LAUREN NICOLE MIUTZ

PERSONAL PROFILE

Currently an Assistant Professor within the Department of Health & Sport Science at the University of Dayton. Teaching courses focused on exercise physiology and human physiology. Facilitating research within the domain of exercise physiology and sport-related concussion. Advising undergraduate students within the department with a concentration in exercise science & movement and integrative physiology.

EDUCATION

09/2019 – 07/2022 *University of Calgary*
Calgary, AB
PhD – Kinesiology
Thesis: Informing a physiologically based exercise strategy to improve recovery following concussion in high school contact sport athletes

09/2017 – 06/2019 *University of Calgary*
Calgary, AB
MSc. – Kinesiology
Thesis: Feasibility, reliability, and concurrent validation of a field test of exertion in high school students

08/2012 – 05/2014 *University of Kentucky*
Lexington, KY
M.S. – Exercise Physiology

08/2007 – 12/2011 *James Madison University*
Harrisonburg, VA
B.S. – Exercise Science

CERTIFICATIONS

08/2018 – Present American College of Sport Medicine (ACSM) Certified Exercise Physiologist

PROFESSIONAL APPOINTMENTS

08/2024 – *Present* Assistant Professor
University of Dayton, Department of Health & Sport Science, Dayton, OH
- Teach weekly lectures in courses on Exercise Physiology & Human Physiology
- Facilitate research focused on sport-related concussion & exercise physiology
- Support the development of a Sport Science Club
- Advise MDN graduate research projects
- Advise undergraduate students regarding course selections & academic and career opportunities

08/2022 – 8/2024 Lecturer
University of Dayton, Department of Health & Sport Science, Dayton, OH
- Teach weekly lectures in courses on Human Physiology
- Facilitate weekly laboratories in Physiology of Exercise Laboratories
- Advise undergraduate students regarding course selections & academic and career opportunities
- Revamp the exercise physiology laboratory through improvement of laboratory equipment & exposure to different exercise physiology concepts
- Develop a fundamental in exercise physiology course for students with a focus in Health & Wellness

08/2014 – 05/2017 Visiting Professor
Grand Valley State University, Movement Science Department, Allendale, MI
- Managed 24 credit hours of teaching in an academic year
- Taught weekly lectures in courses on Exercise Physiology, Research Methods, Exercise Testing & Prescription, and Fieldwork in Exercise Science
- Facilitated weekly laboratories in Exercise Testing Laboratory & Laboratory Practicum in Exercise Science
- Organized and lead a team in redesigning laboratory objectives and coursework
- Mentored undergraduate students regarding academic and career opportunities
- Supported faculty and student ACSM conference presentations at a state, regional, and national level

TEACHING EXPERIENCE

01/2018 – 12/2021 Graduate Teaching Assistant
University of Calgary, Faculty of Kinesiology
Courses taught:
- Exercise Physiology Laboratory – Winter 2018
- Tests & Measurements – Winter 2019, Winter 2020, & Fall 2021

Taught face-to-face & online

08/2012 – 05/2014 Graduate Teaching Assistant
University of Kentucky, Department of Kinesiology and Health Promotion
Graduate courses taught:
- Physiology of Exercise Laboratory – Fall 2013
- Exercise Stress Testing & Prescription Laboratory – Winter 2014

Undergraduate courses taught:
- Exercise Testing & Prescription – Fall 2013 & Winter 2014
- Activity Courses (Volleyball, Racquetball, Walk/Jog, Weight Training, Fitness Walking) – Fall 2012 & Winter 2013

Taught face-to-face

RESEARCH EXPERIENCE

09/2019 – 07/2022 Graduate Research Assistant
University of Calgary, Sport Injury Prevention Research Centre
Supervisors: Dr. Jonathan Smirl & Dr. Carolyn Emery
- Facilitate exercise testing measures including VO_2, EKG, BP, Cerebral blood flow measures (via TCD) on treadmill and cycle ergometers

- Assist with exercise measures during protocols in a lower body negative pressure chamber
- Facilitate performance measures (20m shuttle run, vertical jump, & grip strength) for Surveillance in High Schools to REDuce concussions (SHRed) study
- Assist with standardizing exertion & performance protocols
- Facilitate post-injury exercise testing (VO2 & cerebral blood flow measures)
- Monitor ActiGraph utilization

