Exponent®
Engineering & Scientific Consulting

Emily Frith, Ph.D., CHES, CWWS

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Professional Profile

Dr. Frith possesses wide-ranging expertise spanning the fields of kinesiology, exercise science, health behavior and promotion, and cognitive psychology. She has published 80 peer-reviewed manuscripts across these domains.

Dr. Frith applies her education, training, and experience to human factors analyses in both litigation support and proactive technical consulting roles. Her research examines how behavior and cognition interact to influence human performance, particularly under the lens of overcoming habitual thoughts and behaviors to solve problems. Dr. Frith evaluates these and other facets of human performance by conducting human health and safety research, examining safety hazards and risks associated with various products and equipment, and identifying potential human performance gaps and errors. Her expertise has been applied to processes such as creative thinking, executive function, memory, decision-making, mind-movement connections during problem-solving, habitual sedentary behavior, and impacts of exercise on affect and mood, all of which can impact human-product interactions in consumer, occupational, and other contexts.

Dr. Frith earned PhDs in Kinesiology and in Experimental Psychology from the University of Mississippi. Her doctoral research focused on elucidating the role of physical activity in memory, executive function, and creative problem-solving abilities. Her postdoctoral work at Pennsylvania State University included collaborating on, and managing, research projects that evaluated cognitive neuroscience phenomena of creative problem-solving and the use of multiple mobile health technologies to track and encourage healthy behavior change, such as increasing hydration and physical activity. Dr. Frith has also taught several courses in health promotion, general psychology, and exercise psychology.

Dr. Frith holds a Certified Worksite Wellness Specialist (CWWS) designation from the National Wellness Institute (NWI). This credential recognizes Dr. Frith’s ability to apply research and best industry practices to drive sustainable improvements in the health and wellness of employees and organizations. As a CWWS, Dr. Frith is also qualified to deliver comprehensive, evidence-based worksite wellness programming at all stages of design, development, implementation, and evaluation. Dr. Frith also holds a Certified Health Education Specialist (CHES) designation from the National Commission for Health Education Credentialing (NCHEC). It is the most widely recognized credential in the health education profession, and recognizes Dr. Frith's ability to apply expertise across several core areas, such as health access, equity, literacy, and communication within diverse communities, needs and capacity assessment, advocacy for policy/systems-level change, compliance with ethical best-practices in the industry, research theory, design, analysis, and evaluation, and effective delivery of evidence-based program planning, implementation and evaluation.

Dr. Frith extends her passion for health and wellness to running, regularly competing in road and trail races ranging from 5 to 50 kilometers. During her time as a college athlete, she was a two-time Great

Lakes Valley Conference Scholar Athlete of the Year and was named Bellarmine University's Runner of the Decade for women's cross country.

Academic Credentials & Professional Honors

Ph.D., Psychology, The University of Mississippi, 2020

Ph.D., Health & Kinesiology, The University of Mississippi, 2019

M.S., Exercise and Wellness Promotion, Eastern Kentucky University, 2016

B.A., Exercise Science, Bellarmine University, 2015

Graduate Student Research Award Winner, Data Blitz Competition, SEPA Annual Meeting (2020)

Graduate Research Achievement Award, Experimental Psychology, Department of Psychology, The University of Mississippi (2020)

Dissertation Fellowship Award, The University of Mississippi (2019)

Graduate Student Council Research Grant, The University of Mississippi (2019)

Outstanding Research Presentation Award for the 6th Annual Conference on Psychological Science, The University of Mississippi (2019)

American Kinesiology Association (AKA) Graduate Student Writing Award, The University of Mississippi (2019)

Graduate Achievement Award in Health and Kinesiology, School of Applied Sciences, The University of Mississippi (2019)

H. Leon Garrett Health Promotion Award, The University of Mississippi (2018)

Licenses and Certifications

Certified Health Education Specialist

Worksite Wellness Specialist

Academic Appointments

Teaching Assistant, Department of Psychology, The University of Mississippi, 2019-2020

Teaching Assistant, Department of Health, Exercise Science and Recreation Management, The University of Mississippi, 2016-2019

