

**Mark A. Sarzynski, PhD, FACSM, FAHA**

Department of Exercise Science

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**EDUCATION & TRAINING**

**Postdoctoral Fellow**, Human Genomics, 2009 – 2012

Human Genomics Laboratory, Pennington Biomedical Research Center, Baton Rouge, LA

Mentors: Claude Bouchard, Tuomo Rankinen

**Doctor of Philosophy**, Kinesiology, November 2008

Michigan State University, East Lansing, MI

Emphasis: Exercise Physiology

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

Epidemiology, 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: Joe C. Eisenmann

**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, 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 and 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**

**Professor (with tenure)**, January 2026 –

**Associate Professor (with tenure)**, August 2020 – 2025

**Graduate Director of PhD program**, August 2017 – June 2021

**Assistant Professor**, August 2015 – July 2020

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 – present

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

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

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

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

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

#### **Other Professional Activities**

**Member**, Physical Activity Committee of the American Heart Association Council on Lifestyle and Cardiometabolic Health, 2025 –

**Permanent member**, NIH Cardiovascular and Respiratory Diseases study section, 2022 – 2026

**Steering Committee member**, GenBioPAC (Genomics and Biology of Physical Activity Consortium), 2022 – 2025

- Chair of GenBioPAC – 2024

**Ad hoc member**, NIH Cancer, Heart, and Sleep Epidemiology A (CHSA) study section,

- 2022: June; 2021: Feb, June, Oct

**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 – 2020

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

#### **PROFESSIONAL AFFILIATIONS**

- 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

## **HONORS & AWARDS**

- Faculty Research Award, Arnold School of Public Health, University of South Carolina, 2022
- 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

## **GRANTS and CONTRACTS**

### **Current Research Support:**

Research Fellowship for Aging from ASPH's Office for the Study of Aging      2025  
 Title: Characterization of Multiple Proteomic and Metabolomic Age Clocks Before and After Exercise Training  
 Total: \$5,000  
 Role: **PI**

NIH/NICHD R01HD112351      Sept 2023 – May 2028  
 Title: Identifying patterns of BMI development and associated behavioral, social, environmental, and biologic factors for children from 3-10 years  
 Direct Costs: \$1,970,530      Total Costs: \$2,659,061  
 Role: **Co-I** (Weaver, PI) (4% effort)

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) (7.5% effort)

### **Completed Research Support:**

NIH/NINR R01NR019628      March 2021 – December 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) (Gerszten, Co-PI)

NIH/NHLBI R01HL146462      April 2019 – March 2025 (NCE)  
 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)

3R01HL146462-02S1      April 2020 – March 2022  
 NIH Diversity Supplement to Emanuel Ayala  
 Budget: \$123,032      Role: **PI/Mentor**      Mentee: Emanuel Ayala

P20 GM103499                      July 2019 – June 2020  
NIH/NIGMS SC INBRE Bioinformatics Pilot Project  
Title: miRNA bioinformatics of peak VO<sub>2</sub> response to exercise training in heart failure  
Role: **Co-PI**                      Budget: \$10,000

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**

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.  
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 Renewal  
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 Center of Biomedical Research Excellence (COBRE) program “Mentoring  
Obesity and Diabetes Research in Louisiana”.  
Title: 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.  
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**

### **Primary Sponsor for External Funding**

#### *Active:*

NIH Loan Repayment Program Award (Clinical Research-Extramural)  
1L30HL175811-01 2024 – 2026  
Budget: \$18,334  
Title: The Associations of Novel Measures of HDL Function in Response to Exercise Training  
and Cardiometabolic Traits, HDL Composition, and the Plasma Proteome and Metabolome  
Role: **Sponsor** (Eric Leszczynski, recipient)

#### *Completed:*

AHA Predoctoral Fellowship award April 2021– May 2022  
Title: Molecular Foundations of Lipoprotein Response to Exercise  
Budget: \$63,040 Role: **Sponsor** Mentee: Jacob Barber, PI

**RESEARCH**

*\*Note: Underlined authors are graduate students or postdoctoral fellows, while double underline denotes undergraduate student under my mentorship.*