09/2017 – 06/2019 Graduate Research Assistant
University of Calgary, Sport Injury Prevention Research Centre
Supervisor: Dr. Kathryn Schneider
- Assist with on-ice hockey skills testing & baseline concussion testing
- Facilitate exercise testing (treadmill & cycle protocols)
- Monitor injury surveillance & weekly exposure in high school rugby athletes

09/2017 – 06/2019 Graduate Research Assistant
University of Calgary
<u>Thesis Research Project</u>: Feasibility, reliability, and concurrent validation of a field test of exertion in high school students
<u>Description</u>: Evaluated the feasibility and reliability of a field test of aerobic capacity (Modified 20m shuttle run test) and evaluated the concurrent validity of a modified 20m shuttle run test compared to the Buffalo Concussion Treadmill Test (BCTT) in high school students

01/2016 – 05/2017 Research Assistant
Grand Valley State University
<u>Research Project</u>: Effect of Paleolithic Diet on HIIT Exercise Intervention on Health Markers
<u>Description</u>: Determine the effects of a Paleolithic diet intervention and high intensity interval training will improve markers of health in individuals with metabolic syndrome
- Assist with baseline measures – resting measures, circumferences, skinfolds, underwater weighing
- Facilitate cardiorespiratory fitness assessments
- Monitory exercise training sessions
- Assist with analysis of blood collection

01/2013 – 05/2014 Research Assistant
University of Kentucky
<u>Research Project</u>: Cardiorespiratory Responses in Healthy-Weight and Obese Women and Children
<u>Description</u>: Examined the relationship between physical activity and arterial health in women and children
<u>Research Project</u>: Acute Exercise and Arterial Function
<u>Description</u>: Utilized pulse wave velocities to determine arterial stiffness and observed the effect of maximal exercise testing on arterial function in healthy college age males
- Assisted with anthroplometric & EKG measures and stride length assessment
- Monitored vitals during VO2 Max testing

08/2010 – 12/2011 Research Intern

James Madison University, Morrison-Bruce Center for the Promotion of Physical Activity for Girls & Women
Research Project: Women Atherosclerosis Inflammation and Thrombosis Study
Description: Determined the effects of diet induced weight loss and exercise on traditional and non-traditional risk factors for cardiovascular disease in sedentary post-menopausal women

- Assisted with exercise intervention program
- Assessed subject overall physical fitness
- Facilitated VO2max testing
- Measured body composition with DXA scans & circumference measures
- Assisted graduate students with blood analysis
- Monitored subjects throughout the exercise sessions

Community Outreach Programs: Girls' Golf, Movin' & Grovin' Day, & Alumnae Health & Fitness Program
Description: Enhancing the well-being of girls through the promotion of active and healthy lifestyle

- Encouraged girls & women to live a healthy lifestyle
- Educated girls on healthy eating & exercise habits
- Demonstrated proper golf technique
- Developed physical activity stations related to team building, flexibility, golf, muscular strength, cardiorespiratory fitness, & self-image
- Assessed cardiovascular health, bone health, & physical fitness of JMU alumnae
- Designed exercise programs to improve health & fitness for alumnae

PRESENTATIONS

Informing a physiologically based exercise strategy to improve recovery following concussion in high school athletes
Proposal Presentation-January 2021
Canadian Traumatic Brain Injury Research Consortium, Canada (Virtual)

Characterizing physical activity levels and associated physiological measures during exertion in high-school students following sport-related concussion
Proposal Presentation-January 2020
Canadian Traumatic Brain Injury Research Consortium, Lake Louise, AB, Canada

Validation of a field test of exertion in concussed high school students
Proposal Presentation-June 2019
Canadian Traumatic Brain Injury Research Consortium, Niagara-on-the-Lake, ON, Canada

Validation of a Field Test of Exertion in Adolescents
Poster Presentation-May 2019
Canadian Academy of Sport and Exercise Medicine Annual Symposium, Vancouver, BC, Canada

Restricted Carbohydrate Diet and Exercise Improves Metabolic and Inflammatory Profiles in Metabolic Syndrome
Poster Presentation– June 2018
American College of Sport Medicine Annual Conference, Minneapolis, MN

