

KELSEY RUSHING, MS, RDN

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EDUCATION

Doctor of Philosophy
Anticipated, 2022

University of Alabama at Birmingham, Birmingham, AL
Department of Nutrition Sciences
Major Area: Nutrition Sciences
Concentration: Sports Nutrition
Dissertation: Effects of dietary R,S-1,3-butanediol diacetoacetate on energy balance, adiposity, and hepatic health

Master of Science
August 2017

University of Alabama at Birmingham, Birmingham, AL
Department of Nutrition Sciences
Major Area: Nutrition Sciences
Concentration: Clinical Nutrition

Bachelor of Science
May 2016

Auburn University, Auburn, AL
Department of Nutrition, Dietetics, and Hospitality Management
Major Area: Nutrition
Concentration: Nutrition and Dietetics
Minor: Italian Studies, Honors Studies

RESEARCH EXPERIENCE

Concentration-dependent effects of exogenous ketone ester on skeletal muscle atrophy and adiposity in aging mice. 2021-present

Department of Nutrition Sciences, Department of Human Studies, UAB; Department of Nutrition and Exercise Physiology, University of Missouri

Completed a randomized study to evaluate the response to a dietary ketone ester, R,S-1,3-butanediol diacetoacetate, on skeletal muscle and adiposity in aging mice.

Effects of an exogenous ketone ester on markers of liver metabolism 2021-present

Department of Nutrition Sciences, Department of Human Studies, UAB; Department of Nutrition and Exercise Physiology, University of Missouri

Designed and carried out a randomized study to evaluate the response to a dietary ketone ester, R,S-1,3-butanediol diacetoacetate, on body weight, adiposity, metabolism, and markers of non-alcoholic fatty liver disease in mice

Breath acetone concussion ketone study (BrACKS) 2020-present

Department of Nutrition Sciences, Department of Human Studies, UAB

Investigated the association of breath acetone measures with pre- and post-concussion measures in collegiate athletes.

Ketone supplementation to improve functional outcomes in adolescents post sports-related concussion 2019-2022

Department of Nutrition Sciences, Department of Human Studies, UAB

Designed and carried out a longitudinal study in adolescent athletes to determine whether ketone supplementation post-concussion influences cognitive, biomechanical, metabolic, and inflammatory measures.

Food and nutrition insecurity in student athletes, preliminary survey data collection 2019-2021

Department of Nutrition Sciences, UAB

Designed and carried out a cross-sectional study to evaluate food and housing security in collegiate student athletes. The one-time survey will also provide data on adverse health outcomes associated with food and housing insecurity.

A combined aerobic, interval, and resistance training program on ACFT and APFT scores in ROTC cadets

2019-2021

Department of Human Studies, UAB

Contributed to the creation of a new training program in ROTC cadets. This longitudinal study evaluated physical training test scores, diet records, and body composition to determine the efficacy of a new training program.

PUBLICATIONS

Peer-Reviewed Manuscripts

Roberts, B, **Rushing, K**, Plaisance, E. (2020) Sex differences in body composition and fitness scores in military ROTC cadets. *Military Medicine*

Manuscripts in Preparation

Rushing, K, Bolyard, M, Rector, S, Plaisance, E. Effects of an exogenous ketone ester on markers of liver metabolism.

Roberts, B, Deemer, S, **Rushing, K**, Plaisance E. Concentration-dependent effects of exogenous ketone ester on skeletal muscle atrophy and adiposity in aging mice.

Cannon, S, Mintz, J, Roberts, B, **Rushing, K**, Jenkins, G, Plaisance, EP, & Morris, CE. Evaluation of the Effectiveness of ROTC Army Cadet Exercise Training for the Army Combat Fitness Test.

Peer-Reviewed Abstracts

Rushing, K, Ticknell, J, Bolyard, M, Niedergeses, C, Rector, S, Plaisance, E. (2021) Effects of a ketone supplement on energy balance and adiposity in mice on a high-fat high-sugar diet. *The Obesity Society*

OTHER WRITING & COMPOSURE

Disordered Eating Policies and Procedures, Department of Sports Medicine, The University of Alabama at Birmingham, May 2018

Diabetes Mellitus Policies and Procedures, Department of Sports Medicine, The University of Alabama at Birmingham, May 2018

PRESENTATIONS

Poster Presentations

Rushing, K, Cannon, S, Mintz, J, Roberts, B, Jenkins, G, Fisher, G, Plaisance, E, Morris, C. Evaluation of the effectiveness of ROTC Army cadet exercise training for the Army combat fitness test. Southeast American College of Sports Medicine Annual Meeting, February 2022.

Rushing, K, Ticknell, J, Bolyard, M, Niedergeses, C, Rector, S, Plaisance, E. Effects of a ketone supplement on energy balance and adiposity in mice on a high-fat high-sugar diet. Obesity Week, November 2021.