**Manuscripts: Published (Peer-reviewed journals)**

103. Robbins JM, Benson M, Verkerke ARP, Tiwari G, Deng S, Rao P, Tahir UA, Avila-Pacheco J, Shi X, Guan Y, Tendoh FG, Barber JL, Miller PE, Perry AS, Hall ME, Frazier-Wood AC, Taylor KD, Post WS, Rich SS, Naylor M, Wilson JG, Lewis GD, Shah RV, Rotter JJ, Summers SA, Raffield LM, Kajimura S, Bouchard C, Clish CB, **Sarzynski MA**, Gerszten RE. N-palmitoyl glutamine is a candidate mediator of cardiorespiratory fitness. *Circulation* (in press) (2024 IF: 38.6)
102. Tremblay A, Bouchard C, **Sarzynski MA**, Skinner JS, Marin-Couture E, Schrauwen P, Joannis DRR, Thibault G, Mathieu ME, Pérusse L. Variation in cycling exercise mechanical efficiency in the HERITAGE Family Study. *Physiological Reports* 2025; 13: e70626. PMID: 41162184 DOI: 10.14814/phy2.70626 (2024 IF: 1.9)
101. Bailey S, Turner-McGrievy GM, Keseko EA, Duncan T, Ward-Johnson D, Davis B, Wilcox S, Friedman DB, **Sarzynski MA**, Liese AD. The Diet Guidelines: 3 Diets (DG3D) Study protocol of a behavioral teaching kitchen intervention for type-2 diabetes prevention among African American adults. *Contemp Clin Trials* 2025; 159: 108109 PMID: 41077220 DOI: 10.1016/j.cct.2025.108109 (2024 IF: 1.9)
100. Dev PK\*, Leszczynski EC\*, Schwartz CS, Barber JL, Ayala EJ, Wang X, Fairman CM, Ghosh S, Gerszten RE, Olivier M, Rohatgi A, Clish CB, Bouchard C, **Sarzynski MA**. Association of the HDL lipidome with HDL traits before and after exercise training: HERITAGE Family Study. *Metabolomics* 2025; 21: 120. PMID: 40830729 PMCID: PMC12364975 DOI: 10.1007/s11306-025-02330-3 (2024 IF: 3.3)
99. Silbernagel G, Chen YQ, Li H, Lemen D, Wen Y, Zhen E, Rief M, Kleber M, Delgado G, **Sarzynski MA**, Qian YW, Schmidt B, Erbel R, Trampisch U, Moissl AP, Rudolf H, Schunkert H, Stang A, Marz W, Trampisch H, Scharnagl H, Konrad RJ. Associations of Circulating ANGPTL3, C-Terminal Domain-Containing ANGPTL4, and ANGPTL3/8 and ANGPTL4/8 Complexes with LPL Activity, Diabetes, Inflammation, and Cardiovascular Mortality. *Circulation* 2025; 151: 218-234. PMID: 39392008 DOI: 10.1161/CIRCULATIONAHA.124.069272 (2024 IF: 35.5)
98. Meyler SJR, Swinton PA, Bottoms L, Bouchard C, Dalleck LC, Hunter B, **Sarzynski MA**, Wellsted D, Williams CJ, Muniz-Pumares D. Changes in cardiorespiratory fitness following exercise training prescribed relative to traditional intensity anchors and to physiological thresholds: a systematic review with meta-analysis of individual participant data. *Sports Medicine* 2025; 55: 301-323. PMID: 39538060 DOI: 10.1007/s40279-024-02125-x (2024 IF: 9.3)
97. Turner-McGrievy GM, Wirth MD, Okpara N, Jones M, Kim Y, Wilcox S, Friedman DB, **Sarzynski MA**, Liese AD. Similar changes in diet quality indices, but not nutrients, among

African American participants randomized to follow one of the three dietary patterns of the US Dietary Guidelines: A secondary analysis. *Nutrition Research* 2024; 131: 27-38. PMID: 39366028 PMCID: PMC11563860 DOI: 10.1016/j.nutres.2024.09.005 (2024 IF: 3.4)

96. Grammer EE, McGee JE, Bartlett AN, Brown TT, Clunan MC, Huff AC, Osborne BG, Matarese LE, Pories WJ, Houmard JA, Carels RA, **Sarzynski MA**, Swift DL. Effects of weight loss and weight maintenance on lipoprotein insulin resistance scores in adults with overweight and obesity. *Metab Syndr Relat Disord* 2024; 22: 598-607. PMID: 39163283 PMCID: PMC12021762 DOI: 10.1089/met.2023.0180 (2024 IF: 1.3)

95. Rao P, Keyes MJ, Mi MY, Barber JL, Tahir UA, Deng S, Clish CB, Shen D, Farrell LA, Wilson JG, Gao Y, Yimer WK, Ekunwe L, Hall ME, Munter PM, Rotter JI, Guo X, Taylor KD, Rich SS, Tracy RP, Xanthakis V, Vasan RS, Bouchard C, **Sarzynski MA\***, Gerszten RE\*, Robbins JM\*. Plasma Proteomics of Exercise Blood Pressure and Incident Hypertension. *JAMA Cardiology* 2024; 9(8): 713-722. \*equal senior authorship. PMID: 38865108 PMCID: PMC11170454 DOI: 10.1001/jamacardio.2024.2323 (2023 IF: 24.0)

94. Perry AS\*, Farber-Eger E\*, Gonzales T\*, Tanaka T\*, Robbins JM\*, Murthy VL, Stolze LK, Zhao S, Colangelo L, Deng S, Hou L, Lloyd-Jones DM, Walker K, Ferrucci L, Watts EL, Barber JL, Rao P, Mi M, Gabriel KP, Hornikel B, Sidney S, Houston N, Lewis GD, Liu GY, Thyagarajan B, Khan S, Washko G, Kalhan R, Wareham N, Bouchard C, **Sarzynski MA**, Gerszten RE<sup>#</sup>, Brage S<sup>#</sup>, Wells Q<sup>#</sup>, Naylor M<sup>#</sup>, Shah RV<sup>#</sup>. Proteomic analysis of cardiorespiratory fitness for prediction of mortality and multi-system disease risks. *Nature Medicine* 2024; 30(6): 1711-1721. \*equal first <sup>#</sup>equal senior authorship PMID: 38834850 PMCID: PMC11186767 DOI: 10.1038/s41591-024-03039-x. (2023 IF: 58.7)

93. Miranda Maravi JS\*, Leszczynski EC\*, Schwartz CS, Dev PK, Barber JL, Reasons RJ, Pearce RW, McPhaul MJ, Konrad RJ, Robbins JM, Gerszten RE, Collier TS, Bouchard C, Rohatgi A, **Sarzynski MA**. Associations of an HDL Apolipoproteomic Index with Cardiometabolic Risk Factors Before and After Exercise Training in the HERITAGE Family Study. *Atherosclerosis* 2024; 17:395:117587. PMID: 38823353 DOI: 10.1016/j.atherosclerosis.2024.117587 (2023 IF: 5.3) \*equal first authors

92. Samani SL, Barlow SC, Freeburg LA, Jones TL, Poole M, **Sarzynski MA**, Zile MR, Shazly T, Spinale FG. Left Ventricle Function and Post-Transcriptional Events with Exercise Training in Pigs. *Plos ONE* 2024; 19: e0292243. PMID: 38306359 PMCID: PMC10836705 DOI: 10.1371/journal.pone.0292243. (2023 IF: 3.7)

91. Hoffman WG, Chen YQ, Schwartz CS, Barber JL, Dev PK, Reasons RJ, Miranda Maravi JS, Armstrong B, Gerszten RE, Silbernagel G, Konrad RJ, Bouchard C, **Sarzynski MA**. Effects of Exercise Training on ANGPTL3/8 and ANGPTL4/8 and their Associations with Lipid and Cardiometabolic Traits. *J of Lipid Research* 2024; 65(2): 100495. PMID: 38160757. DOI: 10.1016/j.jlr.2023.100495. (2023 IF: 6.5)