Restricted Carbohydrate Diet and Exercise Increase BDNF, Cognitive Function, and Metabolic Profiles
Poster Presentation – June 2018
American College of Sport Medicine Annual Conference, Minneapolis, MN

Effects of a Ketogenic Diet & Exercise Interventions on Cognitive Function
Poster Presentation- April 2017
Experimental Biology Chicago, IL

PUBLICATIONS

Lauren N. Miutz, PhD, Joel S. Burma, MSc, Patrice Brassard PhD, Aaron A. Phillips, PhD, Carolyn A. Emery PT, PhD, and Jonathan D. Smirl, PhD. (2023). Comparison of the Buffalo Concussion Treadmill Test to a Physiologically Informed Cycle Test: Calgary Concussion Cycle Test. Sports Health

Matthew Neill, Joel S. Burma, **Lauren N. Miutz,** Courtney M. Kennedy, Linden C. Penner, Kailey T. Newel, & Jonathan D. Smirl. (2023). Transcranial Doppler based assessments of sport-related concussion: A systematic review. Journal of Neurotrauma.

Lauren N. Miutz, PhD, Joel S. Burma, MSc, Rowan K. Van Roessel, Nathan E. Johnson, Carolyn A. Emery PT, PhD, Patrice Brassard, PhD, and Jonathan D. Smirl, PhD. (2023). The Effect of Supine Cycling and Progressive Lower Body Negative Pressure on Cerebral Blood Velocity Responses. Journal of Applied Physiology

Johnson, N., Burma, J., Seok, J., **Miutz**, **L.,** Smirl, J. (2023). Influence of sex on the reliability of cerebral blood velocity regulations during lower body negative pressure and supine cycling with considerations of the menstrual cycle. Physiological Measurement.

Joel S. Burma, Andrew P. Lapointe, Megan Wilson, Linden C. Penner, Olivia A. Galea, Courtney M. Kennedy, Kailey T. Newel, **Lauren N. Miutz**, Jeff F. Dunn, & Jonathan D. Smirl. (2023). Adolescent sport-related concussion and the associated neurophysiological changes: A systematic review. Pediatric Neurology

Eliason, P. H., Galarneau, J. M., Kolstad, A. T., Pankow, M. P., West, S. W., Bailey, S., **L. Miutz** ... & Emery, C. A. (2023). Prevention strategies and modifiable risk factors for sport-related concussions and head impacts: a systematic review and meta-analysis. British journal of sports medicine.

Lauren N. Miutz EP-C, M.S., Carolyn A. Emery PT, PhD, Amanda M. Black CAT(C), PhD, Matt J. Jordan PhD, Jonathan D. Smirl PhD, Kathryn J. Schneider PT, PhD. (2022). The effect of physical exertional testing on post-concussion symptom scale scores in male and female high school students. Pediatric Exercise Science.

Lauren N. Miutz, **MSc**, Kailey T. Newel, Joel S. Burma, MSc, Andrew P. Lapointe, PhD, Carolyn A. Emery, PT, PhD, & Jonathan D. Smirl, PhD. (2022). Physical Activity Following Sport-Related Concussion in Adolescents: A Systematic Review. Journal of Applied Physiology.

Joel Burma, Courtney Kennedy, Linden Penner, **Lauren Miutz**, Olivia Galea, Philip Ainslie, & Jonathan Smirl. (2021). Long-term heart transplant recipients: Heart rate related effects on augmented transfer function coherence during repeated squat-stand maneuvers in males. American Journal of Physiology Regulatory, Integrative and Comparative Physiology

Joel S Burma, Rebecca M. Wassmuth, Courtney M. Kennedy, **Lauren N. Miutz**, Kailey T. Newel, Joseph Carere, & Jonathan D. Smirl. (2021). Does task complexity impact the neurovascular coupling response similarly between males and females? Physiological Reports.

Joel S. Burma, Sarah Graver, **Lauren Miutz,** Paige Copeland, Alannah Macaulay, and Jonathan D. Smirl. (2021). The validity and reliability of ultra-short-term heart rate variability parameters and the influence of physiological covariates. Journal of Applied Physiology.

