

Mark A. Sarzynski, PhD, FACSM, FAHA

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Arnold School of Public Health
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EDUCATION

Doctor of Philosophy, Kinesiology, November 2008

Michigan State University, East Lansing, MI

Emphasis: Exercise Physiology

Cognates: Physical Activity Epidemiology, Principles and Techniques of Genetics and Molecular Biology, Biomechanics

Certificate: Molecular Laboratory Diagnostics from the Medical Technology Program

Dissertation: Association of the PAI-1 4G/5G Polymorphism with Blood Pressure in the Quebec Family Study: Interactions with Adiposity, Physical Activity, and the ACE I/D Polymorphism

Bachelor of Science, Physiology, May 2002

Michigan State University, East Lansing, MI

Honors College, Cum Laude

RESEARCH INTERESTS

My current research attempts to identify molecular biomarkers of response to behavioral and lifestyle interventions. My research employs a translational and integrated -omics (genomics, proteomics, metabolomics, transcriptomics, lipidomics, and diverse cellular assays) approach to identify and characterize the biological factors associated with the response of clinically relevant cardiometabolic phenotypes, particularly lipoproteins, adiposity, insulin sensitivity, and cardiorespiratory fitness, to lifestyle and exercise interventions. The goal is to better predict which individuals are most likely to benefit from lifestyle therapies in the management of cardiometabolic risk factors and to identify the features & functions of circulating molecules contributing to the cardioprotective benefits of exercise. Our research is collaborative and multi-disciplinary and involves clinical, population, and translational studies.

PROFESSIONAL EXPERIENCE

Associate Professor (with tenure), August 2020 –

Graduate Director of PhD program, August 2017 – June 2021

Assistant Professor, August 2015 – July 2019

University of South Carolina, Arnold School of Public Health, Department of Exercise Science, Columbia, SC

Adjunct Assistant Professor, Pennington Biomedical Research Center, Human Genomics Laboratory, Baton Rouge, LA January 2016 –

Assistant Professor-Research, Pennington Biomedical Research Center, Human Genomics Laboratory, Baton Rouge, LA July 2014 – July 2015

- Principal or co-investigator on several projects that analyze data from exercise or dietary interventions to identify the predictors, genes and biological pathways associated with the response of metabolic traits, particularly lipoproteins, to behavioral and lifestyle modifications

Instructor-Research (Faculty), Pennington Biomedical Research Center, Human Genomics Laboratory, Baton Rouge, LA August 2012 – June 2014

- Principal investigator on two funded projects that examine the variability in lipids and lipoproteins in response to regular exercise and analyzes observational and experimental data to identify the genes and biological pathways underlying this variability

Post-doctoral Fellow, Pennington Biomedical Research Center, Human Genomics Laboratory, Baton Rouge, LA January 2009 – July 2012

- Genome-wide association analyses examining the response of health-related traits (e.g., lipids, fitness, blood pressure, heart rate, insulin) to exercise training in the HERITAGE Family Study
- Secondary data analyses of large datasets including CARDIA, Swedish Obese Subjects, and HERITAGE Family Study to examine the association of candidate genes with blood pressure, fitness, obesity, and lipids

Graduate Research Assistant, Michigan State University, Department of Kinesiology, East Lansing, MI August 2007 – June 2008

- Statistical data analysis for the UNKids Study, a mixed longitudinal study of children with data for physical activity, cardiovascular risk factors, and candidate genes.

Graduate Teaching Assistant, Michigan State University, Department of Kinesiology, East Lansing, MI August 2004 – July 2007

- Taught academic courses and activity classes and assisted in curriculum development (details under Teaching Experience)

Other Professional Activities

Ad hoc member, NIH Cancer, Heart, and Sleep Epidemiology A (CHSA) study section, June 25-26, 2021

Ad hoc member, NIH Cancer, Heart, and Sleep Epidemiology A (CHSA) study section, Feb 25-26, 2021

Member, ACSM's Fit Society Page® Newsletter Editorial Board Committee. 2017 – 2018

Member, National Exercise Clinical Trials Network (NExTNet). 2015 – 2018

Member, Membership & Communications Committee of the American Heart Association Lifestyle and Cardiometabolic Health Council. 2014 – 2020

Member, Coronary Artery Risk Development in young Adults (CARDIA) Study Physical Activity & Fitness Working Group. 2011– present

Additional Training

Attendee, UNC Nutrition Research Institute's (NRI) Nutrigenetics, Nutrigenomics, and Precision Nutrition Workshop, Kannapolis, NC, June 3 – 6, 2019

Mentee, NIH Bootcamp, Arnold School of Public Health, University of South Carolina, December 2017 – August 2018

Attendee, NIH/NIGMS Metabolomics Workshop, University of Alabama at Birmingham, Birmingham, AL, June 14-18, 2015

Attendee, European Bioinformatics Institute-Wellcome Trust workshop on Proteomics Bioinformatics, Wellcome Trust Genome Campus, Hinxton, Cambridge, UK, November 11-15, 2013

Attendee, National Lipid Association's Translation of HDL Science Master Class: Core Curriculum Intensive Program, Charlotte, NC, September 13-14, 2012

Fellow, AHA/CDC Ten-Day Seminar on the Epidemiology and Prevention of Cardiovascular Disease, Tahoe City, CA. July-August 2012

Attendee, 2nd Annual NSF-Funded Five-Day Short Course on Statistical Genetics & Statistical Genomics, Honolulu, HI. July 2009

Attendee, Molecular and Clinical Nutrition I & II, semester-long courses jointly given by LSU College of Human Ecology and PBRC involving the development of current concepts of nutritional effects on health through the use of cellular, molecular, genetic, and epidemiological tools. Fall 2008 & Fall 2009

PROFESSIONAL AFFILIATIONS

- American Association for the Advancement of Science, 2011- present
- American College of Sports Medicine, 2004 – present, Fellow since 2016
- American Heart Association, 2010 – present, Fellow since 2015
 - Council on Lifestyle and Cardiometabolic Health
 - Council on Arteriosclerosis, Thrombosis, Vascular Biology
- International Atherosclerosis Society, 2014 - present
- American Society for Biochemistry and Molecular Biology, 2014 - 2015
- National Lipid Association, 2012 - 2015
- The Obesity Society 2008-2012
- The American Physiological Society 2009-2010

HONORS & AWARDS

- Fellow of the American College of Sports Medicine, 2016
- Fellow of the American Heart Association, 2015

- Scott Grundy Fellowship Award for Excellence in Metabolism Research, American Heart Association Council on Lifestyle and Cardiometabolic Health, 2014
- American Heart Association Greater Southeast Affiliation Postdoctoral Fellowship, 2010-2012
- The Obesity Society Early Career Research Grant, Finalist, 2011

GRANTS and CONTRACTS

Current Research Support:

USC Office of Undergraduate Research May 2021 – May 2022

Magellan Apprentice Award

Title: The Effects of One vs. Three Sessions of Exercise on Cholesterol Efflux

Budget: \$1,000 Role: **PI/Mentor** Mentee: Katherine Kerwin

NIH/NIDDK R01DK128057 April 2021 – March 2026

Title: Ensuring the cultural relevance of Dietary Guidelines diet patterns among African Americans: Increasing dietary quality and reducing type 2 diabetes risk

Direct Costs: \$2,651,132 Total Costs: \$3,426,100

Role: **Co-I** (Turner-McGrievy, PI) (10% effort Yrs 1-4, 15% in Yr 5)

NIH/NINR R01NR019628 March 2021 – February 2025

Title: Biochemical profiling to identify cardiometabolic responsiveness to an endurance exercise intervention

Direct Costs: \$2,074,411 Total Costs: \$2,881,126

Role: **MPI** (25% effort)

3R01HL146462-02S1 April 2020 – March 2022

NIH Diversity Supplement to Emanuel Ayala

Budget: \$123,032 Role: **PI/Mentor** Mentee: Emanuel Ayala

USC Office of Undergraduate Research May 2020 – May 2021

Magellan Apprentice Award

Title: Does global methylation relate to body composition changes in children?

Budget: \$1,000 Role: **PI/Mentor** Mentee: Andrew Hendrix

NIH/NHLBI R01HL146462 April 2019 – March 2024

Title: The Molecular and Genetic Basis of Exercise-induced Changes in HDL Function

Direct Costs: \$2,770,482 Total Costs: \$3,429,123

Role: **Principal Investigator** (25% effort yrs 1-4, 33% yr 5)

Completed Research Support:

P20 GM103499 July 2019 – June 2020

NIH/NIGMS SC INBRE Bioinformatics Pilot Project

Title: miRNA bioinformatics of peak VO₂ response to exercise training in heart failure

Role: **Co-PI** Budget: \$10,000

USC Office of Undergraduate Research May 2019 – May 2020

Magellan Scholar Research Award

Title: Time Course of Anti-Inflammatory Function of HDL Following Acute HIIT Exercise
 Budget: \$3,000 Role: **PI/Mentor** Mentee: Brice Smoker

Office of Vice President of Research November 2018
 Gift from VPR to support research associated with 2nd year of SC INBRE project
 Amount: \$15,000

P20 GM103499 July 2018 – March 2019
 NIH/NIGMS South Carolina IDeA Network of Biomedical Research Excellence (SC INBRE)
 Developmental Research Project Program (DRP)
 Title: The Effect of Exercise Training on Proteins and MicroRNAs Bound to High-Density
 Lipoproteins
 Direct Costs: \$44,278 Total Costs: \$64,867
 Role: **Principal Investigator**

USC Office of Undergraduate Research January 2018 – May 2018
 Magellan Scholar Research Award
 Title: HDL Anti-Inflammatory and Anti-Oxidative Responses to Endurance Exercise Training
 Budget: \$3,000 Role: **PI/Mentor** Mentees: Emanuel Ayala and William Clarkson

P20 GM103499 July 2017 – May 2018
 NIH/NIGMS South Carolina IDeA Network of Biomedical Research Excellence (SC INBRE)
 Developmental Research Project Program (DRP)
 Title: The Effect of Exercise Training on Proteins and MicroRNAs Bound to High-Density
 Lipoproteins
 Direct Costs: \$49,991 Total Costs: \$64,867
 Role: **Principal Investigator**

USC Office of the Vice President for Research July 2017 – September 2018
 ASPIRE-I Innovation grant: Advanced Support for Innovative Research Excellence
 Title: The Effect of Exercise Training on MicroRNAs Bound to High-Density Lipoproteins.
 Budget: \$14,890. Role: **Principal Investigator**

5 P20 GM103641 June 2016 – May 2017
 NIH/NIGMS COBRE: Center for Dietary Supplements and Inflammation pilot grant
 Title: Effects of short-term curcumin and multi-polyphenol supplementation on the anti-
 inflammatory properties of HDL.
 Direct Costs: \$74,456 Total Costs: \$93,125
 Role: **Principal Investigator**