90. Hota M\*, Barber JL, Ruiz-Ramie JJ, Schwartz CS, Lam H, Robbins JM, Gerszten RE, **Sarzynski MA<sup>#</sup>**, Bouchard C<sup>#</sup>, Ghosh S<sup>#</sup>. A bioinformatics exploration of the biology of

intrinsic submaximal working capacity and its trainability. *Physiological Genomics* 2023; 55(11): 517-543. **(2023 IF: 4.3)** \*Given *Physiological Genomics* Excellence in Research Award (\$250). #equal senior authorship. PMID: 37661925 PMCID: PMC11178266 DOI: 10.1152/physiolgenomics.00163.2022

89. Benson MD, Eisman AS, [28 more authors], TOPMed Consortium, Bouchard C, **Sarzynski MA**, Rich SS, Rotter JJ, Wang TJ, Wilson JG, Clish CB, Sarkar IN, Natarajan P, Gerszten RE. Protein-Metabolite Association Studies Identify Novel Proteomic Determinants of Metabolite Levels in Human Plasma. *Cell Metabolism* 2023; 35(9): 1646-1660. PMID: 37582364; PMCID: PMC1111809. DOI: 10.1016/j.cmet.2023.07.012. **(2023 IF: 29.0)**

88. Marini CF, Sisti D, Leon AS, Skinner JS, **Sarzynski MA**, Bouchard C, Rocchi MB, Piccoli G, Stocchi V, Federici A, Lucertini F. Accounting for individual characteristics makes the %HRR-% $\dot{V}O_2R$  relationship neither 1:1 nor more accurate. *European J Sports Sci* 2023; 8: 1600-1611. PMID: 35960537 DOI: 10.1080/17461391.2022.2113441 **(2022 IF: 3.2)**

87. Mi M, Barber JL, Rao P, Farrell LA, **Sarzynski MA**, Bouchard C, Robbins JM, Gerszten RE. Plasma Proteomic Kinetics in Response to Acute Exercise. *Molecular & Cellular Proteomics* 2023; 22: 100601. DOI: 10.1016/j.mcpro.2023.100601 **(2023 IF: 7.0)**

86. Silbernagel G, Chen YQ, Rief M, Kleber ME, Hoffman M, Stojakovic T, **Sarzynski MA**, Marz W, Qian Y, Schanagl H, Konrad RJ. Apolipoprotein C-II Is Associated with Cardiovascular Mortality in a Manner Consistent with its Modulation of Lipoprotein Lipase Activity. *European Heart Journal* 2023; 44: 2335-2345. PMID: 37155355 DOI: 10.1093/eurheartj/ehad261 **(2023 IF: 39.3)**

85. Robbins JM, Rao P, Deng S, Keyes M, Tahir U, Katz D, Beltran P, Marchildon F, Barber JL, Peterson B, Gao Y, Correa A, Wilson J, Smith JG, Cohen P, Bouchard C, **Sarzynski MA**, Gerszten RE. Plasma proteomic changes in response to exercise training are associated with cardiorespiratory fitness adaptations. *JCI Insight* 2023; 8(7):e165867. PMID: 37036009 PMCID: PMC10132160 <https://doi.org/10.1172/jci.insight.165867> **(2023 IF: 8.0)**

84. Turner-McGrievy GM, Wilson MJ, Carswell J, Okpara N, Aydin H, Bailey S, Davey M, Hutto B, Wilcox S, Friedman DB, **Sarzynski MA**, Liese AD. A 12-week randomized pilot intervention comparing the Healthy US, Mediterranean, and Vegetarian dietary patterns of the US Dietary Guidelines for changes in body weight, hemoglobin A1c, blood pressure, and dietary quality among African American adults. *Journal of Nutrition* 2023; 53(2):579-587. PMID: 36894249 doi: 10.1016/j.tjn.2022.11.020. **(2023 IF: 4.2)**

83. Cronje HT, Mi MY, Austin TR, Biggs ML, Siscovick D, Lemaitre R, Psaty BM, Tracy R, Djouss L, Kizer J, Ix JH, Sotoodehnia N, Rao P, Robbins JM, Barber JL, **Sarzynski MA**, Clish C, Bouchard C, Mukamak KJ, Gerszten RE, Jensen MK. Plasma proteomic determinants of glucose-insulin homeostasis and incident type 2 diabetes: Insights from the Cardiovascular Health Study and HERITAGE Family Study. *Diabetes* 2023; Feb 7;db220628. PMID: 36749929 PMCID: PMC10130486 doi: 10.2337/db22-0628 **(2023 IF: 7.7)**



82. Dai J, Boghossian NS, **Sarzynski MA**, Luo F, Sun X, Li J, Fiehn O, Liu J, Chei L. Metabolome-Wide Associations of Gestational Weight Gain in Pregnant Women with Overweight and Obesity. *Metabolites* 2022; 12: 960. PMID: 36295862 doi.org/10.3390/metabo12100960 (**2022 IF: 4.1**)
  
81. Sui X, **Sarzynski MA**, Gribben N, Zhang J, Lavie CJ. Cardiorespiratory Fitness and the Risk of All-cause, Cardio-vascular and Cancer Mortality in Men with Hypercholesterolemia. *J of Clinical Medicine* 2022; 11: 5211. PMID: 36079141 PMCID: PMC9457072 DOI: 10.3390/jcm11175211 (**2022 IF: 3.9**)
  
80. Wang Z, Emerich A, (100-200+ additional authors including **Sarzynski MA**), Loos RJF, den Hoed M. Genome-wide association analyses of physical activity and sedentary behavior provide insights into underlying mechanisms and roles in disease prevention. *Nature Genetics* 2022; 54: 1332-1344. PMID: 36071172. PMCID: PMC9470530 DOI: 10.1038/s41588-022-01165-1 (**2022 IF: 30.8**)
  