Joel S. Burma, **Lauren Miutz**, Kailey Newel, Lawrence Labrecque, Audrey Drapeau, Patrice Brassard, Paige Copeland, Alannah Macaulay, Jonathan D. Smirl (2021). What recording duration is required to provide physiologically valid and reliable dynamic cerebral autoregulation transfer functional analysis estimates? Physiological Measures: Special Issues.

Robert F. Graham, Cody Ray van Rassel, MKin, Joel S. Burma BHK, Trevor Dean Rutschmann, MSc, **Lauren N. Miutz, MSc**, Bonnie Sutter, CAT(C), Kathryn Schneider, PT, PhD. (2021). Concurrent Validity of a Stationary Cycling Test and the Buffalo Concussion Treadmill Test in Adults with Concussion. Journal of Athletic Training.

Heidi R. Morrison, BSc (Hon), **Lauren N. Miutz, EP-C, MSc**, Carolyn A. Emery, PT, PhD, Jonathan D. Smirl, PhD. (2020). A Standardized Buffalo Concussion Treadmill Test Following Sport-Related Concussion in Youth: Do ActiGraph Algorithms Matter? Journal of Athletic Training.

Trevor D. Rutschmann, MSc, **Lauren N. Miutz, MSc**, Clodagh M. Toomey, PT, PhD, Keith O. Yeates, PhD, Carolyn A. Emery, PT, PhD, Kathryn J. Schneider, PT, PhD. (2020). Changes in exertion-related symptoms in adults and youth who have sustained a sport-related concussion. Journal of Science and Medicine in Sport.

Amanda M. Black, CAT(C), PhD, **Lauren N. Miutz, M.S.,** Vineetha Warriya KV, PhD, Kathryn Schneider, PT, PhD, Keith Owen Yeates, PhD, Carolyn A. Emery, PT, PhD. (2019). Baseline performance of high school rugby player on the Sport Concussion Assessment Tool (SCAT5)**.** Journal of Athletic Training. doi: 10.4085/1062-6050-123-19

Gyorkos A, Baker M H, **Miutz L N**, Lown D A, Jones M A, Houghton-Rahrig L D. (2019). Carbohydrate-restricted Diet and High-intensity Interval Training Exercise Improve Cardio-metabolic and Inflammatory Profiles in Metabolic Syndrome: A Randomized Crossover Trial. Cureus 11(9).

Gyorkos A, Baker M H, **Miutz L N**, Lown D A, Jones M A, Houghton-Rahrig L D. (2019). Carbohydrate-restricted Diet and Exercise Increase Brain-derived Neurotrophic Factor and Cognitive Function: A Randomized Crossover Trial. Cureus 11(9).

Publications in preparation:

Lauren N. Miutz, PhD, Courtney Kennedy, Carolyn A. Emery, PT, PhD, Jonathan D. Smirl, PhD. (2023). Comparison in Wrist-worn versus Waist-worn ActiGraphs in Adolescents.

Published Abstracts:

Lauren N. Miutz EP-C, M.S., Amanda M. Black CAT(C), PhD, Matt J. Jordan PhD, Carolyn A. Emery PT, PhD, Kathryn J. Schneider PT, PhD. (2020). Feasibility, Reliability, and Concurrent Validity of a Field Test of Exertion in High School Students. Clinical Journal of Sport Medicine 30 (3).

Lauren N. Miutz EP-C, M.S., Carolyn A. Emery PT, PhD, Amanda M. Black CAT(C), PhD, Matt J. Jordan PhD, Kathryn J. Schneider PT, PhD. (2019). Validation of a field test of exertion in adolescents. Clinical Journal of Sport Medicine

Robert Graham, Cody van Rassel, MKin, Trevor Rutschmann, MSc, **Lauren Miutz, MS**, Bonnie Sutter, CAT(C), Kathryn Schneider, PT, PhD. (2019) The Concurrent Validity of a Stationary Cycling Test of Exertion in Individuals Following a Sport-Related Concussion. Clinical Journal of Sport Medicine.

Amanda M. Black, CAT(C), PhD, Stacy R. Sick, BSc, CAT(C), Paul H. Eliason, MSc, **Lauren N. Miutz, MS**, Brent E. Hagel, PhD, Luz Palacios-Derflingher, PhD, Kathryn J. Schneider, PT, PhD, Carolyn A. Emery, PT, PhD. (2019). Match injuries among high school rugby players in Calgary, Canada. Clinical Journal of Sport Medicine 28 (3).