USC Office of the Vice President for Research July 2016 – September 2017
 ASPIRE-I Innovation grant: Advanced Support for Innovative Research Excellence
 Title: Energy Expenditure Variability by Exercise Type.
 Budget: \$14,999. Role: **Co-PI**

U24 DK097154 June 2015 – May 2016

NIH/NIDDK: West Coast Metabolomics Center Pilot and Feasibility Project Grants
 Title: Changes in the Metabolome and Lipidome in Response to Exercise Training.
 The goal is to employ a non-targeted approach to identify changes in the metabolome and lipidome in response to exercise training, which will then be integrated with existing genomics, transcriptomics, and proteomics data in the same individuals.
 Budget: \$42,480. Role: **Principal Investigator**

U54 GM104940 March 2015 – July 2015
 NIH/NIGMS Louisiana Clinical and Translational Science Center (LA CaTS) Pilot Grants Program
 Title: Integrating Clinical and Genetic Data to Predict the Response of Lipoproteins to Regular Exercise. This proposal is the renewal of our previous LA CaTS pilot project. The goal is to replicate the genetic predictors of changes in lipoprotein subfraction traits with exercise, as well as to extend the project by examining the effects of exercise on HDL function and composition in adults with normal and impaired fasting glucose.
 Budget: \$50,000. Role: **Principal Investigator**

P20 GM103528 August 2012 – July 2015
 NIH/NIGMS “Mentoring Obesity and Diabetes Research in Louisiana”. An institutional center grant supported through the Center of Biomedical Research Excellence (COBRE) program. The goal is to enhance the professional development of COBRE project principal investigators and facilitate their transition to independence as they establish extramurally funded research programs. Dr. Sarzynski is the PI of one of the five supported projects. The title of the project is “Gene-Environment Interactions and High-Density Lipoproteins: An Integrated Genomic, Biological, and Behavioral Approach.”
 Budget \$150,000 (annual). Role: **Project 1 Principal Investigator**

U54 GM104940 July 2013 – June 2014
 NIH/NIGMS Louisiana Clinical and Translational Science Center (LA CaTS) Pilot Grants Program. The LA CaTS Center involves 8 major academic, research, and health care institutions of Louisiana to provide a unified research infrastructure with an overall theme of “prevention, care, and research of chronic diseases in the underserved population”. The title of the pilot project is “Integrating Clinical and Genetic Data to Predict the Response of Lipoproteins to Regular Exercise”.
 Budget: \$50,000 Role: **Principal Investigator**

Prince Faisal Award April 2012 – December 2012
 2012 Prince Faisal Bin Fahad International Prize for Elite Sport Development Research: “Predicting an elite endurance athlete status: a genome-wide exploration”
 Budget \$200,000. Role: **Co-investigator**

#10POST3670006 July 2010 – June 2012
 American Heart Association Greater Southeast Affiliation Postdoctoral Fellowship: “Genome-wide association study of the response of blood lipids to exercise training in the HERITAGE Family Study”.
 Budget \$88,772. Role: **Principal Investigator**

RESEARCH

**Note:* Underlined author name denotes graduate student, while double underline denotes undergraduate student under my mentorship.

Manuscripts: Published (Peer-reviewed journals)

73. **Sarzynski MA**, Rice T, Perusse L, Tremblay A, Stanforth PR, Tchernof A, Barber JL, Robbins JM, Ghosh S, Gerszten RE, Leon AS, Skinner JS, Rao DC, Bouchard C. The HERITAGE Family Study: A Review of the Effects of Exercise on Cardiometabolic Health. *Med Sci Sports Exerc* (in press)
72. Katz DH, Tahir UA...**Sarzynski MA** (author 30 of 36), Rich SS, Rotter JI, Wang TJ, Wilson JG, Natarajan P, Gerszten RE. Whole Genome Sequence Analysis of the Plasma Proteome in Black Adults. *Circulation* (in press)
71. Sparks JR, Kishman EE, **Sarzynski MA**, Davis JM, Grandjean PW, Durstine JL, Wang X. Glycemic Variability: Importance, Relationship with Physical Activity, and the Influence of Exercise-A Brief Review. *Sports Medicine & Health Science* (in press)
70. Barber JL, Ruiz-Ramie JJ, Robbins JM, Gerszten RE, Leon AS, Rao DC, Skinner JS, Bouchard C, **Sarzynski MA**. Regular exercise and patterns of response across multiple cardiometabolic traits: The HERITAGE Family Study. *Br J Sports Med* 2022; 56: 95-100. PMID: 33619128
69. Takeshita L, Davidsen PL, Herbert JM, Antczak P, Hesselink MKC, Schrauwen P, Rice TK, Weisnagel SJ, Bergman RN, Rao DC, Robbins JM, Gerszten RE, Ghosh S, **Sarzynski MA**, Bouchard C, Falciani F. Genomics and transcriptomics landscapes associated to changes in insulin sensitivity in response to endurance exercise. *Scientific Reports* 2021; 11:23314. PMID: 34857871
68. Ruiz-Ramie JJ, Barber JL, Lloyd-Jones DM, Gross MD, Rana JS, Sidney S, Jacobs DR, Lane-Cordova AD, **Sarzynski MA**. Cardiovascular Health Trajectories and Elevated C-Reactive Protein: The Coronary Artery Risk Development in Young Adults (CARDIA) Study. *J Am Heart Assoc* 2021; 10: e019725. PMID: 34423651
67. Fix DK, Counts BR, Smuder AJ, **Sarzynski MA**, Koh H, Carson JA. Wheel Running Improves Fasting-induced AMPK Signaling in Skeletal Muscle from Tumor Bearing Mice. *Physiological Reports*. 2021; 9:e14924. PMID: 34270178
66. Robbins JM, Peterson B, Schraner D, Tahir U, Rienmuller T, Keyes M, Katz D, Baumgartner C, Jean Beltran PM, Carr SA, Ghosh S, Barber JL, **Sarzynski MA**, Bouchard C, Gerszten RE. Plasma proteomic profiles of cardiorespiratory fitness. *Nature Metabolism* 2021; 3(6): 786-797. PMID: 34045743
65. Marini CF, Sisti D, Leon AS, Skinner JS, **Sarzynski MA**, Bouchard C, Rocchi MB, Piccoli G, Stocchi V, Federici A, Lucertini F. HRR & $\dot{V}O_2R$ fractions are not equivalent: Is it time to

rethink aerobic exercise prescription methods? *Med Sci Sports Exerc* 2021; 53: 174-182. PMID: 32694364

64. Vellers, HL, Verhein KC, Burkholder AB, Lee J, Kim Y, Lightfoot JT, Shi M, Weinberg C, Rakinen T, **Sarzynski MA**, Bouchard, C. Association between Mitochondrial DNA Sequence and Heteroplasmy with Maximal Oxygen Uptake Trainability. *Med Sci Sports Exerc* 2020; 52: 2303-2309. PMID: 33064405

63. **Sarzynski MA** and Bouchard C. World-class athletic performance and genetic endowment. *Nature Metabolism* 2020; 2: 796-798. PMID: 32943784

62. Murthy VL, Baldrige AS, Carnethon MR, Sidney S, Bouchard C, **Sarzynski MA**, Lima JAC, Lewis GD, Shah SJ, Shah RV. Polygenetic risk, fitness and obesity: the Coronary Artery Risk Development in Youth (CARDIA) Study. *JAMA Cardiology* 2020; 5(3): 40-48. PMID: 31913407 PMCID: PMC6990863

61. Williams SA, Kivimaki M, Langenberg C, Hingorani AD, Casas JP, Bouchard C, Jonasson C, **Sarzynski MA**, Shipley MJ, Alexander L, Ash J, Bauer T, Chadwick J, Datta G, DeLisle RK, Hagar Y, Hinterberg M, Ostroff R, Weiss S, Ganz P, Wareham N. Plasma protein patterns as comprehensive indicators of health. *Nature Medicine* 2019; 25: 1851-1857. PMID: 31792462 PMCID: PMC6922049

60. Ross LM*, Barber JL*, McLain AC, Weaver RG, Sui X, Blair SN, **Sarzynski MA**. The Association of Cardiorespiratory Fitness and Ideal Cardiovascular Health in the Aerobics Center Longitudinal Study. *equal authorship. *Journal of Physical Activity & Health* 2019; 16(11): 968-975. PMID: 31553947

59. Ross R, Goodpaster BH, Koch LG, **Sarzynski MA**, Kohrt WM, Johannsen NM, Skinner JS, Castro A, Irving BA, Noland RC, Sparks LM, Spielmann G, Day AG, Pitsch W, Hopkins WG, Bouchard C. Precision Exercise Medicine: Understanding How Exercise Response Varies. *British Journal of Sports Medicine* 2019; 53(18): 1141-1153. PMID: 30862704

58. Robbins JM, Herzig M, Morningstar JE, **Sarzynski MA**, Cruz DE, Wang TJ, Gao Y, Wilson JG, Bouchard C, Rankinen T, Gerszten RE. Association of dimethylguanidino valeric acid with partial resistance to the metabolic health benefits of regular exercise. *JAMA Cardiology* 2019; 4(7): 636-643. PMID: 31166569

57. Weaver RG, Brazendale K, Hunt E, **Sarzynski MA**, Beets MW, White K. Disparities in Childhood Overweight and Obesity by Income: An epidemiological examination using three nationally representative datasets. *International Journal of Obesity* 2019; 43(6): 1210-1222. PMID: 30718822

56. Barber JL, Zellers KN, Barringhaus KG, Bouchard C, Spinale FG, **Sarzynski MA**. The Effects of Exercise Training on Circulating Cardiovascular-related MicroRNAs. *Scientific Reports* 2019; 9:7527. PMID: 31101833

