Nick Foreman

EDUCATION

Exercise Physiology and Applied Nutrition, PhD   2022 – present
George Washington University, Washington, DC
Advisor: Matthew Barberio, PhD

Kinesiology, MS   2020 – 2022
Emphasis in Exercise Physiology
University of Minnesota, Minneapolis, MN
Advisor: Christopher Lundstrom, PhD

Human Physiology, BA   2017 – 2019
University of Minnesota, Minneapolis, MN

RESEARCH EXPERIENCE

Research Assistant   May 2021 – December 2021
Laboratory of Physiological Hygiene and Exercise Science, University of Minnesota
PI: Dr. Li Li Ji

- Assisted with development of hindlimb immobilization methods and Western blot protocols. Learned basic laboratory and mouse handling techniques.

Research Assistant   Oct. 2018 – May 2022
Human and Sport Performance Laboratory, University of Minnesota
PI: Dr. Christopher Lundstrom

- Obtained grant funding, designed, and led a study on comparisons between combinations of treadmill speed and incline in trained runners. Collected and analyzed all ventilatory data. Results were published in a manuscript.
- Designed and co-led a study on retrospective prediction of recreational marathon performance from anthropometric and graded exercise testing variables. Results were presented as a poster.

PUBLICATIONS

Lundstrom, C., **Foreman, N.**, & Biltz, G. (2022). "Practices and Applications of Heart Rate Variability Monitoring in Endurance Athletes". *International Journal of Sports Medicine.* https://doi.org/10.1055/a-1864-9726

Foreman, N., Lee, E., & Lundstrom, C. (2022). Assessment of a Treadmill Speed Incline Conversion Chart: A Validation Study. *International Journal of Sports Physiology and Performance.* https://doi.org/10.1123/ijspp.2021-0021

Foreman, N.[*], Hesse, A.[*], & Ji, L. (2021). Redox Signaling and Sarcopenia: Searching for the Primary Suspect. *International Journal of Molecular Sciences.* 2021; 22(16):9045. https://doi.org/10.3390/ijms22169045

CONFERENCE POSTERS

Lundstrom, C., **Foreman, N.**, Lee, E., Hesse, A., & Biltz, G (2021). *Training-related changes in cardiac autonomic function assessed before and after graded exercise testing.* Poster submitted to the 2022 American College of Sports Medicine Annual Meeting.

Foreman, N.[*], Hesse, A.[*], & Lundstrom, C. (2021). *Machine Learning Fails to Improve Marathon Time Prediction Compared to Multiple Linear Regression.* Poster presented at the American College of Sports Medicine Annual Meeting.

Lundstrom, C., Lee, E., **Foreman, N.**, Hesse, A., & Biltz, G. (2021). *Heart rate variability at rest and during steady state exercise in marathon training students.* Poster presented at the American College of Sports Medicine Annual Meeting.

Foreman, N., Lee, E., & Lundstrom, C. (2020). *A Validation Study of a Treadmill Speed Incline Conversion Chart.* Poster presented at the American College of Sports Medicine Annual Meeting.

Foreman, N., Lundstrom, C. (2019). *Exercise Testing Protocol Affects Time to Exhaustion Before and After Marathon Training*. Poster presented at the School of Kinesiology Research Day.

TEACHING EXPERIENCE

EXNS 2111: Exercise Physiology TA   Aug. 2022 – present
The George Washington University, Washington, DC
- Co-taught weekly labs on body composition, nutrition measurement, and submaximal exercise testing. Created rubrics and designed lab reports to improve teaching pedagogy.

KIN 4385: Exercise Physiology TA   Aug. 2020 – May 2021
University of Minnesota, Minneapolis, MN
- Oversaw weekly labs for 16 students. Lab topics included exercise testing, body composition, anaerobic testing, and ventilatory thresholds.

KIN 3385: Human Physiology TA   Aug. 2021 – May 2022
University of Minnesota, Minneapolis, MN
- Co-taught weekly labs for 72 students. Developed new labs on the length-tension and force-velocity relationships.

AWARDS

Hauge Fellowship, University of Minnesota   April 2021
Undergraduate research grant, University of Minnesota   March 2019

GRANTS APPLIED FOR

1. *Ultra-Endurance Sports Science & Medicine Research Grant (2021)*
   The Paramedic Foundation
   $7000
   Assessing Autonomic Control During a 24-hour Ultramarathon
   Student Investigator, 70% effort

GRANTS AWARDED

1. *Hauge Fellowship (2021)*
   School of Kinesiology, University of Minnesota
   $1000
   Heart Rate Variability and Endurance Performance After Submaximal Running
   Student Investigator, 90% effort
2. *Graduate Students in Education and Human Development Research Grant (2021)*
   University of Minnesota
   $150
   Cortisol Dynamics and Endurance Performance After Submaximal Running
   Student Investigator, 100% effort
3. *Undergraduate Research Opportunities Program (2019)*
   University of Minnesota
   $1500
   Validation of a conversion chart for treadmill speed and incline
   Student Investigator, 70% effort

TECHNICAL COMPETENCIES

R/RStudio
- Intermediate proficiency in data cleaning and visualization with an emphasis on organization of longitudinal time series data.
- Comfortable applying machine learning models to analyze graded exercise testing data and computing measures of heart rate variability for reproducible analysis.

Python
- Entry-level proficiency through introductory coursework. Proficient in web scraping.

Wet lab techniques
- Entry-level proficiency in protein quantification and gel electrophoresis with skeletal muscle and ELISA for blood biomarkers.

Graded exercise testing

- Experience supervising graded exercise testing and interpreting results for non-clinical populations with an interest in exercise prescription in trained runners.
- Developed custom exercise testing protocols to prescribe constant intensity exercise in trained runners.

Blood collection and processing

- Entry-level experience collecting blood via venipuncture in healthy individuals at rest.

COMMUNITY INVOLVEMENT

Assistant Cross Country & Track Coach   August 2020 – May 2022
Roseville High School, Roseville, MN
- Wrote all workouts for the cross country and distance track teams. Implemented research-informed coaching principles to improve team performance and decrease injury risk.
- Coached four runners to All-State performances and one team to a top-10 finish at the State meet.

Medical Scribe   December 2019 – August 2020
Emergency Physicians Professional Association, Bloomington, MN
- Provided electronic health record documentation for medical providers in a primary care clinic and two emergency departments

LANGUAGES

English - Native proficiency
Spanish - Working proficiency through study abroad in Cuernavaca, Mexico