education** Developing effective community partnerships to serve the health care needs of eastern North Carolina and beyond.
* **Population Health** Maintaining and improving public health, reducing health disparities, and promoting healthy aging through multidisciplinary approaches.
* **Health Services & Delivery** Applying evidence to improve health care through improved access across populations, reduced costs, and novel, alternative delivery methods such as telehealth or specialty practices.

Thank You for Joining us for Our 7th Annual Student Research Day!