55. Ghosh S, Hota M, Chai X, Kiranya J, Ghosh P, He Z, Ruiz-Ramie JJ, **Sarzynski MA**, Bouchard C. Exploring the underlying biology of intrinsic cardiorespiratory fitness through integrative analysis of genomic variants and muscle gene expression profiling. *Journal of Applied Physiology* 2019; 126: 1292-1314. PMID: 30605401
54. Ruiz-Ramie JJ, Barber JL, **Sarzynski MA**. Effects of exercise on HDL functionality. *Current Opinion in Lipidology* 2019; 30: 16-23 PMID: 30480581
53. Bornstein DB, Grieve GL, Clennin M, McLain AC, Whitsel LP, Hauret KG, Jones BH, **Sarzynski MA**. Which US States Pose the Greatest Threats to Military Readiness and Public Health? Public health policy and national security implications for a cross-sectional investigation of cardiorespiratory fitness and injuries among U.S. Army Recruits from 2010-2013. *Journal of Public Health Management and Practice* 2019; 25: 36-44. PMID: 29319585
52. Baird JF, Gaughan ME, Saffer HM, **Sarzynski MA**, Herter TM, Fritz SL, Den Ouden DB, Stewart JC. The effect of energy-matched exercise intensity on brain-derived neurotrophic factor and motor learning. *Neurobiology of Learning and Memory* 2018; 156: 33-44. PMID: 30359727
51. Barber JL, Kraus WE, Church TS, Hagberg JM, Thompson PD, Bartlett DB, Beets MW, Blair SN, Earnest CP, Huffman KM, Landers-Ramos R, Leon AS, Rao DC, Seip RL, Skinner JS, Slentz CA, Wilund KR, Bouchard C, **Sarzynski MA**. Effects of Regular Endurance Exercise on GlycA: Combined Analysis of 14 Exercise Interventions. *Atherosclerosis* 2018; 277: 1-6. PMID: 30170218
50. **Sarzynski MA**, Ruiz-Ramie JJ, Barber JL, Slentz CA, Apolzan JW, McGarrah RW, Harris MN, Church TS, Borja MS, He Y, Oda MN, Martin CK, Kraus WK, Rohatgi A. The effects of increasing exercise intensity and dose on multiple measures of high-density lipoprotein function. *Arteriosclerosis Thrombosis and Vascular Biology* 2018; 38: 943-952. PMID: 29437573
49. Rao P, Merath K, Drigalenko E, Jadhav AYL, Komorowski RA, Goldblat MI, Rohatgi A, **Sarzynski MA**, Gawrieh S, Olivier M. Proteomic characterization of high-density lipoprotein particles in patients with non-alcoholic fatty liver disease. *Clinical Proteomics* 2018; 15:10. PMID: 29527140
48. Miller KE, Martz DC, Stoner C, Jowers A, Taheri ML, **Sarzynski MA**, Wilkinson LW, Plaisance EP. Efficacy of an individualized telephone-based medical nutrition program on blood lipid and lipoprotein metabolism: results from Our Healthy Heart. *Nutrition & Dietetics* 2018; 75(1): 73-78. PMID: 29411495
47. Clarke K, Ricciardi S, Pearson T, Bharudin I, Davidson PK, Bonomo M, Brina D, Scagliola A, Simpson DM, Beynon RJ, Khanim F, Ankers J, **Sarzynski MA**, Ghosh S, Pisconti A, Rozman J, Hrabe de Angelis M, Bunce C, Stewart C, Egginton S, Caddick M, Jackson M, Bouchard C, Biffo S, Falciani F. The Role of eIF6 in Skeletal Muscle Homeostasis Revealed by

Endurance Training Co-Expression Networks. *Cell Reports* 2017; 21(6): 1507-1520. PMID: 29117557

46. Sui X, **Sarzynski MA**, Lee DC, Kokkinos P. Impact of changes in cardiorespiratory fitness on hypertension, dyslipidemia and survival: an overview of the epidemiological evidence. *Progress in Cardiovascular Diseases* 2017; 60(1): 56-66. PMID: 28274819

45. **Sarzynski MA**, Ghosh S, Bouchard C. Genomic and transcriptomic predictors of response levels to endurance exercise training. *J Physiology* 2017; 595 (9): 2931-2939. PMID: 27234805
PMCID: PMC5407970

44. Graff et al. Genome-wide physical activity interactions in obesity – a meta-analysis of 200,452 adults. *PLoS Genetics* 2017; 13 (4): e1006528. PMID: 28448500

43. Justice AE et al. Genome-wide meta-analysis of 241,258 adults accounting for smoking behaviour identifies novel loci for obesity traits. *Nature Communications* 2017; 8: 14977. PMID: 28443625

42. Sui X, **Sarzynski MA**, Lee DC, Zhang J, Kokkinos P, Payne J, Blair SN. Longitudinal patterns of cardiorespiratory fitness can predict the development of hypertension among men and women. *American Journal of Medicine* 2017; 130(4): 469-476. PMID: 27986522

41. Ried et al. A principal component meta-analysis on multiple anthropometric traits identifies novel loci for body shape in >170,000 individuals of the GIANT consortium. *Nature Communications* 2016; 7: 13357. PMID: 27876822

40. Breneman C, Polinski K, **Sarzynski MA**, Lavie CJ, Kokkinos PF, Ahmed A, Sui X. The impact of cardiorespiratory fitness levels on the risk of developing atherogenic dyslipidemia. *American Journal of Medicine* 2016; 129 (10): 1060-1066. PMID: 27288861

39. **Sarzynski MA**, Loos RJF, Lucia A, Perusse L, Roth SM, Wolfarth B, Rankinen T, Bouchard C. Advances in Exercise, Fitness, and Performance Genomics in 2015. *Medicine & Science in Sports & Exercise* 2016; 48(10): 1906-1916. PMID: 27183119

38. Sung YJ, Perusse L, **Sarzynski MA**, Fornage M, Sidney S, Sternfeld B, Rice TK, Terry G, Jacobs DR Jr, Katzmarzyk P, Carr JJ, Ghosh S, Rankinen T, Rao DC, Bouchard C. Genome-wide association of abdominal and visceral fat with replication of prior findings. *International Journal of Obesity* 2016; 40(4): 662-74. PMID: 26480920
PMCID: PMC4821694

37. Lu et al. New loci for body fat percentage reveal link between adiposity and cardiometabolic disease risk. *Nature Communications* 2016; 7: 10495. PMID: 26833246

36. Kilpelainen et al. Genome-wide meta-analysis uncovers novel loci influencing circulating leptin levels *Nature Communications* 2016; 7: 10494. PMID: 26833098

35. Rankinen T, Fuku N, Wolfarth B, **Sarzynski MA**, Alexeev DG, Ahmetov II, Boulay MR, Cieszczyk P, Eynon N, Garton F, Generozov EV, Govorun VM, Houweling PJ, Kawahara T, Kostryukova ES, Kulemin NA, Larin AK, Maciejewska-Karłowska A, Miyachi M, Muniesa CA, Murakami H, Naumov VA, Ospanova EA, Padmanabhan S, Pavlenko AV, Santiago C, Sawczuk M, Scott RA, Wang G, Yvert T, Perusse L, Rauramaa R, North K, Lucia A, Pitsiladis Y, Bouchard C. No Evidence of a Common DNA Variant Profile Specific to World Class Endurance Athletes. *Plos ONE* 2016; 11(1): e0147330. PMID: 26618471
34. Shah RV, Murthy VL, Colangelo LA, Reis J, Venkatesh BA, Sharma R, Abbasi SA, Goff DC Jr, Carr JJ, Rana JS, Terry J, Bouchard C, **Sarzynski MA**, Eisman A, Neilan T, Das S, Jerosch-Herold M, Lewis CE, Carnethon M, Lewis GD, Lima JAC. Fitness in Young Adulthood is Associated with Improved Survival and Cardiovascular Risk: the Coronary Artery Risk Development in Young Adults study. *JAMA Internal Medicine* 2016; 176(1): 87-95. PMID: 26618471
33. **Sarzynski MA**, Davidsen PK, Sung YJ, Hesselink MKC, Schrauwen P, Rice TK, Rao DC, Falciani F, Bouchard C. Genomic and transcriptomic predictors of triglyceride response to regular exercise. *British Journal of Sports Medicine* 2015; 49(23): 11524-1531. PMID: 26618471
32. **Sarzynski MA**, Burton J, Rankinen T, Blair SN, Church TS, Després JP, Hagberg JM, Landers-Ramos R, Leon AS, Mikus CR, Rao DC, Seip RL, Skinner JS, Slentz CA, Thompson PD, Wilund KR, Kraus WE, Bouchard C. The effects of exercise on the lipoprotein subclass profile: a meta-analysis of 10 interventions. *Atherosclerosis* 2015; 243(2): 364-372. PMID: 26618471
31. Winkler TW et al. The influence of age and sex on genetic associations with adult body size and shape: a large-scale genome-wide association study. *PLOS Genetics* 2015; 11(10):e1005378. PMID: 26618471
30. **Sarzynski MA**, Shuna JM Jr, Carnethon MR, Sidney S, Quesenberry CP Jr, Jacobs DR Jr, Lewis CE, Schreiner PJ, Williams OD, Sternfeld B. Association of Fitness with Incident Dyslipidemias over 25 years in the CARDIA Fitness Study. *Am J Prev Med* 2015; 49(5): 745-752. PMID: 26618471
29. Loos RJJ, Rankinen T, Hagberg JM, Perusse L, Roth SM, **Sarzynski MA**, Wolfarth B, Bouchard C. Advances in Exercise, Fitness, and Performance Genomics in 2014. *Medicine & Science in Sports & Exercise* 2015; 47(6): 1105-1112. PMID: 26618471
28. Rankinen T, **Sarzynski MA**, Ghosh S, Bouchard C. Are there genetic paths common to adiposity, cardiovascular disease outcomes and cardiovascular risk factors? *Circulation Research* 2015; 116: 909-922. PMID: 26618471
27. Locke AE et al. Genetic studies of body mass index yield new insights for obesity biology. *Nature* 2015; 518: 197-206. PMID: 26618471

26. Shungin D et al. New genetic loci link adipose and insulin biology to body fat distribution. *Nature* 2015; 518: 187-196. PMID: PMC4338562
25. Pers et al. Biological interpretation of genome-wide association studies using predicted gene functions. *Nature Communications* 2015; 6:5890. PMID: 25597830
24. Bouchard C, Antunes-Correa LM, Ashley EA, Franklin N, Hwang PM, Mattson M, Negrao CE, Phillips SA, **Sarzynski MA**, Wang PY, Wheeler M. Personalized Preventive Medicine: Genetics and the Response to Regular Exercise in Preventive Interventions. *Progress in Cardiovascular Diseases* 2015; 57: 337-346. PMID: PMC4285566
23. Staiano AE, Harrington DM, Johannsen NM, Newton RL, **Sarzynski MA**, Swift DL, Katzmarzyk PK. Uncovering physiological mechanisms for health disparities in type 2 diabetes. *Ethnicity & Disease* 2015; 25(1): 31-37. PMID: PMC4378536
22. Wood AR et al. Defining the role of common variation in the genomic and biological architecture of adult human height. *Nature Genetics* 2014; 46(11): 1173-1186. PMID: PMC4250049
21. Raja GK, **Sarzynski MA**, Katzmarzyk PT, Johnson WD, Tchoukalova Y, Smith SR, Bouchard C. Commonality versus specificity among primary adiposity traits. *International Journal of Obesity* 2014; 38: 719-723. PMID: PMC4086512
20. Wolfarth B, Rankinen T, Hagberg JM, Loos RJF, Perusse L, Roth SM, **Sarzynski MA**, Bouchard C. Advances in Exercise, Fitness, and Performance Genomics in 2013. *Medicine & Science in Sports & Exercise* 2014; 46(5): 851-859. PMID: 24743105
19. **Sarzynski MA** and Bouchard C. The challenging chase for nutrigenetic predictors of metabolic responses to dietary interventions. *Diabetes Care* 2013; 36(11): 3379-3381. PMID: PMC3816865
18. Ghosh S, Vivar JC, **Sarzynski MA**, Sung YJ, Timmons JA, Bouchard C, Rankinen T. Integrative Pathway analysis of a Genome-Wide Association Study of VO₂max Response to Exercise Training. *Journal of Applied Physiology* (1985) 2013; 115(9): 1343-1359. PMID: PMC3841836
17. **Sarzynski MA**, Rankinen T, Earnest CP, Leon AS, Rao DC, Skinner JS, Bouchard C. Measured maximal heart rates compared to commonly used age-based prediction equations in the HERITAGE Family Study. *American Journal of Human Biology* 2013; 25(5): 695-701. PMID: PMC3935487
16. Perusse L, Rankinen T, Hagberg JM, Loos RJF, Roth SM, **Sarzynski MA**, Wolfarth B, Bouchard C. Advances in Exercise, Fitness, and Performance Genomics in 2012. *Medicine & Science in Sports & Exercise* 2013; 45(5): 824-831. PMID: PMC3640622