Prior Experience

Pathways T32 Postdoctoral Fellow, Motivation Lab, Center for Healthy Aging, Pennsylvania State University, 7/2021-10/2021

Postdoctoral Scholar, Cognitive Neuroscience of Creativity Laboratory, Pennsylvania State University, 8/2020-6/2021

Graduate Research/Teaching Assistant, The University of Mississippi, 2016-2020

Professional Affiliations

American College of Sports Medicine (ACSM) Member 2015-present

American Psychological Association (APA) Member 2020-present

Society of Behavioral Medicine (SBM) Member 2021-present

Publications

Book Chapters

Frith, E., & Loprinzi, P. D. (2020). Exercise, cognitive creativity, and dementia. In Diagnosis and Management in Dementia (pp. 827-842). Academic Press.

Published Peer-Reviewed Journal Articles:

Full details for the below publications can be found on Dr. Frith's Google Scholar citations page at https://scholar.google.com/citations?hl=en&user=Ap9vsWAAAAAJ

Frith, E. (2022). Long Live Creativity: Exploring the Exercise-Creative Cognition Link in Later Life. Translational Issues in Psychological Science, 8(1), 47.

Frith, E., Gerver, C. R., Benedek, M., Christensen, A. P., & Beaty, R. E. (2022). Neural Representations of Conceptual Fixation during Creative Imagination. Creativity Research Journal, 34(1), 106-122.

Jung, M., Frith, E., Kang, M., & Loprinzi, P. D. (2022). Effects of Acute Exercise on Verbal, Mathematical, and Spatial Insight Creativity. Journal of Science in Sport and Exercise, 1-10.

Frith, E., Miller, S. E., & Loprinzi, P. D. (2022). Effects of verbal priming with acute exercise on convergent creativity. Psychological Reports, 125(1), 375-397.

Loprinzi, P., Olafson, D., Scavuzzo, C., Lovorn, A., Mather, M., Frith, E., & Fujiwara, E. (2022). Effects of acute exercise on emotional memory. Cognition and Emotion, 1-30.

Silvia, P. J., Rodriguez, R. M., Beaty, R. E., Frith, E., Kaufman, J. C., Loprinzi, P. D., & Reiter-Palmon, R. (2021). Measuring everyday creativity: A Rasch model analysis of the Biographical Inventory of Creative Behaviors (BICB) scale. Thinking Skills and Creativity, 39, 100797.

Yamada, Y., Frith, E., Wong, V., Spitz, R. W., Bell, Z. W., Chatakondi, R. N., ... & Loenneke, J. P. (2021). Acute Exercise and Cognition: A Review with Testable Questions for Future Research into Cognitive Enhancement with Blood Flow Restriction. Medical Hypotheses, 110586.

Frith, E., Kane, M.J., Welhaf, M.S., Silvia, P.J., Beaty, R.E. (2021). Keeping Creativity Under Control: Contributions of Attention Control and Fluid Intelligence to Divergent Thinking. Creativity Research Journal, 1-20.

Oppici, L., Frith, E., & Rudd, J. (2020). A perspective on implementing movement sonification to influence movement (and eventually cognitive) creativity. Frontiers in Psychology, 11.

Frith, E. & Loprinzi, P.D. (2020). Is engagement in physical activity and creative activity mutually exclusive? An evaluation of general and domain-specific relationships. American Journal of Health Studies, 35(1).

Frith, E., Elbich, D., Christensen, A.P., Rosenberg, M.D., Chen, Q., Silvia, P.J., Seli, P., Kane, M. J., & Beaty, R. E. (2020). Intelligence and Creativity Share a Common Cognitive and Neural Basis. Journal of

Experimental Psychology - General.

Frith, E., Ryu, S., Kang, M., & Loprinzi, P.D. (2019). Systematic Review of the Proposed Associations between physical exercise and creative thinking. Europe's Journal of Psychology, 15(4), 858-877.

Loprinzi, P.D., Koehler, L., Frith, E., Ponce, P., Delancey, D., Joyner, C., Ashpole, N., Zou, L. & Li, H. (2019). Acute exercise, psychological stress induction, and episodic memory. American Journal of Health Behavior, 43(6), 1016-1029.