79. Sparks JR, **Sarzynski MA**, Davis JM, Grandjean PW, Wang X. Cross-Sectional and Individual Relationships between Physical Activity and Glycemic Variability. *Translational Journal of the American College of Sports Medicine* 2022; 7: 1-12. PMID: 36091485 doi: 10.1249/tjx.0000000000000207
  
78. Tahir UA, Katz DH, Avila-Pachecho J, Bick AG, Pampana A, Robbins JM, Yu ZY, Chen ZZ, Benson MD, Cruz DE, Ngo D, Deng S, Shi X, Zheng S, Eisman AS, Farrell L, Hall ME, Correa A, Tracy RP, Durda P, Taylor KD, Liu Y, Johnson WC, Guo X, Yao J, Chen YI, Manichaiku AWI, Ruberg FL, Blaner WS, Jain D, NHLBI Trans-Omics for Precision Medicine 1 Consortium, Bouchard C, **Sarzynski MA**, Rich SS, Rotter JI, Wang TJ, Wilson JG, Clish CB, Natarajan P, Gerszten RE. Whole Genome Association Study of the Plasma Metabolome Identifies Novel Metabolites Linked to Cardiometabolic Disease in Black Individuals. *Nature Communications* 2022; 14: 4923. PMID: 35995766 PMCID: PMC9395431 DOI: 10.1038/s41467-022-32275-3 (**2022 IF: 16.6**)
  
77. Katz DH, Robbins JM, Deng S, Tahir UA, Bick AG, Pampana A, Yu Z, Ngo D, Benson MD, Chen ZZ, Cruz DE, Gao Y, Bouchard C, **Sarzynski MA**, Correa A, Natarajan P, Wilson JG, Gerszten RE. Proteomic Profiling Platforms Head-to-Head: Leveraging Genetics and Clinical Traits in Human Populations to Compare Aptamer- and Antibody-based Methods. *Science Advances* 2022; 8: eabm5164. PMID: 35984888 PMCID: PMC9390994 DOI: 10.1126/sciadv.abm5164 (**2022 IF: 13.6**)
  
76. **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* 2022; 54: S1-S43. PMID: 35611651, PMCID: PMC9012529 (**2022 IF: 4.1**)

75. Smith AB, Gay JL, Monsma E, Arent SM, **Sarzynski MA**, Emerson DM, Torres-McGehee TM. Investigation of Eating Disorder Risk and Body Image Dissatisfaction among Female Competitive Cheerleaders. *IJERPH* 2022; 19(4): 2196. PMID: 35206381 (**2022 IF: 4.614**)
74. 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* 2022; 145: 357-370. PMID: 34814699 (**2022 IF: 37.8**)
73. Smith AB, Gay JL, Emerson DM, **Sarzynski MA**, Arent SM, Torres-McGehee TM. Examination of the Prevalence of Female Athlete Triad Components among Competitive Cheerleaders. *IJERPH* 2022; 19(3): 1375. PMID: 35162393 (**2022 IF: 4.614**)
72. 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 (**2022 IF: 18.6**)
71. Sparks JR, **Sarzynski MA**, Davis JM, Grandjean PW, Wang X. Alterations in Glycemic Variability, Vascular Health, and Oxidative Stress following a 12-Week Aerobic Exercise Intervention-A Pilot Study. *Int J Exerc Sci* 2021; 14: 1334-1353. PMID: 35096240 PMCID: PMC8758171 (**2022 IF: 0.9**)
70. 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* 2021; 3: 183-189. PMID: 35783368 PMCID: PMC9219280 <https://doi.org/10.1016/j.smhs.2021.09.004> (**2021 IF: 3.115**)
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 (**2021 IF: 4.996**)
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 (**2021 IF: 6.107**)
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## 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**

“Sex differences in the cardiometabolic benefits of exercise”. Invited speaker, Pennington Biomedical Research Center Symposium on Exercise and Cardiovascular Health, Baton Rouge, LA, March 6, 2025

“Exercise and Glucose-Insulin Homeostasis: Clinical, Genomic, and Molecular Insights”. The Diabetes Institute, Ohio University Heritage College of Osteopathic Medicine, Athens, OH, January 19, 2024.

“Multi-omics Investigations of Cardiometabolic Responses to Exercise Training”, Cardiovascular Translational Research Center, University of South Carolina School of Medicine, March 22, 2022.

“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**

Responders/Non-responders to Exercise Training DO Exist. Talk part of Symposium Debate: Universal benefit or individual limits to exercise training? A responder vs. non-responder clash at the Canadian Society for Exercise Physiology Annual Conference, London, Ontario, Canada. October 16, 2025

“Effects of exercise on lipoprotein composition (Integrated Omics) and function”. Invited speaker for Session: Novel Aspects of Lipoprotein Composition and Function at American Heart Association Scientific Sessions, Nov 5, 2022, Chicago, IL

“Exercise Omics: Past, Present and Future Through the Lense of the HERITAGE Family Study”. Mid-Atlantic Regional Chapter of the American College of Sports Medicine, Nov. 4, 2022, Harrisburg, PA

“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)**

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

**Oral presentation (given by me)**

**Sarzynski MA**, Barber JL, Robbins JM, Rao P, Leszczynski EC. Proteomic Profiling of Exercise Response. Chair and Speaker of Symposium at American College of Sports Medicine Annual Meeting Boston, MA May 2024.

**Sarzynski MA**, Barber JL, Robbins JM, Ghosh S. HERITAGE Family Study at 25: Summary of Training Effects on Fitness, Reproducibility, Genomics, and Molecular Transducers. Chair and Speaker of Symposium at American College of Sports Medicine Annual Meeting San Diego, CA June 2022.