15. **Sarzynski MA**, Jacobson P, Rankinen T, Carlsson B, Sjöström L, Bouchard C, Carlsson LMS. Changes in uric acid levels following bariatric surgery are not associated with *SLC2A9* variants in the Swedish Obese Subjects study. *PLoS ONE* 2012; 7(12): e51658. PMID: PMC3522707
 14. Rice TK, **Sarzynski MA**, Sung YJ, Argyropoulos G, Stütz AM, Teran-Garcia M, Rao DC, Bouchard C, Rankinen T. Fine mapping of a QTL on chromosome 13 for indicators of submaximal exercise capacity in the HERITAGE Family Study. *European Journal of Applied Physiology* 2012; 112(8): 2969-2978. PMID: PMC4109813
 13. Bouchard C, Blair SN, Church TS, Earnest CP, Hagberg JM, Hakkinen K, Jenkins NT, Karavirta L, Kraus WE, Leon AS, Rao DC, **Sarzynski MA**, Skinner JS, Slentz CA, Rankinen T. Adverse Response to Regular Exercise: Is It a Rare or Common Occurrence? *PLoS ONE* 2012; 7(5): e37887. PMID: PMC3364277
 12. Roth SM, Rankinen T, Hagberg JM, Loos RJF, Perusse L, **Sarzynski MA**, Wolfarth B, Bouchard C. Advances in Exercise, Fitness, and Performance Genomics in 2011. *Medicine & Science in Sports & Exercise* 2012; 44(5): 809-817. PMID: PMC3994883
 11. Rankinen T, Sun YJ, **Sarzynski MA**, Rice TK, Rao DC, Bouchard C. Heritability of submaximal exercise heart rate response to regular exercise is accounted for by nine SNPs. *Journal of Applied Physiology* 2012; 112: 892-897. PMID: PMC3311659
 10. **Sarzynski MA**, Rankinen T, Sternfeld B, Fornage M, Sidney S, Bouchard C. SNP-by-fitness and SNP-by-BMI interactions from 7 candidate genes and incident hypertension after 20 years of follow-up: The CARDIA Study. *Journal of Human Hypertension* 2011; 25: 509-518. PMID: PMC3034111
 9. **Sarzynski MA***, Jacobson P*, Rankinen T, Carlsson B, Sjöström L, Carlsson LMS, Bouchard C. Association of GWAS-based candidate genes with HDL-C levels before and after bariatric surgery in the Swedish Obese Subjects intervention study. *Journal of Clinical Endocrinology and Metabolism* 2011; 96(6): E953-7. *equal authorship. PMID: 21430028
- See editorial: Rother KI, Brown RJ. Selecting weight loss surgery based on HDL genotype—Are we there yet? At the brink of “personalized surgery.” *J Clin Endocrinol Metab* 2011; 96(6):1664-7.
8. **Sarzynski MA***, Jacobson P*, Rankinen T, Carlsson B, Sjöström L, Bouchard C, Carlsson LMS. Associations between markers in 11 obesity candidate genes with maximal weight loss and weight regain in the SOS bariatric surgery cases. *International Journal of Obesity*. 2011; 35(5): 676-683. *equal authorship. PMID: 20733583
 7. Bouchard C, **Sarzynski MA**, Rice T, Kraus WE, Church TS, Sung YJ, Rao DC, Rankinen T. Genomic predictors of maximal oxygen uptake response to standardized exercise training programs. *Journal of Applied Physiology*. 2011; 110: 1160-1170. PMID: PMC3098655

See editorial: Pitsiladis Y, Wang G. Necessary advances in exercise genomics and likely pitfalls. *J Appl Physiol* 2011; 110:1150-1.

6. Carpenter RL, Lemmer JT, Francis R, Knous JL, **Sarzynski MA**, Womack CJ. Tissue plasminogen activator and plasminogen activator inhibitor-1 gene expression in muscle after maximal acute aerobic exercise. *Journal of Exercise Physiology online* 2010; 13(6): 35-44.

5. **Sarzynski MA**, Rankinen T, Sternfeld B, Grove ML, Fornage M, Jacobs DR Jr, Sidney S, Bouchard C. Association of SNPs from 17 candidate genes with baseline symptom-limited exercise test duration and change in duration over 20 years: The CARDIA Fitness Study. *Circulation: Cardiovascular Genetics*. 2010; 3: 531-538. PMID: PMC3595020

4. Eisenmann JC, **Sarzynski MA**, Tucker J, Heelan KA. Maternal pre-pregnancy overweight and offspring fatness and blood pressure: role of physical activity. *Pediatric Exercise Science*. 2010; 22(3): 369-378. PMID: 20814033

3. **Sarzynski MA**, Eisenmann JC, Heelan KA, Glenn K. ACE I/D genotype, habitual physical activity, and blood pressure in children. *Pediatric Exercise Science*. 2010; 22(2): 301-313. PMID: 20567050

2. Timmons JA, Knudsen S, Rankinen T, Koch LG, **Sarzynski M**, Jensen T, Keller P, Scheele C, Vollaard NBJ, Nielsen S, Åkerström T, MacDougald OA, Jansson E, Greenhaff PL, Tarnopolsky MA, van Loon LJC, Pedersen BK, Sundberg CJ, Wahlestedt C, Britton SL, Bouchard C. Using molecular classification to predict gains in maximal aerobic capacity following endurance exercise training in humans. *Journal of Applied Physiology*. 2010; 108: 1487-1496. PMID: PMC2886694

See editorial: Bamman MM. Does your (genetic) alphabet soup spell “runner”? *J Appl Physiol* 2010; 108(6):1452-3.

1. Eisenmann JC, **Sarzynski MA**, Heelan KA, Glenn K, Rothschild M. ACE I/D genotype, adiposity, and blood pressure in children. *Cardiovascular Diabetology*. 2009; 8(1):14. PMID: PMC2658665

Book Chapters:

Published

Barber JL and **Sarzynski MA**. Heritability of Endurance Traits from Human Research Models. In: J.T. Lightfoot, Hubal M, and SM Roth (Eds): *The Routledge Handbook of Sport and Exercise Systems Genetics*. Taylor & Francis Group, New York, NY, 2019.

Ruiz-Ramie JJ, **Sarzynski MA**, Grieve GL. Physical activity and chronic disease. In: D. Bornstein, A Eyler, JE Maddock, and JB Moore (Eds): *Physical Activity and Public Health Practice: A Guide for Effective Interventions*. Springer Publishing, New York, NY, 2019.

Sarzynski MA. Section: Exercise Genomics in Chapter: Emerging topics of importance: Professional development, pharmacology, genetics/genomics. In: Ehrman JK, Kerrigan DJ, and

Keteyian SJ (Eds): Advanced Exercise Physiology: Essential Concepts and Applications. Human Kinetics, Champaign, IL, 2017.

Church TS, Lavie CJ, **Sarzynski MA**, Swift DL. Exercise and Lipids. In: Ballantyne CM (Ed): Clinical Lipidology: A Companion to Braunwald's Heart Disease 2nd edition. Saunders Elsevier, Philadelphia, PA, 2015.

Sarzynski MA, Rankinen T, Bouchard C. Twin and family studies of training responses. In: C Bouchard and E Hoffman (Eds): Genetic and molecular aspects of sports performance. Wiley-Blackwell, Oxford, UK, 2011.

Rankinen T, **Sarzynski MA**, Bouchard C. Genes and response to training. In: C Bouchard and E Hoffman (Eds): Genetic and molecular aspects of sports performance. Wiley-Blackwell, Oxford, UK, 2011.

Presentations:

Invited Speaking Engagements

“Using omics to better understand exercise trainability”. Invited seminar speaker (honorarium), Dept. of Health & Exercise Science, Colorado State University, March 12, 2021.

“Age, sex, and race differences in exercise response variability”. Invited speaker, 2017 PBRC Symposium on Exercise Response Variability, Baton Rouge, LA.

“Genomic predictors of CVD trait responses to exercise training: progress & perils (& promise!)”. Mid-Atlantic Regional Chapter of the American College of Sports Medicine, Nov. 6, 2015, Harrisburg, PA

“Exercise and lipids and lipoproteins: moving beyond cholesterol”. University of Copenhagen Strategic Platform for Lifestyle, Obesity, and Metabolic research (LOM) Conference on Exercise and Physical Activity in Relation to Lifestyle, Obesity and Metabolic Diseases. Copenhagen, Denmark, May 18, 2015.

“Exercise Genomics and the Quest for Personalized Medicine: Lessons learned from the HERITAGE Family Study”. Center for Health, Intervention, and Prevention at the University of Connecticut Lecture Series on Genomics and Health Behavior. Storrs, CT, April 23, 2015.

“The Good and Bad Cholesterol Myth: Implications for Exercise and Health”. Northland ACSM annual meeting, Mankato, MN, October 10, 2014.

“Exercise Genomics: The Search for the Genetic Component of Exercise-Related Traits”. Northland ACSM annual meeting, Mankato, MN, October 9, 2014.

“Lack of Replication of Associations for Elite Endurance Athlete Candidate Genes in the GENATHLETE Study”. Prince Faisal Bin Fahad International Prize Award Ceremony and the International Symposium on Sport Sciences, Dubai, UAE, February 25, 2014.

Speaker, Meet-the-Expert Networking Session at the American College of Sports Medicine 2012 Annual Meeting, San Francisco, CA, June 1, 2012.