Frith, E. Miller, S.E. & Loprinzi, P.D (2019). The role of embodied movement in assessing creative behavior in early childhood: A Focused Review. Perceptual and Motor Skills.

Loprinzi, P.D., Frith, E., & Crawford, L. (2020). The effects of acute exercise on retroactive memory interference. American Journal of Health Promotion, 34(1), 25-31.

Frith, E. & Loprinzi, P.D. (2019). Association of physical activity on memory and executive function: Population-based national sample of older adults. Journal of Cognitive Enhancement, 3(4), 425-435.

Frith, E., Miller, S., & Loprinzi, P.D. (2019). A review of experimental research on embodied creativity: Revisiting the mind-body connection. Journal of Creative Behavior.

Ryu, S., Frith, E., Pedisic, Z., Kang, M., & Loprinzi, P.D. (2019). Secular trends in the association between obesity and hypertension among adults in the United States, 1999-2014. European Journal of Internal Medicine, 62, 37-42.

Yanes, D., Frith, E., & Loprinzi, P.D. (2019). Memory-related encoding-specificity paradigm: experimental application to the exercise domain. Europe's Journal of Psychology, 15(3), 447-458.

Wingate, S., Crawford, L., Frith, E. & Loprinzi, P.D. (2018). Experimental investigation of the effects of acute exercise on memory interference. Health Promotion Perspectives, 8, 208-214.

Ikuta, T., Frith, E., Ponce, P. & Loprinzi, P.D. (2019). Association of physical activity on the functional connectivity of the hippocampal-orbitofrontal pathway. Physician and Sportsmedicine, 47(3), 290-294.

Edwards, M.K., Wade, B., Frith, E., & Loprinzi, P.D. (2018). Mindfulness-based walking vs. seated meditation on anxiety, affect, fatigue and cognition. Journal of Behavioral Health, 7(4), 185-192.

Loprinzi, P.D., Ponce, P. & Frith, E. (2018). Hypothesized mechanisms through which acute exercise influences episodic memory. Physiology International, 105(4), 285-297

Frith, E. & Loprinzi, P.D. (2018). Physical activity, muscle strengthening activities and systemic inflammation among retinopathy patients. Diabetes Spectrum. https://doi.org/10.2337/ds18-0002

Frith, E. & Loprinzi, P.D. (2018). Physical activity and individual cognitive function parameters: Unique exercise-induced mechanisms. Journal of Cognitive-Behavioral Psychotherapy and Research, 7, 92-106.

Frith, E., Sng, E., & Loprinzi, P.D. (2018). Randomized controlled trial considering varied exercises for reducing proactive memory interference. Journal of Clinical Medicine. 7(6), 147.

Haynes IV, J.T., Frith, E., Sng, E. & Loprinzi, P.D. (2018). The experimental effects of acute exercise on episodic memory function: Considerations for the timing of exercise. Psychological Reports. doi: 10.1177/0033294118786688

Patterson, R., Frith, E. & Loprinzi, P.D. (2018). The experimental effects of acute walking on cognitive creativity performance. Journal of Behavioral Health, 7, 113-119.

Loprinzi, P.D. & Frith, E. (2018). The role of sex in memory function: Considerations and recommendations in the context of exercise. Journal of Clinical Medicine, 7(6). 132. doi: 10.3390/jcm7060132

Frith, E., Ramulu, P.Y., Ashar, B., & Loprinzi, P.D. (2019). Association of single and multiple medical conditions with work status among adults in the United States. Journal of Lifestyle Medicine, 9(1), 15.

Loprinzi, P.D., Edwards, M.K., & Frith, E. (2018). Exercise and prospective memory. Journal of Lifestyle Medicine, 8(2), 51.

Frith, E. & Loprinzi, P.D. (2018). The association between lower extremity muscular strength and cognitive function in a national sample of older adults. Journal of Lifestyle Medicine, 8(2), 99.

Loprinzi, P.D., Frith, E., & Edwards, M.K. (2018). Exercise and emotional memory: A systematic review. Journal of Cognitive Enhancement, 3, 94-103.