Amanda M. Black, CAT(C), PhD, **Lauren N. Miutz, MS**, Paul H. Eliason, MSc, Kathryn Schneider, PT, PhD, Keith O. Yeates, PhD, Carolyn A. Emery, PT, PhD. (2019). The association of history of concussion with baseline scores on the sport concussion assessment tool (SCAT5) in high school rugby players. Orthopaedic Journal of Sports Medicine. Vol 7, Issue 3

KJ Schneider PT, PhD, P Eliason MSc, C van Rassel MKin, C Hilson, S Sick BSc, CAT(C), **L Miutz M.S.,** CA Emery PT, PhD. (2019). Primary prevention of sport-related concussion in youth ice hockey: A pilot randomized controlled trial.

Lauren Miutz, Alex Eason, Mark Baker, Deborah Lown, Amy M. Gyorkos. (2018). Restricted Carbohydrate Diet and Exercise Improves Metabolic and Inflammatory Profiles in Metabolic Syndrome. Medicine and Science in Sports and Exercise, Volume 50:5 Supplement

Amy M. Gyorkos, Mark Baker, Alex Eason, Deborah Lown, **Lauren Miutz.** (2018). Restricted Carbohydrate Diet and Exercise Increase BDNF, Cognitive Function, and Metabolic Profiles. Medicine and Science in Sports and Exercise, Volume 50:5 Supplement

RELATED EXPERIENCE

05/2018 – 05/2021 Graduate Student Mentorship
University of Calgary
Heidi Morrison – Undergraduate Honors Student & Summer Student
Kailey Newel – Summer Student
Sarah Graver – Summer Student & Undergraduate Honors Student
Robby Graham – Summer Student

04/2019 – 05/2021 Kinesiology Mentorship Program
University of Calgary
PhD Student Mentee – mentored by Post-Doctoral Fellow
PhD Candidate Mentor – mentored first year MSC student

04/2019 – 05/2021 Kinesiology Graduate Student Association (KGSA)
University of Calgary
President
Vice President

08/2020 – Present Canadian Concussion Network (CCN)
Alberta, Canada
PhD Trainee Representative

05/2020 – 08/2021 NFL Executive Team
University of Calgary

	Trainee Representative
01/2020 – 06/2021	Canadian Traumatic Brain Injury Research Consortium (CTRC) *Alberta, Canada* Trainee Representative
09/2020 – 05/2021	Graduate Education Committee *University of Calgary* Graduate Student Representative – aligned with KGSA Presidency term
01/2019 – 12/2020	Fitness & Rehabilitation for Persons with Physical Disabilities *University of Calgary* Student Volunteer
03/2018 – 04/2020	Integrated Concussion Research Program (ICRP) *University of Calgary* President of Trainee Committee MSc Trainee Representative
01/2012 – 06/2012	Physical Therapy Aide *Arthritis and Rheumatism Associates, PC* Wheaton, MD
10/2007 – 08/2011	Community Recreation Associate *Sheltering Arms Rehabilitation Center* Richmond, VA

AWARDS & SCHOLARSHIPS

09/2021 – 08/2022	Libin Cardiovascular Institute Doctoral Scholarship in Women's Cardiovascular Health –$12,500
01/2021	Kinesiology Leadership Scholarship – $5,000
01/2021	Scholar Award of the Canadian Traumatic Brain Injury Research Consortium – $500
09/2020 – 08/2021	University of Calgary Integrated Concussion Research Program (ICRP) Graduate Studentship Funding – $26,000
09/2020 – 08/2021	Libin Cardiovascular Institute Doctoral Scholarship in Women's Cardiovascular Health – $12,500
09/2019 – 08/2020	University of Calgary Integrated Concussion Research Program (ICRP) Graduate Studentship Funding – $26,000
09/2019	Kinesiology Leadership Scholarship – $5,000
09/2018 – 09/2019	Vi Riddell Pediatric Rehabilitation Research Graduate Studentship Award – $22,000
05/2019	Faculty of Kinesiology Presentation Award – $1,000
05/2019	Faculty of Graduate Studies Travel Award – $750