Speaker (Academic), Student Colloquium at the American College of Sports Medicine 2012 Annual Meeting, San Francisco, CA, May 30, 2012.

“Genetic associations in the CARDIA Fitness Study”. CARDIA Steering Committee and Review Board In-Person Meetings, Bethesda, MD, March 25-26, 2010.

Invited Conference Presentations

“Predicting the exercise response of lipids and lipoproteins: a multi-omic and multi-collaborative approach”. Genomics, Genetics, and Exercise Biology: A Celebratory Symposium, Santorini, Greece, May 16, 2015.

“The '-omics' of HDL response to exercise training”. Invited speaker for the Featured Symposium “Is it because of my Genes that My Jeans Don't Fit?: Integrating the '-omics' to Understand the Control of Activity and Weight” at the ACSM 2014 Annual Meeting, Orlando, FL.

Sarzynski MA, Rice TK, Sung YJ, Rao DC, Bouchard C, Rankinen T. GWAS of Triglycerides and LPL Activity Responses to Exercise Training in the HERITAGE Family Study. Invited speaker for the Featured Science Session “Evidence for the importance of Genomics in Exercise” at the ACSM 2011 Annual Meeting, Denver, CO.

Published Abstracts/Refereed Presentations at Conferences (Selected)

Oral

Robbins JM, Rao P, Mi M, Deng S, Keyes M, Katz D, Beltran PM, Tahir UA, Barber JL, Farrell L, Clish C, **Sarzynski MA**, Bouchard C, Gerszten RE. Plasma proteomic profiling of endurance exercise identifies changes in extracellular matrix biology associated with VO₂max adaptations. Oral presentation (presenter = P Rao) at AHA annual sessions 2021.

Jones A, Barber JL, Skinner JS, Bouchard C, **Sarzynski MA**. Differences in Body Composition at Baseline and in Response to Exercise Training by Metabolic Health and Weight Status. Oral presentation (by A Jones) at AHA Epi/Lifestyle meeting May 2021.

Robbins JM, Peterson B, Morningstar JE, Rankinen T, **Sarzynski MA**, Bouchard C, Gerszten RE. Glycine Levels Are Associated With Improvements In Submaximal Blood Pressure Response After Endurance Exercise Training. Oral presentation at AHA Scientific Sessions 2019.

Grieve GL, Davis JM, Durstine JL, Geraci M, Wang X, Ritchey JS, Drenowatz C, **Sarzynski MA**. Reductions in energy expenditure after aerobic and resistance exercise in resistance-trained males. Oral presentation at the 2019 ACSM Annual Meeting. *Medicine & Science in Sports & Exercise*. 51(5S), May 2019.

Barber JL, Ruiz-Ramie JJ, Clarkson WA, Olivier M, Bouchard C, Rohatgi A, **Sarzynski MA**. Association of Exercise-Induced Changes in Cholesterol Efflux Capacity with Changes in the HDL Proteome. Oral presentation at HDL Workshop 2019, Boston, MA

Robbins JM, Herzig M, Morningstar JE, Wilson J, **Sarzynski MA**, Bouchard C, Rankinen T, Gerszten RE. Dimethylguanidino Valeric Acid Predicts Partial Resistance To The Metabolic Health Benefits Of Regular Exercise. Oral presentation at AHA Scientific Sessions 2018. JM Robbins – Finalist for the Young Investigator Award

“HDL as a biomarker for vascular function: using systems biology to unravel the effects of exercise” Oral presentation as part of Symposium: Cardiometabolic Risk Across the Lifespan: Insulin Resistance, Metabolomics & Measurement. ACSM Annual Meeting June 1, 2018

“HDL as a biomarker for vascular function: using systems biology to unravel the effects of exercise” as part of Symposium VII: Vascular Dysfunction From Gene, Child to Adult: Exercise to the Rescue! Annual meeting of Southeast Chapter of ACSM Feb. 18, 2017

Bornstein DB, Grieve GL, Clennin M, McLain AC, Hauret KG, Jones BH, Whitsel L, **Sarzynski MA**. Public health implications for an investigation of state-level associations between cardiorespiratory fitness and BMI with training-related injuries among US Army Recruits. Oral presentation at the American Public Health Association Annual Meeting, Nov 6, 2017.

Ross LM, Church TS, Blair SN, Durstine JL, Hagberg JM, Martin CK, Rankinen T, Ross R, Bouchard C, **Sarzynski MA**. Prevalence of VO₂max Low Response Across Nine Aerobic Exercise Interventions. Oral presentation at the American College of Sports Medicine Annual Meeting, Denver, CO. June 2, 2017. *MSSE* 49(5S):838, May 2017

Ross LM, Barber JL, Sui X, Blair SN, **Sarzynski MA**. Association of Cardiorespiratory Fitness and Ideal Cardiovascular Health in the Aerobics Center Longitudinal Study. Oral presentation (MA Sarzynski as presenter) at AHA Cardiovascular Disease, Epidemiology and Prevention / Lifestyle and Cardiometabolic Health 2017 Scientific Sessions in Portland, OR.

Sarzynski MA. HDL as a biomarker for vascular function: using systems biology to unravel the effects of exercise. Talk part of Symposium VII: Vascular Dysfunction From Gene, Child to Adult: Exercise to the Rescue! at the Southeast Chapter of American College of Sports Medicine, Greenville, SC. February 18, 2017

Sarzynski MA*, Rankinen T, Leon AS, Rao DC, Skinner JS, Després JP, Bouchard C. Changes in HDL Particle Traits in Response to Regular Exercise: Results from the HERITAGE Family Study. *Circulation*. 2014; 129:A36. *Recipient of the Scott Grundy Fellowship Award for Excellence in Metabolism Research at the AHA EPI/NPAM 2014 Scientific Sessions.

Sarzynski MA, Sternfeld B, Carnethon M, Sidney S, Quesenberry CP Jr, Haskell WL, Jacobs DR Jr, Lewis CE, Schreiner PJ, Williams OD. Association of 20-Year Changes in Cardiorespiratory Fitness with Incident Dyslipidemia between Years 20 and 25 in the CARDIA Fitness Study. *Circulation*. 2013; 127: A038

Sarzynski MA, Rankinen T, Sternfeld B, Fornage M, Jacobs DR Jr, Sidney S, Bouchard C. SNPs from 17 candidate genes with baseline symptom-limited exercise test duration and change in duration over 20 years: The CARDIA Fitness Study. *Medicine and Science in Sports and Exercise* 42(5) (Supplement): 89, May 2010.

Sarzynski MA, Rankinen T, Sternfeld B, Fornage M, Sidney S, Bouchard C. Associations between HIF1A gene sequence variation and cardiorespiratory fitness: The CARDIA Fitness Study. *FASEB J*. April 2009; 23 (Meeting Abstract Supplement): 955.31

Sarzynski MA, Eisenmann JC, Tucker J, Laurson K, Heelan KA. Association between maternal obesity and offspring fatness and blood pressure: Role of physical activity. North American Society of Pediatric Exercise Medicine (NASPEM) Biannual Conference (oral communication given by Dr. Eisenmann), Colorado Springs, CO, Sept. 20, 2008.

Posters

Ruiz-Ramie JJ, Barber JL, Lane-Cordova AD, Wang X, Wilkins JT, Johannsen NM, **Sarzynski MA**. Discordance Between HDL Cholesterol Versus Particle Concentration and Cardiovascular Risk Factor Profile in Adults with Type 2 Diabetes. Poster presentation at American College of Sports Medicine Annual Meeting, June 2021

Jones A, Barber JL, Ayala EJ, Schwartz CS, Clarkson WA, Skinner JS, Bouchard C, **Sarzynski MA**. Cardiorespiratory fitness at baseline and in response to training across metabolic health and weight phenotypes. Poster Presentation at SEACSM virtual meeting Feb 2021 and American College of Sports Medicine Annual Meeting, June 2021.

Ayala EJ, Barber JL, Schwartz CS, Robbins JS, Gerszten RE, Wang X, Skinner JS, Bouchard C, **Sarzynski MA**. Clinical Predictors of VO₂max Response to Endurance Training: HERITAGE Family Study. Poster Presentation at SEACSM virtual meeting Feb 2021 and American College of Sports Medicine Annual Meeting, June 2021.

Sparks JR, Davis JM, Grandjean PW, **Sarzynski MA**, Wang X. Alterations In Glycemic Variability, Vascular Health, And Oxidative Stress Following A 12-Week Aerobic Exercise Intervention. Poster presentation at American College of Sports Medicine Annual Meeting, June 2021

Grammer E, McGee J, Brown T, Clunan M, Huff A, Osborne B, Matarese L, Pories W, Houmard J, Carels R, **Sarzynski MA**, Swift D. Effects of weight loss and aerobic exercise training on lipoprotein-insulin resistance (Ipir) score. Poster Presentation at SEACSM virtual meeting Feb 2021 and American College of Sports Medicine Annual Meeting, June 2021

Calderon II FA, Andrews CM, Vellers HL, Verhein KC, Burkholder AB, Lightfoot JT, **Sarzynski MA**, Bouchard C, Kleeberger SR. Characterization Of Mitochondrial Genome Indels In Individuals Classified By High And Low Vo₂max Trainability. Poster presentation at American College of Sports Medicine Annual Meeting, June 2021

Barber JL, Cai G, Robbins JS, Rao P, Gerszten RE, Bouchard C, **Sarzynski MA**. Proteomic Predictors of High-Density Lipoprotein Cholesterol Response to Regular Exercise. Poster Presentation at the American Heart Association Epi/Lifestyle Scientific Sessions, May 2021

Takehita L, Davidsen PL, Herbert JM, Antczak P, Hesselink MKC, Schrauwen P, Rice TK, Weisnagel SJ, Bergman RN, Rao DC, Robbins JM, Gerszten RE, Ghosh S, **Sarzynski MA**, Bouchard C, Falciani F. Genomics and transcriptomics landscapes associated to changes in insulin sensitivity in response to exercise. Presentation at Functional Genomics to Systems Biology EMBL (European Molecular Biology Laboratory) virtual conference, November 2020.

Sarzynski MA, Barber JL, Ruiz-Ramie JJ, Robbins JM, Gerszten RE, Leon AS, Rao DC, Skinner JS, Bouchard C. Patterns of high and low response to regular exercise across multiple clinically relevant traits. *Medicine and Science in Sports and Exercise* 2020 52(7S): 480–481.