Loprinzi, P.D. & Frith, E. (2019). Interhemispheric activation and memory function: Considerations and recommendations in the context of cardiovascular exercise research. Psychological Reports, 122(6), 2396-2405.

Frith, E., Shivappa, N., Mann, J.R., Hebert, J., Wirth, M. & Loprinzi, P.D. (2018). Letter to Editor in response to: Potential confounding in a study of dietary inflammatory index and cognitive function. British Journal of Nutrition, 120(9), 1078-1079.

Loprinzi, P.D. & Frith, E. (2019). Protective and therapeutic effects of exercise on stress-induced memory impairment. Journal of Physiological Sciences, 69(1), 1-12

Frith, E. & Loprinzi, P.D. (2018). Physical activity and cognitive function among older adults with an elevated gamma gap. Medical Principles and Practice, 27(6), 531-536.

Delancey, D., Frith, E., Sng, E. & Loprinzi, P.D. (2019). Randomized controlled trial examining the long-term memory effects of acute exercise during the memory consolidation stage of memory formation. Journal of Cognitive Enhancement, 3(3), 245-250.

Loprinzi, P.D. & Frith, E. (2018). A brief primer on the mediational role of BDNF in the exercise-memory link. Clinical Physiology & Functional Imaging, doi:10.1111/cpf.12522

Loprinzi, P.D. & Frith, E. (2018). Memorcise in the context of Parkinson's disease. Journal of Cognitive Enhancement, 2(2), 208-216.

Frith, E. & Loprinzi, P. D. (2018). Experimental effects of acute exercise and music listening on cognitive creativity. Physiology & Behavior, 191, 21-28

Loprinzi, P.D. & Frith, E. (2018). Obesity and episodic memory function. Journal of Physiological Sciences, 64(4), 321-331.

Sng, E., Frith, E., & Loprinzi, P.D. (2018). Experimental effects of acute exercise on episodic memory acquisition: Decomposition of multi-trial gains and losses. Physiology & Behavior, 186, 82-84.

Loprinzi, P.D. & Frith, E. (2018). Effects of sedentary behavior, physical activity, frequency of protein consumption, lower extremity strength and lean mass on all-cause mortality. Journal of Lifestyle Medicine, 8, 8-15.

Loprinzi, P.D., Frith, E., & Edwards, M.K. (2018). Resistance exercise and episodic memory function: A systematic review. Clinical Physiology and Functional Imaging, 38, 923-929. doi: 10.1111/cpf.12507

Crush, E., Frith, E., & Loprinzi, P.D. (2018). Experimental effects of acute exercise duration and exercise recovery on mood state. Journal of Affective Disorders, 229, 282-287.

Frith, E. & Loprinzi, P.D. (2018). Experimental evaluation of exercise-related hedonic responses to preferred versus imposed media content. Health Promotion Perspectives, 8, 109-119.

Frith, E. & Loprinzi, P.D. (2018). Fitness fatness index and residual-specific mortality. Cardiopulmonary Physical Therapy Journal, 29, 106-109. doi:10.1097/CPT.0000000000000079

Frith, E., Shivappa, N., Mann, J.R., Hebert, J.R., Wirth, M., & Loprinzi, P.D. (2018). Dietary inflammatory index and memory function: Population-based national sample of elderly Americans. British Journal of Nutrition, 119, 552-558.

Loprinzi, P.D. & Frith, E. (2018). The association between perceived physical activity and cognitive function in older adults. Psychological Reports. doi: 10.1177/0033294117750632

Frith, E. & Loprinzi, P.D. (2018). Leukocyte telomere length and cognitive function in older adults. Journal of Cognitive-Behavioral Psychotherapy and Research, 7(1), 14-18.

Frith, E. & Loprinzi, P.D. (2018). Physical activity is associated with higher cognitive function among adults at risk for Alzheimer's disease. Complementary Therapies in Medicine, 36, 46-49.

Loprinzi, P.D., Edwards, M.K. & Frith, E. (2018). Review of the literature examining the association between physical activity and retinopathy. The Physician and Sportsmedicine, 46, 123-128.