Rushing, K. Abadie, A, Jenkins, G, Willis, K, Steen, M, Watson, E, Ferrill, L, McCollough, K, Plaisance, E, Morris, C. Ketone supplementation to improve functional outcomes in adolescents post sports-related concussion. Southeast American College of Sports Medicine Annual Meeting, February 2021.

Rushing, K. Delk-Licata, A, Behrens, C, Bertrand, B, Fernandez, F, Plaisance, E. Timed protein intervention should consider energy balance to have an impact on body composition in a collegiate football team. UAB Center for Exercise Medicine 7th Annual Symposium, UAB, September 2019, Birmingham, AL.

Oral Presentations

Rushing, K. Ketone supplementation to improve functional outcomes in adolescents post sports-related concussion. UAB Department of Nutrition Sciences and Nutrition Obesity Research Center Annual Trainee Retreat, August 2020.

Presented Research

Rushing, K. Bolyard, M, Rector, S, Plaisance, E. Effects of a Ketone Supplement on Energy Balance and Adiposity in Mice on a High-fat High-sugar Diet. UAB School of Health Professions Alpha Eta Research Day, February 2022.

Dellana, J, Chimera, L, Farris, A, Nunnery, D, Harman, T, Dommel, A, **Rushing, K.** Stowers, L, Behrens, C. The impact of sexual orientation on food insecurity among Division I student athletes. Southeast American College of Sports Medicine Annual Meeting, February 2022.

Chimera, L, Dellana, J, Farris, A, Wentz, L, D, Harman, T, Dommel, A, **Rushing, K.** Stowers, L, Behrens, C. Food insecurity among college student athletes in the Southeastern region: a multi-site study. Southeast American College of Sports Medicine Annual Meeting, February 2022.

Invited Speaking

Rushing, K. Journey to dietetics. NUTR 210 Introduction to Nutrition and Dietetics. Samford University. October 2021.

Rushing, K. Sports Dietetics. Student Dietetic Association. Samford University. February 2019.

Rushing, K. Winning Nutrition. Hellas Construction Birmingham Coaching Clinic, UAB, March 2018.

RESEARCH FUNDING

Funded Research Projects

Effects of ketone supplementation on postprandial lipemia

Grant: Research Voucher Program Award

Funding Source: Center for Clinical and Translational Science

Role: Co-investigator

Funding Request: \$4,725.00

Status: *Funded, 2019*

Ketone supplementation to improve functional outcomes in adolescents post-concussion

Grant: Faculty Development Grant Program 2019-2020

Funding Source: UAB Office of the Provost and UAB Faculty Senate (Internal)

Role: Co-investigator

Funding request: \$10,000

Status: *Funded, 2019*

Submitted Research Funding

Ketone supplementation to improve functional outcomes in adolescents post-concussion

Grant: 2019-2020 CPSDA Research Award

Funding Source: Collegiate and Professional Sports Dietitians Association (CPSDA)

Role: Co-investigator

Funding Request: \$15,000.00

Status: *Not funded, 2019*

RELATED PROFESSIONAL TRAINING & CERTIFICATIONS

Associate Certificate

May 2020

Center for the Integration of Research, Teaching, and Learning

Registered Dietitian

September 2017-present

Commission on Dietetic Registration

Licensed Dietitian

September 2017-present

Alabama Board of Examiners for Dietetics and Nutritionists

CPR, First Aid, AED

September 2017-present

American Red Cross

Certified Manager

October 2015-October 2020

National Restaurant Association

ServSafe Management

Intensive Course in Pediatric Nutrition

February 2017

Department of Pediatrics, UAB

PROFESSIONAL EXPERIENCE

Graduate Research Trainee

August 2017-present

Department of Nutrition Sciences, UAB

Mentor – Dr. Eric P. Plaisance

Design protocols and conduct research with pediatric, athletic, and animal populations.

Performance Dietitian

August 2017-August 2020

Department of Athletics, UAB

Conducted dietary and anthropometric assessments, develop educational materials, data entry and analysis for student athletes at UAB. Implemented performance nutrition interventions to aid in fueling and recovery for the athletes as part of research projects through the Department of Nutrition Sciences.

Wellness Dietitian

August 2017-December 2017

Department of Campus Recreation, UAB

Conducted dietary and anthropometric assessments and developed educational materials for current undergraduate and graduate students at UAB.

Dietetic Intern (Graduate Internship)

August 2016-August 2017

Department of Nutrition Sciences; Concentration: Clinical Nutrition, UAB

Established collaborative relationships with other healthcare professionals to deliver effective nutrition. Applied evidence-based guidelines, systematic reviews, and scientific literature to nutrition practice.