Flynn RA, Ruiz-Ramie JJ, Johannsen NM, Church TS, **Sarzynski MA**. Effects of Exercise Training on Circulating Branched-Chain Amino Acid and Ketone Levels in Diabetics. *Medicine and Science in Sports and Exercise* 2020 52(7S):103

Ruiz-Ramie JJ, Lane-Cordova AD, Wilkins JT, Bouchard C, **Sarzynski MA**. Discordance between LDL Cholesterol versus Particle Concentration and the Cardiovascular Risk Factor Profile. Poster presentation at the Southeast Regional American College of Sports Medicine Annual Meeting 2020. *Medicine and Science in Sports and Exercise* 2020 52(7S):421-422

Barber JL, Johannsen NM, Kraus WE, Church TS, **Sarzynski MA**. Effects of Aerobic and Resistance Training on the Lipoprotein Subclass Profile in Type 2 Diabetics. Poster Presentation at the Southeast American College of Sports Medicine annual meeting, Jacksonville, FL, Feb 14, 2020.

Barber JL, Smoker BA, Bouchard C, Olivier M, **Sarzynski MA** (presenter). Comparison of HDL and whole plasma proteomes. Poster presentation at HDL International Workshop, Valencia, Spain Sept. 26, 2019.

Ruiz-Ramie JJ, Bouchard C, **Sarzynski MA** (presenter). Association of Cardiovascular Disease Risk Factors with Discordance of HDL Cholesterol Versus Particle Concentration in the HERITAGE Family Study. Poster presentation at HDL International Workshop, Valencia, Spain Sept. 26, 2019.

Sparks JR, Durstine JL, Youngstedt SD, Porter RR, **Sarzynski MA**, Wang X. Sleep Restriction during 8-Week Calorie Restriction on Physical Activity and Lipoprotein Particle Concentrations and Sizes. Poster presentation at the 2019 ACSM Annual Meeting, Orlando, FL

Sarzynski MA, Ruiz-Ramie JJ, Barber JL, Robbins JM, Clish CB, Gerszten RE, Barupal DK, Showalter MR, Fiehn O, Bouchard C. Exercise Alters the Plasma Lipidomic Profile. Poster presentation at AHA's Vascular Discovery: From Genes to Medicine 2019

Barber JL, Ruiz-Ramie JJ, Clarkson WA, Olivier M, Bouchard C, Rohatgi A, **Sarzynski MA**. Association of Exercise-Induced Changes in Cholesterol Efflux Capacity with Changes in the HDL Proteome. AHA's Vascular Discovery: From Genes to Medicine 2019, Boston, MA

Pope BS, Ruiz-Ramie JJ, Barber JL, Lane-Cordova AD, Lloyd-Jones DM, Carnethon M, Lewis CE, Schreiner PJ, Bancks MP, Sidney S, **Sarzynski MA**. Association of Cardiovascular Health Trajectories and Cardiorespiratory Fitness: The CARDIA Study. Poster presentation at the American College of Sports Medicine National Meeting 2019.

Ghosh S, **Sarzynski MA**, Bouchard C. Genetics of Intrinsic Cardiorespiratory Fitness, A Regulator Of Obesity-Related Cardiovascular Risk. The Obesity Society Annual Meeting, Nashville, TN 2018.

Barber JL, Zellers KN, Barringhaus KG, Bouchard C, Spinale FG, **Sarzynski MA**. The Effects of Exercise Training on Cardiovascular-related Circulating MicroRNAs. Poster presentation at Integrative Biology of Exercise Conference, San Diego, 2018.

Baird JF, Gaughan ME, Saffer HM, **Sarzynski MA**, Herter TM, Fritz SL, Den Ouden DB, Stewart JC. The Effect of Exercise Intensity on the Kinematics of Reach Performance and Brain-Derived Neurotrophic Factor. Poster presentation at the American College of Sports Medicine Annual Meeting, Minneapolis, MN, 2018.

Sarzynski MA, Barupal DK, Showalter MR, Barber JL, Ruiz-Ramie JJ, Bouchard C, Fiehn O. Changes in the HDL Lipidome With Regular Exercise: a Pilot Study. Poster presentation at AHA ATVB 2018 Scientific Sessions.

Ruiz-Ramie JJ, Barber JL, Lloyd-Jones DM, Lane-Cordova AD, Gross M, Rana JS, Sidney S, Jacobs DR, **Sarzynski MA**. Cardiovascular Health is Associated with Incidence of Elevated C-Reactive Protein over 18 Years of Follow-up: The Coronary Artery Risk Development in Young Adults Study. Poster presentation at AHA Epi Lifestyle 2018 Scientific Sessions

Swift DL, **Sarzynski MA**, McGee JE, Barefoot SG, Brophy P, Nevels TR, Lutes LD, Houmard JA. Effects of Exercise Training and Increasing Non-Exercise Physical Activity on Lipoprotein Subclass and Size: Results from the I-CAN Study. Poster presentation at the AHA Cardiovascular Disease, Epidemiology and Prevention / Lifestyle and Cardiometabolic Health 2018 Scientific Sessions in New Orleans, LA

Baird JF, Gaughan ME, Saffer HM, **Sarzynski MA**, Herter TM, Fritz SL, Den Ouden DB, Stewart JC. The effect of energy-matched exercise intensity on brain-derived neurotrophic factor and motor learning. Society for Neuroscience Annual Meeting, Washington D.C., November 2017.

Barber JL, Ross LM, Sui X, Blair SN, **Sarzynski MA**. Change in Cardiorespiratory Fitness and Ideal Cardiovascular Health in the Aerobics Center Longitudinal Study. Poster presentation at the American College of Sports Medicine Annual Meeting, Denver, CO. June 1, 2017.

Grieve GL, Clennin M, McLain AC, Hauret KG, Jones BH, **Sarzynski MA**, Bornstein DB. Distribution Of Cardiorespiratory Fitness Levels Of US Army Recruits From 2010-2013 By State. Poster presentation at the American College of Sports Medicine Annual Meeting, Denver, CO. May 31, 2017.

Grieve GL, McFaddin TJ, Dopp AJ, Netto AL, Ritchie JS, **Sarzynski MA**, Drenowatz C. The effects of exercise mode and intensity on exercise energy expenditure and EPOC. Poster presentation at the 2017 SEACSM Scientific Sessions in Greenville, SC.

Miller KE, Martz DC, Stoner C, Jowers A, Taheri ML, **Sarzynski MA**, Wilkinson LW, Plaisance EP. Efficacy of an individualized telephone-based medical nutrition program on blood lipid and lipoprotein metabolism: results from Our Healthy Heart. Poster presentation at the Southeast Chapter of ACSM Annual Meeting 2017.

Sarzynski MA, Slentz CA, Apolzan JW, McGarrah RW, Harris M, Church TS, Martin CK, Kraus WE, Rohatgi A. High-amount and High-intensity Exercise Training Improves HDL Cholesterol Efflux Capacity. Poster presentation at the AHA Arteriosclerosis, Thrombosis and Vascular Biology 2016 Scientific Sessions in Nashville, TN.

Sarzynski MA, Drenowatz, Demello M, Hand GA, Blair SN. Differences in Peak METs Calculated Using Standard METs or RMR in Normal and Overweight/Obese Adults. Poster presentation at the ACSM Annual Meeting 2016 in Boston, MA.

Sarzynski MA, Church TS, Hagberg JM, Landers-Ramos R, Leon AS, Rao DC, Seip RL, Skinner JS, Thompson PD, Wilund KR, Bouchard C. Effects of Regular Endurance Exercise on GlycA: Results Across Four Exercise Training Studies. Moderated poster presentation at AHA Cardiovascular Disease, Epidemiology and Prevention / Lifestyle and Cardiometabolic Health 2016 Scientific Sessions in Phoenix, AZ.

Sarzynski MA, Rankinen T, Burton J, Mikus CR, Blair SN, Church TS, Després JP, Hagberg JM, Kraus WE, Leon AS, Rao DC, Seip RL, Skinner JS, Slentz CA, Thompson PD, Wilund KR, Bouchard C. Regular exercise improves the lipoprotein subclass profile determined by nuclear magnetic resonance: meta-analysis of 10 exercise training intervention groups. Poster presentation at AHA Cardiovascular Disease, Epidemiology and Prevention / Lifestyle and Cardiometabolic Health 2015 Scientific Sessions in Baltimore, MD.

Rankinen T, **Sarzynski MA**, Sternfeld B, Sidney S, Bouchard C. Genetic variation in chromosome 8p23.1 is associated with sedentary behavior in humans. Poster presentation at AHA Cardiovascular Disease, Epidemiology and Prevention / Nutrition, Physical Activity and Metabolism 2014 Scientific Sessions in San Francisco, CA.

Rankinen T, Peltonen M, **Sarzynski MA**, Sjöström L, Bouchard C, Carlsson LMS. Insulin secretion-related SNPs are associated with prevalent and incident diabetes in obese bariatric surgery patients. *Medicine and Science in Sports and Exercise* 2012 44(5) (Supplement): 267–958.

Rankinen T, Sun YJ, **Sarzynski MA**, Rice TK, Rao DC, Bouchard C. The heritability of submaximal exercise heart rate response to regular exercise is accounted for by nine SNPs. *Circulation*. 2012;125: AP236

Sarzynski MA, Rice TK, Sung YJ, Rao DC, Bouchard C, Rankinen T. Genome-wide Association Study of HDL-C and Hepatic Lipase Activity Responses to Exercise Training in the HERITAGE Family Study. Poster Presentation at the AHA Epidemiology and Prevention / Nutrition, Physical Activity and Metabolism 2011 Scientific Sessions in Atlanta, GA.

Sarzynski MA, Rankinen T, Jacobson P, Carlsson B, Carlsson LMS, Sjöström L, Bouchard C. Association of GWAS-based candidate genes with HDL-C levels before and after bariatric surgery in the Swedish Obese Subjects intervention study. *Obesity* 2010; 18(S2): S1-S254.

Rankinen T, Rice T, **Sarzynski M**, Rao DC, Bouchard C. Chromosome 2q37 is associated with hemodynamic training responses: the HERITAGE Family Study. *Medicine and Science in Sports and Exercise* 42(5) (Supplement): 799, May 2010.

Sarzynski MA, Eisenmann JC, Heelan KA, Glenn K. The Association between ACE I/D genotype, physical activity, and blood pressure in young children. *Medicine and Science in Sports and Exercise* 40(5) (Supplement) 1:S182, May 2008.

Eisenmann JC, **Sarzynski MA**, Heelan KA, Glenn K, Rothschild M. ACE I/D genotype, adiposity, and blood pressure in children. *Medicine and Science in Sports and Exercise* 40(5) (Supplement) 1:S182, May 2008.

Sarzynski MA, Frey JC, Womack CJ, Pivarnik JM. Effects of physical and training characteristics on marathon performance. *Medicine and Science in Sports and Exercise* 39(5) (Supplement): S208, May 2007.

Knous JL, **Sarzynski MA**, Carpenter RL, Womack CJ. Fibrinolytic response in relation to exercise intensities centered around lactate threshold. *Medicine and Science in Sports and Exercise* 39(5) (Supplement): S3, May 2007.