Loprinzi, P.D., Sng, E., & Frith, E. (2018). "Memorcise": Implications for patient compliance and medication adherence. The Physician and Sportsmedicine, 46, 21-23.

Frith, E. & Loprinzi, P.D. (2018). Accelerometer-assessed light-intensity physical activity and mortality among those with mobility limitations. Disability and Health Journal. 11, 298-300.

Frith, E. & Loprinzi, P.D. (2018). The association between bouted and non-bouted physical activity on retinopathy prevalence. European Journal of Internal Medicine, 47, 32-35.

Sng, E., Frith, E., & Loprinzi, P.D. (2017). Temporal effects of acute walking exercise on learning and memory function. American Journal of Health Promotion, 32, 1518-1525. doi: 10.1177/0890117117749476

Frith, E., Sng, E., & Loprinzi, P.D. (2017). Randomized controlled trial evaluating the temporal effects of high-intensity exercise on learning, short-term and long-term memory, and prospective memory. European Journal of Neuroscience, 46, 2557-2564.

Loprinzi, P.D., Frith, E., Edwards, M.K., Sng, E., & Ashpole, N. (2017). The effects of exercise on memory function among young- to middle-age adults: Systematic review and recommendations for future research. American Journal of Health Promotion. doi: 10.1177/0890117117737409

Frith, E. & Loprinzi, P.D. (2017). Can Facebook reduce perceived anxiety among college students? A randomized controlled pilot exercise trial using the Transtheoretical Model of behavior change. JMIR Mental Health, 4(4): e50.

Frith, E. & Loprinzi, P.D. (2017). The association between physical activity and cognitive function with considerations by social risk status. Europe's Journal of Psychology, 13, 767-775.

Loprinzi, P.D. & Frith, E. (2018). Accelerometer-assessed physical activity and school absenteeism due to illness or injury among children and adolescents: NHANES 2003-2006. American Journal of Health Promotion. 32(3):571-577

Frith, E. & Loprinzi, P.D. (2018). Retinopathy and mortality. Diabetes Spectrum, 31, 184-188.

Loprinzi, P.D., Edwards, M.K., & Frith, E. (2017). Potential avenues for exercise to activate episodic memory-related pathways: A narrative review. European Journal of Neuroscience, 46, 2067-2077.

Frith, E. & Loprinzi, P.D. (2017). Food insecurity and cognitive function in older adults: Brief report. Clinical Nutrition, 46, 2067-2077.

Frith, E. & Loprinzi, P.D. (2017). The association between physical activity and cognitive function among a national sample of adults with diabetes. Cardiopulmonary Physical Therapy Journal.

Frith, E. & Loprinzi, P.D. (2017). Muscle strengthening activities and retinopathy. Journal of Molecular Pathophysiology, 6, 38-41.

Frith, E. & Loprinzi, P.D. (2017). Exercise facilitates smoking cessation indirectly via intention to quit smoking: Prospective cohort study among a national sample of young smokers. American Journal of Health Promotion. doi: 10.1177/0890117117717372

Frith, E. & Loprinzi, P.D. (2017). Free-living physical activity, executive function and chronic kidney disease. Journal of Molecular Pathophysiology, 6, 42-45.

Loprinzi, P.D. & Frith, E. (2017). Cardiometabolic healthy obesity paradigm and all-cause mortality risk. European Journal of Internal Medicine, 43, 42-45.

Frith, E. & Loprinzi, P.D. (2017). Fitness fatness index and Alzheimer-specific mortality. European Journal of Internal Medicine, 42, 51-53.

Frith, E. & Loprinzi, P.D. (2017). Predictive validity of a fitness fatness index in predicting cancer-specific mortality. Journal of Behavioral Health, 6, 189-191.

Frith, E. & Loprinzi, P.D. (2017). Social support and cognitive function in older adults. Best Practices in Mental Health, 13(2), 41-49.

Frith, E. & Loprinzi, P.D. (2017). Physical activity and cognitive function among older adults with hypertension. Journal of Hypertension, 35, 1271-1275.

Frith, E. & Loprinzi, P.D. (2017). The protective effects of a novel fitness-fatness index on all-cause mortality among adults with cardiovascular disease. Clinical Cardiology, 40, 469-473.