**Sarzynski MA**. “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

**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.

**Oral presentations (given by my trainee with me as senior author)**

Jacobs KJC, Leszczynski EC, Pitre MJ, Schwartz CS, Dev PK, Valakos MG, Rao P, Mi M, Ghosh S, Robbins JM, Gerszten RE, Bouchard C, **Sarzynski MA**. Exercise training attenuates age-related increases in 10- and 30-year CVD risk: HERITAGE Family Study. Oral presentation at Southeast American College of Sports Medicine Annual Meeting, Greenville, SC, February 2025

Ruiz-Ramie JJ, Greene DR, Craig-Jones A, Wang X, Lane A, Wilkins JT, Church TS, Johannsen N, **Sarzynski MA**. Lipoprotein Cholesterol and Particle Discordance: Associations with Exercise Induced Cardiovascular Disease Risk Factor Changes. Oral presentation at Southeast American College of Sports Medicine Annual Meeting, Greenville, SC, February 2025

Leszczynski EC, Dev PK, Barber JL, Schwartz CS, Rao P, Mi M, Ghosh S, Rohatgi A, Bouchard C, Robbins JM, Gerszten RE, Clish CB, **Sarzynski MA**. Correlations of Lipid Species in HDL-sized and Whole Plasma Measured by Mass Spectrometry. Oral presentation at The HDL Workshop, Chicago, IL, May 2024

Dev PK, Leszczynski EC, Schwartz C, Barber JL, Ghosh S, Gerszten RE, Olivier M, Rohatgi A, Clish CB, Bouchard C, Sarzynski MA. Association of HDL lipid classes and HDL traits before and after exercise training: HERITAGE Family Study. Oral presentation at Don Fredrickson Lipid Research Conference, Nashville, TN, Sept. 2023.

Clarkson WA, Barber JL, Reasons RJ, Hamid Z, Dev PK, Schwartz CS, Wallis K, Robbins JM, Bouchard C, Gerszten RE, Olivier M, Rohatgi A, **Sarzynski MA**. Association between cholesterol efflux capacity and HDL-sized and whole plasma proteins in the HERITAGE Family Study. Oral presentation at Don Fredrickson Lipid Research Conference, Durham, NC, Sept. 2022.

Clarkson WA, Barber JL, Robbins JM, Rao P, Mi M, Dev PK, Ghosh S, Clish C, Katz DH, Gerszten RE, Bouchard C, **Sarzynski MA**. Associations of Changes in Plasma Proteins and Body Composition Traits in Response to Endurance Training. Oral Presentation at American College of Sports Medicine Annual Meeting San Diego, CA June 2022.

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 at AHA Epi/Lifestyle meeting May 2021.

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

Ross LM, Church TS, Blair SN, Durstine JL, Hagberg JM, Martin CK, Rankinen T, Ross R, Bouchard C, **Sarzynski MA**. Prevalence of VO<sub>2</sub>max 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.

**Oral (talk given by colleague with me as co-author)**

Benson MD et al. The Integration of Genomic and Proteomic Profiling Data in TOPMed to Identify Protein-Protein Pathway Partners in Human Plasma. Oral presentation as part of TOPMed symposium at American Society for Human Genetics 2024 Annual Meeting.

Rao P, Peterson C, Barber JL, Mi MY, Chandra MS, Leszczynski EC, Dev PK, Farrell LA, Bouchard C, Sarzynski MA, Robbins JM, Gerszten RE. Sex Differences In Physiological Responses During Acute Exercise: Heritage Family Study. Oral presentation at ACSM Annual Meeting, Boston, MA, May 2024.

Turner-McGrievy GM, Liese AD, Wilcox S, Friedman D, **Sarzynski MA**, Bailey S, Carswell J, Wilson M. The DG3D study: 12-week randomized weight loss and diet quality intervention among African Americans. Obesity Week annual meeting, oral presentation, November 2022. San Diego, CA.

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 VO<sub>2</sub>max adaptations. Oral presentation (presenter = P Rao) at AHA annual sessions 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.

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

**Posters (selected from 2015 onwards)**

Herzig M, Dev PK, Jacobs KJC, Leszczynski EC, Barber JL, Rao P, Mi M, Valakos M, McBride M, Clish CB, Ghosh S, Saha E, Bouchard C, Gerszten RE, Robbins JM, **Sarzynski MA**. Endurance Exercise Modifies Organ-Specific Proteomic Aging Scores: Insights from the

Heritage Family Study. Poster presentation at the 2025 American Heart Association Scientific Sessions, New Orleans, LA November 2025.

Rao P, Leszczynski EC, Mi MY, Barber JL, Jacobs K, Dev PK, Peterson C, Clish C, Farrell LA, Ho J, Lau E, Ghosh S, Ross R, Bouchard C, Sarzynski MA, Robbins JM, Gerszten RE. Sex Differences In Response to Endurance Training. Poster presentation at the 2025 American Heart Association Scientific Sessions, New Orleans, LA November 2025.

Ruiz-Ramie JJ, Greene DR, Craig-Jones A, Wang X, Lane A, Wilkins JT, Church TS, Johannsen N, **Sarzynski MA**. Lipoprotein Cholesterol and Particle Discordance: Associations with Exercise Induced Cardiovascular Disease Risk Factor Changes. Poster presentation at American College of Sports Medicine Annual Meeting, Atlanta, GA, May 2025

Leszczynski EC, Jacobs KJC, Dev PK, Schwartz CS, Barber JL, Pitre MJ, Rohatgi A, Bouchard C, Lauc G, **Sarzynski MA** (presenter). Association of the HDL-enriched Glycome with Cardiometabolic Risk Factors. Poster Presentation at HDL Workshop, April 2025, Baltimore, MD.

Leszczynski EC, Jacobs KJC, Schwartz CS, Dev PK, Ghosh S, Rohatgi A, Olivier M, Sato M, Zubiran R, Clish CB, Lauc G, Bouchard C, Neufeld E, Remaley A, **Sarzynski MA**. Multi-Omics Characterization of HDL-Specific Phospholipid Efflux. Poster Presentation at HDL Workshop, April 2025, Baltimore, MD.

