

Mark A. Sarzynski, PhD, FACSM, FAHA

Department of Exercise Science
Arnold School of Public Health
University of South Carolina
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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

Mentor: Joey C. Eisenmann, Ph.D.

Bachelor of Science, Physiology, May 2002

Michigan State University, East Lansing, MI

Honors College, Cum Laude

PROFESSIONAL EXPERIENCE

Associate Professor, University of South Carolina, Department of Exercise Science, Columbia, SC, 2020 – present

Graduate Director of PhD program, University of South Carolina, Department of Exercise Science, Columbia, SC, 2017 – present

Assistant Professor, University of South Carolina, Department of Exercise Science, Columbia, SC, 2015 – 2020

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

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

Instructor-Research, Pennington Biomedical Research Center, Human Genomics Laboratory, Baton Rouge, LA, 2012 –2014

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

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

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

Other Professional Activities

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

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

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 College of Sports Medicine, 2004 – present, Fellow since 2016
- American Heart Association, 2010 – present, Fellow since 2015

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

August 2016 – May 2017

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 West Coast Metabolomics Center Pilot and Feasibility Project Grants

Title: Changes in the Metabolome and Lipidome in Response to Exercise Training.

Budget: \$42,480. Role: **Principal Investigator**

1 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.

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.
 Title: Gene-Environment Interactions and High-Density Lipoproteins: An Integrated Genomic, Biological, and Behavioral Approach
 Budget \$150,000 (annual). Role: **Project 1 Principal Investigator**

1 U54 GM104940 July 2013 – June 2014
 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
 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**

Pending Research Support:

NIH R01 December 2020 – November 2025
 Title: Biochemical profiling to identify cardiometabolic responsiveness to an endurance exercise intervention
 Role: **Co-PI** (Multiple PI: Gerszten and Sarzynski)
 Impact Score: 30 Percentile: 9

RESEARCH

Manuscripts: Published (Peer-reviewed journals)

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

65. **Sarzynski MA** and Bouchard C. World-class athletic performance and genetic endowment. *Nature Metabolism* (in press)

64. 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? *MSSE* (in press)

63. 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. *MSSE* (in press)
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* (in press)
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
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, Wilson J, **Sarzynski MA**, Bouchard C, Rankinen T, Gerszten RE. Dimethylguanidino valeric acid predicts 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* (in press). 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
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. 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

44. **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
43. 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
42. Justice AE et al. Genome-Wide Meta-Analysis Accounting for Smoking Behavior Identifies Novel Loci for Obesity Traits. *Nature Communications* 2017; 8: 14977. PMID: 28443625
41. 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
40. 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
39. 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
38. **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
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, Kostyukova 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
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: 26491034

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: 26520888

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: 26426971

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. PMCID: PMC4615297

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: 25706296

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. PMCID: PMC4416656

27. Locke AE et al. Genetic studies of body mass index yield new insights for obesity biology. *Nature* 2015; 518: 197-206. PMCID: PMC4382211

26. Shungin D et al. New genetic loci link adipose and insulin biology to body fat distribution. *Nature* 2015; 518: 187-196. PMCID: 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 Disease* 2015; 57: 337-346. PMCID: 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: 25812249
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. PMCID: 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. PMCID: 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. PMCID: 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. PMCID: 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. PMCID: 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. PMCID: 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. PMCID: 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. PMCID: 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. PMCID: 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. PMCID: 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. PMCID: 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. PMCID: 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

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. PMCID: PMC3098655

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. PMCID: 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

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: The Essentials*. 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

“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, 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.

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

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.

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*, 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

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. Poster presentation at the American College of Sports Medicine Annual Meeting 2020

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

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. Submitted to 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.

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.

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

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.

Sarzynski MA, Drenowatz C, Demello M, Barber JL, 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.

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.

SERVICE

University Service

- 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 – 2018
 - Co-Director, 2019 –
- 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

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 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 – present
- ACSM's Fit Society Page® Newsletter Editorial Board Committee, 2017 – 2018
- Served on early career panel titled “Navigating the Tenure Process” 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

- 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)
- 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)
- 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 Hassouneh (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 (Undergraduate), 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 Hassouneh (3 credits)
- Independent Study (Graduate), 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?” April 9, 2019. Department of

Epidemiology and Biostatistics, Arnold School of Public Health, University of South Carolina, Columbia, SC.

- Physical Activity and Health: Epidemiology, Research and Practice (graduate class). “*Lipids, Lipoproteins, and Physical Activity.*” EXSC 700/882, February 25, 2016.
- Physical Activity and Health: Epidemiology, Research and Practice (graduate class). “*Sedentary behavior and health.*” EXSC 700/882, February 16, 2016.
- Physical Activity and Health: Epidemiology, Research and Practice (graduate class). “*Physical Activity Measurement in Epidemiologic Research.*” EXSC 700/882, February 11, 2016.
- Fundamentals of Clinical Trials in Exercise Science (undergrad/grad class). “*Dose-Response to Exercise in Women (DREW) trial results & discussion.*” EXSC 555, November 3, 2015. University of South Carolina, Department of Exercise Science.
- Applied Exercise Physiology (graduate class). “*Latest research in exercise genomics.*” PE 755, July 16, 2015. South Dakota State University (remotely via video conference).
- Lifecourse in Exercise Physiology (Graduate class). “*Genetics of Pediatric Exercise Science.*” KIN 814, November 17, 2008. Michigan State University, East Lansing, MI.

MENTORING

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, The Citadel
- Jonathan Ruiz-Ramie, May 2020, Lipoprotein discordance: Associations with diabetes, metabolic syndrome, and response to exercise
- 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

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

Current (training start date, thesis title)

- Ryan Flynn, August 2018 The Effects of Exercise Training Modality on Circulating Branched-Chain Amino Acid and Ketone Levels in Diabetics
- Emanuel Ayala, January 2020

Graduate Student Fellowships & Awards

- 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 Doctoral Student of the Year Award – George Grieve, 2018
- Department of Exercise Science Masters Student of the Year Award – Jacob Barber, 2018
- Department of Exercise Science Doctoral Student of the Year 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
- 2017 – Barbara Szendrei, *International*-Technical University of Madrid
- 2018 – Ryan Porter
- 2019 – Brandon VanderVeen, Dennis Fix, Joshua Sparks
- 2020 – Chelsea Larsen, Allison Smith, Joshua Sparks

Master’s Project Supervision

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

Doctoral Comprehensive Examination Committees (Division):

- 2016 – George Grieve, Exercise Science (HAPA)
- 2017 – Brandon Vanderveen (Applied Physiology)
- 2018 – Joshua Sparks and Dennis 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);

Master’s Qualifying Examination Committees (Division):

- 2016 – Demarcus Heller, Exercise Science (HAPA)

Honors Thesis Chair

2020 – Brice Smoker

Undergraduate Research Assistants/Practicum: 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

Undergraduate Awards

- 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.

Mentor to Visiting Scholar

- 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