Carpenter RL, Lemmer JT, Francis R, Knous JL, **Sarzynski MA**, Womack CJ. Muscle expression and plasma changes of tPA and PAI-1 with acute maximal aerobic exercise. *Medicine and Science in Sports and Exercise* 39(5) (Supplement): S7, May 2007.

Media coverage of research

- New York Times article about our 2021 Nature Metabolism paper by Gretchen Reynolds titled “The Best Type of Exercise? A Blood Test Holds Clue”, Posted June 9, 2021
 - <https://www.nytimes.com/2021/06/09/well/move/exercise-blood-test.html>
- CARDIA Polygenic risk paper: What Matters More for Obesity Risk, Genes or Lifestyle?
 - <https://www.webmd.com/diet/obesity/news/20200108/what-matters-more-for-obesity-risk-genes-or-lifestyle#1>
- Nature Medicine liquid biopsy paper, numerous articles posted December 2019

- <https://www.dailymail.co.uk/health/article-7747113/Scientists-come-liquid-health-check-predict-range-diseases.html>
- <https://medium.com/technicity/what-does-the-new-liquid-health-check-offer-8514857fcf2c> Dec 10, 2019
- USA Today article titled “Physically fit recruits for Army are hard to find. Especially in these states”. Posted online January 10, 2018
 - <https://www.usatoday.com/story/news/world/2018/01/10/physically-fit-recruits-army-hard-find-especially-these-states/1016030001/>
- American Heart Association News report titled “Study: Unfit U.S. Army recruits may pose threat to military readiness”. Posted online January 10, 2018
 - <https://news.heart.org/unfit-u-s-army-recruits-may-pose-threat-to-military-readiness/>
- New York Times piece on Adverse Response to Exercise paper by Gina Kolata titled “For Some, Exercise May Increase Heart Risk”. Posted May 30, 2012
 - <https://well.blogs.nytimes.com/2012/05/30/can-exercise-be-bad-for-you/>

SERVICE

Professional Service

Grant reviewer

- Grant reviewer for Texas A&M Huffines Institute for Sports Medicine and Human Performance Faculty Research Seed Grant Program, July 2021
- Ad hoc reviewer for NIH Cancer, Heart, and Sleep Epidemiology Panel A (CHSA) study section, June 28-29, 2021
- Grant reviewer for KU Leuven, Belgium (Katholieke Universiteit Leuven), March 2021
- Ad hoc reviewer for NIH Cancer, Heart, and Sleep Epidemiology Panel A (CHSA) study section, Feb 25-26, 2021

University Service

- Mentor for UofSC PROPEL Bootcamps for accelerating NIH awards, 2021 - 2022
- Magellan Scholar grant reviewer, 2020
- Judge for poster competition for CAM/COBRE EAC meeting, 2019
- Reviewer for USC ASPIRE grant program, 2018 – present
 - ASPIRE I, 2018
 - ASPPIRE II, 2019, 2020
- Reviewer for USC SPARC Graduate Research Grant program, 2016 – 2018
- Discover USC Graduate Student Poster Reviewer, 2017

Department of Exercise Science Committee Memberships:

- Chair, EXSC Search Committee, Univ. of South Carolina, 2019 – 2020
- Member, EXSC Chair Search Committee, Univ. of South Carolina, 2018 – 2019
- Judge for EXSC quiz bowl, 2018 – 2019
- PhD Graduate Director and PhD Admissions & Curriculum Committee Chair, 2017 – 2021
- Executive Committee, Univ. of South Carolina, 2016 – 2017
- Arnold Childhood Obesity Initiative, 2016 – present
- Masters Program Task Force, Univ. of South Carolina, 2016 – 2017
- Faculty Asst/Assoc. Professor Search Committee, Univ. of South Carolina, 2016 – 2017
 - Committee responsible for three tenure-track hires

Manuscript Reviewing Activities

- Peer Reviewer for Professional Journals: *American Journal of Epidemiology*; *Applied Physiology, Nutrition, and Metabolism*; *Cardiovascular Diabetology*; *Circulation*; *Circulation: Cardiovascular Genetics*; *Diabetologia*; *European Journal of Applied Physiology*; *European Journal of Sport Science*; *Experimental Physiology*; *Journal of American Heart Association*; *Journal of Applied Physiology*; *Journal of Clinical Lipidology*; *Journal of Human Hypertension*; *Journal of Lipid Research*; *Journal of Sport and Health Science*; *Life Sciences*; *Lipids*; *Lipids in Health and Disease*; *Medicine and Science in Sports and Exercise*; *New England Journal of Medicine*; *Nutrition, Metabolism & Cardiovascular Diseases*; *Obesity*; *Pediatric Exercise Science*; *Physiological Genomics*; *Sports Medicine*; *The Physician and Sports Medicine*

Professional Society Activities

- Membership & Communications Committee of the American Heart Association Lifestyle and Cardiometabolic Health Council. 2014 – 2020
- ACSM's Fit Society Page® Newsletter Editorial Board Committee, 2017 – 2018
- Served on early career panel titled “Transitioning from Fellow to Faculty: Navigating the Job Search, Interviews, Negotiations, and More” at the American Heart Association’s Epidemiology and Prevention, Lifestyle and Cardiometabolic Health (Epi/Lifestyle) 2016 Scientific Sessions. March 3, 2016
- Abstract Reviewer for Genetics, American College of Sports Medicine Annual Meeting, 2015 – present
- Abstract Reviewer, Southeast Chapter of American College of Sports Medicine Annual Meeting 2016, 2015
- Session Chair, Genetics Slide (E-19), ACSM Annual Meeting 2014
- Abstract Reviewer, American Heart Association: EPI/NPAM Scientific Sessions 2013 – present

Outreach Activities

- Host of Behavioral-Biomedical Interface Program topic session titled “Challenges to Journal Article Publishing, University of South Carolina Jan. 26, 2021.
- Interview with Today’s Dietitian February 21, 2019
 - <https://www.todaysdietitian.com/newarchives/0519p36.shtml>
- Science Fair Judge
 - SC Regional II Science Fair, 2019
 - Baton Rouge Magnet High School, Baton Rouge, LA, 2012 & 2013
 - Kenilworth Science & Technology Charter School, Baton Rouge, LA, 2012
 - Glasgow Middle School, Baton Rouge, LA, 2011
- Interview with BYU Radio “Can DNA Really Give You a Personalized Diet and Exercise Plan?”, November 6, 2018.
 - <https://www.byuradio.org/episode/1e199427-ea55-4350-b7cf-2bca7ca49591?playhead=5228&autoplay=true>
- Interview with Spartanburg Herald-Journal on benefits/effectiveness of hot yoga. June 9, 2017 <http://www.goupstate.com/news/20170611/feel-heat>

- University of South Carolina Dean’s Student Advisory Council. Panel member – Public Health CV panel discussion. March 15, 2017.
- Interview with Outside Magazine, June 26, 2016. Published as online article on June 27, 2016, “The Problem with Genetics-Based Training.”
<https://www.outsideonline.com/2094271/problem-genetics-based-training>
- University of South Carolina postdoctoral association. Invited speaker for panel on “Research statements.” March 22, 2016.
- Invited speaker, LA CaTS Community Research Advisory Board, Baton Rouge, LA, October 21, 2014
- Mentor (i.e., Big Brother), Big Brothers Big Sisters of Southeast Louisiana, 2010
- Faculty advisor, Michigan State University Women’s Club Volleyball, 2008
- Invited lecture, Grandparents University. “*Exercise and Your Heart: What happens and how it works!*” June 2007. Michigan State University, East Lansing, MI.
- Cardiorespiratory fitness and body composition testing
 - East Lansing school district: Assessed cardiorespiratory fitness, body composition, flexibility, blood pressure, and strength in elementary and junior high school students pre and post intervention using Fitnessgram®, 2005-2008
 - Division I college athletes: Men's and women's basketball, ice hockey, football, men's and women's cross-country, and women's crew, 2004-2008

TEACHING EXPERIENCE

University Courses taught

University of South Carolina (All within Department of Exercise Science)

- Physiology of Exercise, EXSC 780, 3 credits (Fall 2016, 2017, 2018, 2019, 2020, 2021)
 - Taught course online Fall 2020
- How to Bust an Exercise Myth: Evidence-Based Practice in Exercise Science, EXSC 555, 3 credits (Spring 2017, 2018)
- Genetics in Health Sciences, EXSC 755, 3 credits (Spring 2019, 2020, 2021)
 - Taught online course for HBKU Master’s program based in Qatar, Spring 2021
- Undergraduate Exercise Science Practicum, EXSC 444 (under my supervision: worked in my laboratory or assisted with clinical trial)
 - Fall 2016: Andrew Dopp (3 credits, 10 hrs/week)
 - Spring 2016: Jacob Barber (9 credits, 30 hours/week), Lois Buist and Caitlin Cramer (3 credits, 10 hours/week each)
 - Summer 2017: Rama Hassounh (6 credits, 20 hrs/week each)
 - Fall 2017: William (Alex) Clarkson, (6 credits, 20 hrs/week each)
 - Spring 2017: Haley Trapuzzano (6 credits, 20 hrs/week each)
- Independent Study, EXSC 499
 - “Energy Expenditure Variability by Exercise Type”
 - Fall 2016: Taylor McFaddin, Alexandria Netto (3 credits each)
 - Spring 2017: Jackson Ritchey (3 credits)
 - “HDL Function and Exercise”
 - Summer 2017: Kaitlyn Muscarella (3 credits)
 - Fall 2017: Rama Hassounh (3 credits)
 - “Epigenetics of Body Weight”

- Spring 2020: Andrew Hendrix (3 credits)
- Independent Study, EXSC 790
 - Fall 2019: Ryan Flynn, “Type 2 Diabetes: Clinical Trials and Risk Factors”
 - Fall 2017: George Grieve, “Quantile regression of fitness and injuries in Army recruits” (1 credit)
 - Spring 2017: Jonathan Ruiz-Ramie, “HDL Function and Exercise” (3 credits)
 - Summer 2017: Anthony Bixler (1 credit) and George Grieve (3 credits), “Energy Expenditure Variability by Exercise Type”
- Beyond the Classroom- Honors Undergraduate Research, SCHC 497
 - Fall 2018: Brice Smoker (3 credits)
 - Fall 2017: Milaan Shah (3 credits)
- Honors Senior Thesis, SCHC 499
 - Fall 2019 (4 credits) & Spring 2020 (5 credits): Brice Smoker

Michigan State University (2004-2007: All within the Department of Kinesiology)

Lead Instructor:

- Exercise Physiology, KIN 310
- Laboratory Experiences in Exercise Physiology, KIN 411
- Applied Human Anatomy Laboratory (cadaver based), KIN 217
- The Healthy Lifestyle, KIN 121
- Various Activity Classes: Racquetball, Volleyball, Weight Lifting, General Conditioning

Teaching Assistant:

- Applied Human Anatomy, KIN 216

Invited Lectures

- Cardiovascular Disease Epidemiology, EPID 744 (graduate class). “Lipoprotein Disease Epidemiology: Does Genetic Epidemiology add to the story?”. Department of Epidemiology and Biostatistics, Arnold School of Public Health, University of South Carolina, Columbia, SC.
 - April 9, 2019
 - March 31, 2021
- “Using omics to better understand exercise trainability”. Invited lecture and journal club at Dept. of Health & Exercise Science, Colorado State University, March 12, 2021.
- Physical Activity and Health: Epidemiology, Research and Practice; EXSC 700/882 (graduate class). “Lipids, Lipoproteins, and Physical Activity”. February 25, 2016. Department of Exercise Science, University of South Carolina, Columbia, SC.
- Physical Activity and Health: Epidemiology, Research and Practice; EXSC 700/882 (graduate class). “Sedentary behavior and health”. February 16, 2016. Department of Exercise Science, University of South Carolina, Columbia, SC.
- Physical Activity and Health: Epidemiology, Research and Practice; EXSC 700/882 (graduate class). “Physical Activity Measurement in Epidemiologic Research”. February 11, 2016. Department of Exercise Science, University of South Carolina, Columbia, SC.
- Applied Exercise Physiology, PE 755 (graduate class). “*Latest research in exercise genomics.*” July 16, 2015. South Dakota State University (remotely via video conference).