Olivier, Michael, Zimmerman, Kip, Puppala, Sobha, Chan, Jeannie, Li, Ge, Reyes, Arisbeth, Wallis, Kit, Jadhav, Avinash, Huber, Hillary, Nathanielsz, Peter, **Sarzynski, Mark**, Cox, Laura. HSPA8 as a Putative Mediator of Aging-Related Molecular Changes across Metabolic Tissues in Normal Primate Aging. American Aging Association 2025 Annual Meeting.

Leszczynski EC, Barber JL, Rao P, Jacobs KJC, Mi M, Dev PK, Schwartz CS, Ghosh S, Bouchard C, Clish CB, Robbins JM, Gerszten RE, **Sarzynski MA** (presenter). Sex Differences in the Plasma Metabolome Before and After Exercise Training. Poster presentation at the 2025 American Heart Association Epi/Lifestyle Scientific Sessions, New Orleans, LA March 2025

Jacobs KJC, Leszczynski EC, Barber JL, Rao P, Mi M, Dev PK, Ghosh S, Clish CB, Bouchard C, Robbins JM, Gerszten RE, **Sarzynski MA**. Plasma proteomic signature of BMI reveals heterogeneous cardiometabolic risk profiles within and across standard BMI classifications. Moderated poster presentation at the 2025 American Heart Association Epi/Lifestyle Scientific Sessions, New Orleans, LA March 2025

Herzig M, Dev PK, Jacobs KJC, Leszczynski EC, Barber JL, Rao P, Mi M, Ghosh S, Clish CB, Bouchard C, Gerszten RE, Robbins JM, **Sarzynski MA**. Plasma proteomic signatures of organ aging are not responsive to exercise training: HERITAGE Family Study. Poster presentation at the 2025 American Heart Association Epi/Lifestyle Scientific Sessions, New Orleans, LA March 2025

Dev PK, Leszczynski EC, Jacobs KJC, Barber JL, Schwartz CS, Mi M, Rao P, Spinale FG, Ross LM, Robbins JM, Gerszten RE, Kraus WE, **Sarzynski MA**. Proteomic signature of high and low VO<sub>2</sub>peak response to exercise training in chronic heart failure. Poster presentation at Southeast American College of Sports Medicine Annual Meeting, Greenville, SC, February 2025

Pitre MJ, Leszczynski EC, Jacobs KJC, Dev PK, Schwartz CS, Ross LM, Kraus WE, **Sarzynski MA**. The effects of exercise training on 10-year ASCVD predicted risk across the STRRIDE exercise interventions. Poster presentation at Southeast American College of Sports Medicine Annual Meeting, Greenville, SC, February 2025

Valakos MG, Leszczynski EC, Jacobs KJC, Barber JL, Rao P, Mi M, Dev PK, Ghosh S, Clish CB, Bouchard C, Robbins JM, Gerszten RE, **Sarzynski MA**. Metabolomic signature of Lp(a) is related to cardiometabolic profile and exercise responsiveness in healthy adults. Poster presentation at Southeast American College of Sports Medicine Annual Meeting, Greenville, SC, February 2025

Leszczynski EC, Miranda Maravi JS, Schwartz CS, Dev PK, Ross LM, Pearce RW, McPhaul MJ, Rohatgi A, Church TS, Collier TS, Johannsen NM, Kraus WE, **Sarzynski MA**. Effect Of Exercise Training On HDL Apolipoproteomic Score In Adults With Prediabetes Or Type 2 Diabetes. Poster presentation at American College of Sports Medicine Annual Meeting, Boston, MA, May 2024

Ruiz-Ramie JJ, Lane AD, Wang X, Wilkins JT, Bouchard C, **Sarzynski MA**. The Relationship between Low-Density Lipoprotein Discordance and Exercise Training Induced Changes in Multiple Cardiovascular Disease Risk Factors in the HERITAGE Family Study. Poster presentation at American College of Sports Medicine Annual Meeting, Boston, MA, May 2024

Leszczynski EC, Dev PK, Barber JL, Rao P, Mi M, Schwartz C, Ghosh S, Clish CB, Silbernagel G, Chen YQ, Konrad RJ, Robbins JM, Bouchard C, Gerszten RE, **Sarzynski MA** (presenter). Metabolomic predictors of changes in triglyceride metabolism with exercise training. Poster presentation at Cell Symposia: Exercise Metabolism, Lisbon, Portugal, May 2024

Leszczynski EC, Dev PK, Barber JL, Rao P, Mi M, Ghosh S, Clish CB, Bouchard C, Robbins JM, Gerszten RE, **Sarzynski, MA**. Plasma Lipidome Signature of Visceral Fat Reveals Heterogenous Cardiometabolic Risk Profiles. Poster presentation at the 2024 American Heart Association Epi/Lifestyle Scientific Sessions, Chicago, IL March 2024

Leszczynski EC, Dev PK, Barber JL, Rao P, Mi M, Ghosh S, Connelly MA, Clish CB, Bouchard C, Robbins JM, Gerszten RE, **Sarzynski MA**. Association of plasma lipid species with lipoprotein insulin resistance score before and after exercise training. Poster presentation at the 2024 American Heart Association Epi/Lifestyle Scientific Sessions, Chicago, IL March 2024



Leszczynski EC, Dev PK, Barber JL, Rao P, Ghosh S, Clish CB, Bouchard C, Robbins JM, Gerszten RE, **Sarzynski MA**. Cholesterol ester 18:2 is an exercise inducible metabolite associated with a favorable cardiometabolic profile. Poster presentation at the 2024 American Heart Association Epi/Lifestyle Scientific Sessions, Chicago, IL March 2024