Frith, E., Addoh, O., Mann, J.R., Windham, B. Gwen, & Loprinzi, P.D. (2017). Individual and combined associations of cognitive and mobility limitations on mortality risk among older adults. Mayo Clinic Proceedings, 92, 1494-1501.

Loprinzi, P.D. & Frith, E. (2017). Motor skills and free-living physical activity showed no association among preschoolers in 2012 U.S. National Youth Fitness Survey. Perceptual and Motor Skills, 124, 321-328.

Mahoney, S.E., Carnes, A.D., Wójcicki, T.R., Frith, E., & Ferry, K. (2016). Habitual Dietary Intake among Recreational Ultra-Marathon Runners: Role of Macronutrients on Performance. Journal of Food and Nutrition Research, 4(4), 205-209.

Loprinzi, P.D. & Frith, E. (2016). Physical activity, mortality and prostate disease. Journal of Molecular Pathophysiology, 5, 81-84.

Presentations

Frith, E., Kane, M. J., Welhaf, M.S., Christensen, A. P., Silvia, P. J., & Beaty, R.E. (August, 2021). Controlled Creativity: Contributions of Attention and Fluid Intelligence to Divergent Thinking. Data Blitz presented at the APA Annual Conference – Division 10: Society for the Psychology of Aesthetics, Creativity and the Arts. (Session Chair).

Frith, E., Avila, B. N., & Miller, S. E. (June, 2020). The Role of Effort and Estimation in Divergent Thinking. Data Blitz presented at the SEPA Annual Conference (Winner).

Frith, E., Avila, B. N., & Miller, S. E. (April, 2019). An Evaluation of Age-Associated Trends in Divergent Thinking. Data Blitz presented at the Sixth Annual UM Conference on Psychological Science (Winner).

Frith, E., Miller, S.E., & Loprinzi, P.D. (March, 2019). Primes for the Mind: Additive Effects of Verbal Priming and Acute Exercise on Convergent Creativity. Research presented at the GSC Research Symposium (Winner).

Frith, E. & Loprinzi, P.D. (March, 2018). Experimental Investigation of Exercise-Related, Perceived Hedonic Responses to Preferred versus Imposed Media Content. Poster presented at Southeast ACSM.

Ponce, P., Frith, E., & Loprinzi, P. D. (March, 2018). Effects of Acute Exercise on Stress-Induced Memory Function. Poster presented at Southeast ACSM.

Frith, E. TEDx University of Mississippi Speaking Presentation. (February, 2018). Exercise for Creativity.

Frith, E. & Loprinzi, P. D. (May, 2018) Experimental Investigation of Exercise-Related, Perceived Hedonic Responses to Preferred versus Imposed Media Content. Poster presented at ACSM National Conference.

Project Experience

Served as a user experience (UX) researcher in (1) a laboratory-based study that measured heart rate during physical exercise using a novel fitness wearable device, and compared device measurements at various exercise intensities with a validated alternative method; and (2) a field research study that quantitatively and qualitatively evaluated user experiences with an augmented reality (AR) device developed to improve job performance in retail environments.

Applied scientific literature and human factors principles to improve surveys evaluating knowledge, attitudes, and behaviors (KAB) of patients, caregivers, prescribers, and pharmacists of a drug subject to FDA Risk Evaluation and Mitigation Strategy (REMS) assessment.

Reviewed and synthesized scientific literature regarding product safety, human behavior, and characteristics that may elevate risk of injury, illness, and disorder with the use of consumer products. Summarized findings to identify evidence-based opportunities for improvement.

Assisted with the development of use cases for credible human-product interaction scenarios that could result in adverse user safety consequences. Estimated injury occurrence probability and severity of injury to assess expected overall levels of risk for each potential injury scenario.

Analyzed user installation procedures and materials to identify potential errors during human-product interactions and highlight opportunities for improvement consistent with scientific literature and industry consensus standards.

Peer Reviews

Acta Psychologica

Chronic Illness

Creativity Research Journal

Perceptual and Motor Skills

PLOS One

Research Quarterly for Exercise and Sport

Translational Issues in Psychological Science