Nutrition and Food Service Intern (*Undergraduate Internship*) May 2015-August 2015
East Alabama Medical Center, Opelika, AL

Determined compliances for patient diets and recorded nutritional information for current and new recipes.
 Created new products and menus for the tray line and the employee café.

Undergraduate Research Assistant January 2013-May 2013
Department of Biological Sciences, Auburn University

Mentor – Dr. Aaron Rashotte
 Completed bench work to aid in studies about the role of transcription factors in controlling plant development.

MENTORING & TEACHING

Instructor of Record August 2020-present
Department of Human Studies, UAB

Developed the curriculum and course materials for both remote and in-person teaching formats to successfully educate undergraduate and graduate students from various health-related majors.

KIN 405 Sports Nutrition

KIN 674 Advanced Sports Nutrition

Co-Instructor June 2021-present
Department of Nutrition Sciences, UAB

Collaborated with primary instructor to develop activities and instruction materials to enhance learning for undergraduate and graduate students.

NTR 320 Nutrition and the Consumer

NTR 632 Nutrition Education and Counseling

Teaching Assistant June 2021-August 2021
Department of Nutrition Sciences, UAB

Provided supplemental assistance to students to reinforce learning.

NTR 500 Communications in Nutrition

Mentor January 2018-present
Department of Athletics, Department of Nutrition Sciences, Department of Human Studies, UAB

Guide graduate and undergraduate students in research and nutrition. Objectives are to gain critical skills for conducting independent human subjects research and practicing nutrition sciences.

Clinical Preceptor January 2018-August 2020
Department of Athletics, Department of Nutrition Sciences, UAB

Serve as a preceptor for current graduate dietetic interns from surrounding universities. Provide experiences in clinical nutrition, community nutrition, and food service.

New Student Liaison Spring 2017
Department of Nutrition Sciences, UAB

Served as a liaison to graduate students and dietetic interns. The objectives were to provide prospective students and interns with leadership and guidance in internship selection, relocation to Birmingham, and general advising related to these processes.

Community Nutrition Committee June 2014
Our House, Auburn, AL

The program's objective was to provide nutrition education to underserved communities. Held weekly nutrition education sessions for underprivileged children. Created sample meals and educational tools for parents.

HONORS, ACTIVITIES, & AWARDS

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| Carol B. Craig Scholarship, Department of Nutrition Sciences, UAB | Spring 2017 |
| Lettie Pate Whitehead Foundation Scholarship, Department of Nutrition Sciences, UAB | Spring 2017 |
| Delta Epsilon Iota Academic Honor Society, Auburn University | August 2014-May 2016 |
| Honors College, Auburn University | August 2011-May 2016 |
| Dean's List | Fall 2015 |
| Spirit of Auburn Founders Scholarship, Auburn University | August 2011-May 2015 |
| Killgore Scholarship, Opelika, AL | August 2011-May 2015 |
| Auburn Abroad Program, Taormina, Italy | Summer 2012 |
| Tallapoosa River Electric Cooperative Scholarship, Opelika, AL | Fall 2011 |

PROFESSIONAL & ACADEMIC AFFILIATIONS

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| Collegiate and Professional Sports Dietetics Association (CPSDA) | 2017-present |
| American College of Sports Medicine (ACSM) | 2017-present |
| Sports Cardiovascular and Wellness Nutrition (SCAN) | 2016-present |
| Academy of Nutrition and Dietetics (AND) | 2015-present |
| Birmingham District Dietetic Association (BDDA) | 2016-2018 |
| Alabama Dietetic Association (ALDA) | 2016-2018 |

SERVICE

Manuscript Reviewer 2022
International Journal of Exercise Science

Professional Development Committee May 2020-August 2020
Department of Nutrition Sciences, UAB
Collaborated with professionals in various industries to provide networking opportunities, workshops, and seminars to current nutrition sciences students.

UAB Internal Wellness Committee December 2019-August 2020
UAB Employee Wellness
Served as the Athletics Department representative to the UAB Internal Wellness Committee. The committee's objective is to provide resources and education to UAB Hospital and UAB Campus employees.

Sports Nutrition Volunteer September 2014-December 2015
Department of Athletics, Auburn University
Provided nutrition education to and managed a fueling station for student athletes. The purpose of this program is to follow current performance nutrition and food safety guidelines to optimize athletic performance.

Counselor August 2013-May 2015
Rape Counselors of East Alabama, Auburn, AL
Provided immediate support to victims and managed a hotline for potential, current, and previous victims at time of crises. Offered ongoing counseling and support services to victims of rape.

Community Development Volunteer

Spring 2014

Alternative Student Breaks, Auburn University

Worked with a community in Costa Rica and provided support to them in issues such as hunger and poverty and community development.

Community Committee

April 2012-December 2012

Beat Bama Food Drive, Auburn University

Conducted community outreach and provided incentives to the surrounding Auburn-Opelika area to increase food donations to local food banks.