Valakos MG, Barber JL, Leszczynski EC, Rao P, Mi M, Tahir UA, Dev PK, Clish CB, Ghosh S, Robbins JM, Bouchard C, Gerszten RE, **Sarzynski MA**. Attenuated cardiometabolic benefits from exercise training in individuals with genetically predicted high Lp(a) levels. Poster presentation at Southeast American College of Sports Medicine Annual Meeting, Greenville, SC, February 2024

Barber JL, Rao P, Mi MY, Tahir UA, Dev PK, Bouchard C, Clish CB, Robbins, JM, **Sarzynski MA**, Gerszten RE. Phenotypic Manifestations of Polygenic Risk for Ischemic Stroke in Adults Free from Disease. Poster Presentation at American Heart Association Scientific Sessions, Philadelphia, PA, November 2023

Rao P, Barber JL, Mi M, Tahir UA, Deng S, Farrell LA, Dev PK, Bouchard C, Clish C, **Sarzynski MA**, Robbins JM, Gerszten RE. Large-scale plasma proteomics and Mendelian Randomization of cardiovascular performance and peak arteriovenous oxygen difference identify novel biology related to  $\dot{V}O_{2max}$ . Poster presentation at American Heart Association Scientific Sessions, Philadelphia, PA, November 2023

Fredrickson K, Manish M, Barber J, Deng S, Rao P, Mi M, Dev PK, Farrell L, Clish C, Bouchard C, Gerszten RE, **Sarzynski MA**, Robbins JM. Antibody-Based Plasma Proteomics Profiling Reveals New Markers of Cardiorespiratory Fitness. Poster presentation at American Heart Association Scientific Sessions, Philadelphia, PA, November 2023

Meyler S, Swinton PA, Bottoms L, Bouchard C, Dalleck LC, Hunter B, **Sarzynski MA**, Wellsted D, Williams CJ, Muniz-Pumares D. Changes in cardiorespiratory fitness following exercise training prescribed relative to physiological thresholds and to traditional intensity anchors. Poster Presentation at European College of Sport Science Annual Congress, Paris, France July 2023

Falahati A, Wolfarth B, Rauramaa R, **Sarzynski MA**, Bouchard C, Vellers HL. Mitochondrial Genome Characterization in Male World-Class Elite Endurance Athletes. Poster Presentation at American College of Sports Medicine Annual Meeting, Denver, CO June 2023

Stahl ME, Grammer E, McGee J, Brown T, Clunan MC, Huff AC, Osborne BG, Matarese LE, Pories WJ, Houmard JA, Carels RA, **Sarzynski MA**, Swift D. Effects Of Weight Loss And Weight Maintenance On Inflammation In Overweight And Obese Adults. Poster Presentation at American College of Sports Medicine Annual Meeting, Denver, CO June 2023

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 weight maintenance on apoB in overweight and obese adults. Poster Presentation at Southeast Regional American

College of Sports Medicine Annual Meeting, Greenville, SC February 2023 and American College of Sports Medicine Annual Meeting, Denver, CO June 2023

Miranda Maravi JS, Schwartz CS, Dev PK, Barber JL, Reasons RJ, Pearce RW, McPhaul MJ, Gerszten RE, Rohatgi A, Bouchard C, Collier TS, **Sarzynski MA**. HDL Apolipoproteomic Score, Cardiometabolic Risk, and Exercise Training. Poster presentation at the 2023 American Heart Association Vascular Discovery: From Genes to Medicine Scientific Sessions, Boston, MA, May 2023

Samani SL, Barlow SC, Freeburg LA, Jones TL, Poole M, **Sarzynski MA**, Zile MR, Shazly T, Spinale FG. Relation between left ventricular relaxation and post-transcriptional regulation with exercise in pigs. Poster presentation at American Physiological Society Annual Meeting, Long Beach, CA, April 2023

Samani SL, Barlow SC, Freeburg LA, Jones TL, Poole M, **Sarzynski MA**, Zile MR, Shazly T, Spinale FG. Chronic exercise in pigs shifts post-transcriptional control of the myocardial inflammasome. Poster presentation at American Physiological Society Annual Meeting, Long Beach, CA, April 2023

Miranda Maravi JS, Hoffman WG, Dev PK, Barber JL, Schwartz CS, Clarkson WA, Robbins JM, Rao P, Mi M, Ghosh S, Clish C, Silbernagel G, Chen YQ, Konrad RJ, Bouchard C, Gerszten RE, **Sarzynski MA**. Plasma Proteomic Signatures of ANGPTL3/8 and 4/8 Before and After Exercise Training. Presentation at the 2023 American Heart Association Epi/Lifestyle Scientific Sessions, Boston, MA March 2023

Dev PK, Miranda Maravi JS, Hoffman WG, Barber JL, Schwartz CS, Clarkson WA, Robbins JM, Rao P, Mi M, Ghosh S, Clish C, Silbernagel G, Chen YQ, Konrad RJ, Bouchard C, Gerszten RE, **Sarzynski MA**. Association of ANGPTL3/8 and 4/8 with Plasma Metabolites Before and After Exercise Training. Presentation at the 2023 American Heart Association Epi/Lifestyle Scientific Sessions, Boston, MA March 2023

Schwartz CS, Barber JL, Ghosh S, Rohatgi A, Kelesidis T, Bouchard C, **Sarzynski MA**. Endurance exercise training improves the anti-oxidative properties of high-density lipoproteins (HDL). Poster Presentation at Southeast Regional American College of Sports Medicine Annual Meeting, Greenville, SC February 2023

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 weight maintenance on apoB in overweight and obese adults. Poster Presentation at Southeast Regional American College of Sports Medicine Annual Meeting, Greenville, SC February 2023

Miranda-Maravi S, Clarkson WA, Barber JL, Schwartz CS, Dev PK, Robbins JM, Gerszten RE, Clish C, Bouchard C, **Sarzynski MA**. Association of Lipid Species Measured in HDL-sized and Whole Plasma. Poster Presentation at Annual Biomedical Research Conference for Minoritized Scientists (ABRCMS), Anaheim, CA, November 2022.