- Fundamentals of Clinical Trials in Exercise Science. “Dose-Response to Exercise in Women (DREW) trial results & discussion”. EXSC 555, November 3, 2015. University of South Carolina, Columbia, SC.
- Lifecourse in Exercise Physiology (Graduate class). “*Genetics of Pediatric Exercise Science.*” KIN 814, November 17, 2008. Michigan State University, East Lansing, MI.

MENTORING/ADVISING

Graduate Students

Ph.D.:

Past (graduation date, dissertation title, present position)

- Leanna Ross, October 2017, The association of changes in cardiorespiratory fitness with changes in cardiometabolic risk factors, Current NIH T-32 postdoctoral fellow at Duke Molecular Physiology Institute, Duke University School of Medicine
- George Grieve, May 2018, The effects of exercise mode and intensity on energy expenditure during and after exercise in resistance trained males, Assistant Professor, Department of Health and Human Performance, The Citadel
- Jonathan Ruiz-Ramie, May 2020, Lipoprotein discordance: Associations with diabetes, metabolic syndrome, and response to exercise, Assistant Professor, Department of Kinesiology, Augusta University
- Chelsea Larsen, May 2020 (secondary mentor for NIH T-32), Piloting a smartphone-based sedentary behavior reduction intervention for adults with overweight or obesity: Take a STAND 4 Health

Current (training start date)

- Jacob Barber, August 2018
- Prasun Dev, August 2021

Master's:

Past (graduation date, thesis title, present position)

- Jacob Barber August 2018, The Effects of Exercise Training on Cardiovascular-related Circulating MicroRNAs, PhD student at UofSC
- Ryan Flynn, August 2020, The Effects of Exercise Training Modality on Circulating Branched-Chain Amino Acid and Ketone Levels in Diabetics, PhD student at Penn State
- Emanuel Ayala, December 2021, Modifiable Clinical Predictors of VO₂max Response to Endurance Training: HERITAGE Family Study

Current (training start date, thesis title)

- Joshua Hawkins, August 2020
- William (Alex) Clarkson, January 2021
- Alec Kass, August 2021

Graduate Student Fellowships & Awards

- Graduate Scholar in Aging Research Award (\$1,000), UofSC Arnold School of Public Health Office for the Study of Aging – Prasun Dev 2021-2022

- NIH/NIGMS SC INBRE Student Initiated Research Project award (\$3,000) – Jacob Barber, 2021-2022
- Department of Exercise Science Outstanding Master’s Student Award – Emanuel Ayala, 2021
- Honorable mention, American Kinesiology Association’s National Masters Scholar Award 2021 – Emanuel Ayala
- AHA Predoctoral Fellowship award (\$63,040) – Jacob Barber, 2021-2022
- SPARC Graduate Research Grant (\$5,000) – Jacob Barber, 2021
- Southeast American College of Sports Medicine (SEACSM) Doctoral Student Poster Award Finalist, 2021 – Alexis Jones
- Southeast American College of Sports Medicine (SEACSM) Master’s Student Poster Award Finalist, 2021 – Emanuel Ayala
- UofSC Graduate Breakthrough Scholar Award – Jacob Barber, 2021
- NIH Diversity Supplement – Emanuel Ayala (\$123,032), 2020 - 2022
- EXSC MS Research Scholarship (\$1,000) – Ryan Flynn, 2020
- American College of Sports Medicine Leadership and Diversity Training Program – Jonathan Ruiz-Ramie, 2018
- Admitted to USC Behavioral-Biomedical Interface Program (NIH T-32 pre-doctoral award) – Jacob Barber, 2018
- Discover USC 1st place poster session – Jonathan Ruiz-Ramie, 2018
- Department of Exercise Science Outstanding Doctoral Student Award – George Grieve, 2018
- Department of Exercise Science Outstanding Master’s Student Award – Jacob Barber, 2018
- Department of Exercise Science Outstanding Doctoral Student Award – Leanna Ross, 2017
- Norman J. Arnold Doctoral Fellowship Award (\$10,000) – George Grieve, 2017
- Honorable mention, American Kinesiology Association’s National Doctoral Scholar Award 2017 – Leanna Ross
- American College of Sports Medicine Michael Pollack Student Award, 2017 – Jacob Barber
- Southeast American College of Sports Medicine (SEACSM) Master’s Student Poster Award Finalist, 2017 – Jacob Barber for submission titled “Change in cardiorespiratory fitness and ideal cardiovascular health in the Aerobics Center Longitudinal Study”.
- Norman J. Arnold Doctoral Fellowship Award (\$10,000) – Jonathan Ruiz-Ramie, 2016

Doctoral Dissertation Committee Membership (by graduation date):

2016 – Jessica Baird, Rehabilitation Sciences

2017 – Barbara Szendrei, *International*-Technical University of Madrid

2018 – Ryan Porter, Applied Physiology

2019 – Brandon VanderVeen, Dennis Fix, Applied Physiology

2020 – Chelsea Larsen, Health Aspects of Physical Activity; Joshua Sparks, Applied Physiology

2021 – Allison Smith, Athletic Training

NIH T-32 Behavioral-Biomedical Interface Program doctoral student laboratory rotations

2021 – Alexis Jones (EXSC)

2021 – Brittany Crawford (EPI)

Master's Project Supervision

2017 – Anthony Bixler, Health Aspects of Physical Activity (HAPA), EXSC 798 (3 credits), “Energy Expenditure Variability by Exercise Type”.

Doctoral Program of Study Committees

2020 – Thomas Cardaci

2021 – Morgan Jones, Marnie McLean

Doctoral Comprehensive Examination Committees (Division):

2016 – George Grieve, Exercise Science (HAPA)

2017 – Brandon VanderVeen (Applied Physiology)

2018 – Joshua Sparks and Dennix Fix (Applied Physiology)

2019 – Ally Smith (Athletic Training)

Doctoral Qualifying Examination Committees (Division):

2016 – George Grieve, Exercise Science (HAPA); Chelsea Larsen (HAPA)

2017 – Lindsay Decker, Exercise Science (HAPA)

2020 – Harry Cintineo (AP)

Master's Qualifying Examination Committees (Division):

2016 – Demarcus Heller, Exercise Science (HAPA)

Honors Thesis Chair

2020 – Brice Smoker, “Association of Body Mass Index Genetic Risk Markers with Body Composition During Adolescence”

Undergraduate Research Assistants: Current and Previous

Spring 2016 – Jacob Barber, Lois Buist, Caitlin Cramer

Fall 2016 – Andrew Dopp

Spring 2017 – Emanuel Ayala

Summer 2017 – Emanuel Ayala, William Clarkson, Kaitlyn Muscarella

Fall 2017 – William Clarkson, Rama Hassouneh, Milaan Shah

Spring 2018 – Emanuel Ayala, William Clarkson, Milaan Shah, Brice Smoker

Fall 2018 – Brice Smoker, Kathleen (Bailey) Radenbaugh

Spring 2019 – Brice Smoker

Fall 2019 – Andrew Hendrix, Brice Smoker

Spring 2020 – Andrew Hendrix, Brice Smoker

Fall 2020 – Andrew Hendrix, Katherine Kerwin, Julianna Tyndall

Spring 2021 – Andrew Hendrix, Katherine Kerwin, Julianna Tyndall, Riley Reasons

Fall 2021 – Katherine Kerwin, Riley Reasons

Undergraduate Awards

- Science Undergraduate Research Fellowships (SURF) Program, SC Honors College, \$2000 – Riley Reasons, May 2021 – August 2022.
- Magellan Apprentice Award, “The Effects of One vs. Three Sessions of Exercise on

Cholesterol Efflux”, USC Office of Undergraduate Research, \$1000 – Katherine Kerwin, Spring 2021 – Spring 2022.

- Magellan Apprentice Award, “Does global methylation relate to body composition changes in children”, USC Office of Undergraduate Research, \$1000 – Andrew Hendrix, Spring 2020 – Spring 2021.
- Discover Day Undergraduate Poster Session 1st place, Brice Smoker, April 26, 2019
- Magellan Scholar Research Award, “Time Course of Anti-Inflammatory Function of HDL Following Acute HIIT Exercise”, USC Office of Undergraduate Research, \$3000 – Brice Smoker, Fall 2019 – Spring 2020.
- Science Undergraduate Research Fellowships (SURF) Program, SC Honors College, \$1500 – Brice Smoker, July 2019 – August 2019.
- EXSC Undergraduate Student of the Year 2019, Emanuel Ayala
- Science Undergraduate Research Fellowships (SURF) Program, SC Honors College, \$3000 – Brice Smoker, Fall 2018 – Spring 2019.
- EXSC Undergraduate Student of the Year 2018, William Clarkson
- Magellan Scholar Research Award, “HDL Anti-Inflammatory and Anti-Oxidative Responses to Endurance Exercise Training”, USC Office of Undergraduate Research, \$3000 – Emanuel Ayala and William Clarkson, 2018.

Visiting scholars

- Barbara Szendrei (PhD student), Laboratory of Exercise Physiology, Physical Activity and Sport Sciences (INEF) Technical University of Madrid Calle Martín, Madrid, Spain, March-May 2014
- Ghazala Raja, PhD, Department of Biochemistry, PMAS Arid Agriculture University Rawalpindi, June-December 2012