Barber JL, Cai G, Robbins JM, Rao P, Mi M, Ghosh S, Clish C, Katz DH, Bouchard C, Gerszten RE, **Sarzynski MA**. Proteomic landscape of plasma lipoprotein responses to regular exercise. Poster presentation at American Heart Association Scientific Sessions, Chicago, IL, November 2022.

Clarkson WA, Barber JL, Robbins JM, Cai G, Rao P, Mi M, Dev PK, Ghosh S, Clish C, Katz DH, Bouchard C, Gerszten RE, **Sarzynski MA**. Associations Between Plasma Proteins with Body Composition Traits and Their Responses to Exercise Training. Poster presentation at American Heart Association Scientific Sessions, Chicago, IL, November 2022.

Dev PK, Barber JL, Clarkson WA, Robbins JM, Rao P, Mi M, Ghosh S, Clish C, Katz DH, Bouchard C, Gerszten RE, **Sarzynski MA**. Associations Between Plasma Metabolites with Body Composition Traits and Their Responses to Exercise Training. Poster presentation at American Heart Association Scientific Sessions, Chicago, IL, November 2022.

Hoffman WG, Barber JL, Dev P, Clarkson WA, Cai G, Rao P, Mi M, Katz DH, Ghosh S, Clish C, Robbins JM, Bouchard C, Gerszten RE, **Sarzynski MA**. Association of Plasma Metabolites With Inflammatory Markers CRP and GlycA and Their Responses to Exercise Training. Poster presentation at American Heart Association Scientific Sessions, Chicago, IL, November 2022.

Meyler S, Bottoms L, Bouchard C, Dalleck L, Hunter B, **Sarzynski M**, Whyatt C, Williams C, Muniz-Pumares D. The effect of different methods of exercise intensity prescription on cardiorespiratory fitness following endurance training: a meta-analysis of individual participant data. *Europhysiology* 2022, Sept 17 2022, Copenhagen, Denmark

Hoffman WG, Chen YQ, Schwartz CS, Barber JL, Clarkson WA, Dev PK, Reasons RJ, Silbernagel G, Konrad RJ, Bouchard C, **Sarzynski MA**. Effects of Exercise Training on ANGPTL3/8 and 4/8 and their Associations with Lipid and Cardiometabolic Traits. Poster presentation at Don Fredrickson Lipid Research Conference, Durham, NC, Sept. 2022.

Reasons RJ, Hamid Z, Barber JL, Kass AI, Clarkson WA, Dev PK, Wallis K, Bouchard C, Robbins JM, Gerszten RE, Olivier M, **Sarzynski MA**. Association between the HDL-sized and circulating plasma proteomes. Presentation at American Heart Association Vascular Discovery: From Genes to Medicine Scientific Sessions, Seattle, WA May 2022.

Barber JL, Cai G, Robbins JM, Rao P, Mi M, Ghosh S, Clish C, Katz DH, Gerszten RE, Bouchard C, **Sarzynski MA**. Exercise Training-Induced Changes in Lipid Traits are Associated with Changes in Circulating Proteins and Metabolites. [JL Barber: Doctoral Student Award Finalist.] Poster Presentation at Southeast Regional American College of Sports Medicine Annual Meeting, Greenville, SC February 2022 and ACSM Annual Meeting, San Diego, CA June 2022

Dev PK, Barber JL, Cai G, Robbins JM, Rao P, Mi M, Ghosh S, Clish C, Katz DH, Gerszten RE, Bouchard C, **Sarzynski MA**. Exercise Training Slows Down Proteomic Age Acceleration in Middle-Aged to Older Adults: HERITAGE Family Study. Poster Presentation at Southeast

Regional American College of Sports Medicine Annual Meeting, Greenville, SC February 2022 and ACSM Annual Meeting, San Diego, CA June 2022

Clarkson WA, Barber JL, Robbins JM, Rao P, Mi M, Dev PK, Ghosh S, Clish C, Katz DH, Gerszten RE, Bouchard C, **Sarzynski MA**. Associations of Changes in Plasma Proteins and Body Composition Traits in Response to Endurance Training. Poster Presentation at Southeast Regional American College of Sports Medicine Annual Meeting Greenville, SC February 2022

Schwartz CS, Charchar FJ, Barber JL, Robbins JM, Rao P, Mi M, Ghosh S, Bouchard C, Gerszten RE, **Sarzynski MA**. Genetically estimated telomere length weakly associates with body composition and metabolic profiles but not cardiorespiratory fitness. Poster Presentation at Southeast Regional American College of Sports Medicine Annual Meeting Greenville, SC February 2022.

Barber JL, Cai G, Dev PK, Robbins JM, Rao P, Mi M, Ghosh S, Clish C, Katz DH, Gerszten RE, Bouchard C, **Sarzynski MA**. Association Of Plasma Proteome With Inflammatory Markers Crp And Glyca And Their Responses To Exercise Training. Poster Presentation (Given by MA Sarzynski) at American Heart Association Epi/Lifestyle Scientific Sessions, Chicago, IL March 2022.

Barber JL, Cai G, Robbins JM, Rao P, Mi M, Ghosh S, Clish C, Katz DH, Gerszten RE, Bouchard C, **Sarzynski MA**. Proteomic and Metabolomic Signatures of Plasma Triglyceride-Related Trait Responses to Regular Exercise. Poster Presentation at American Heart Association Epi/Lifestyle Scientific Sessions, Chicago IL March 2022

Ruiz-Ramie JJ, Barber JL, Wilkins JT, Snell-Bergeon J, Lloyd-Jones DM, Lane AD, **Sarzynski MA**. Association Of Discordance Between Low-density Lipoprotein And High-density Lipoprotein Cholesterol Versus Particle Concentration With Incidence Of Type 2 Diabetes: CARDIA Study. Poster presentation at American Heart Association Epi/Lifestyle Scientific Sessions, Chicago, IL March 2022

Clarkson WA, Barber JL, Armstrong B, Wang Y, McGillicuddy FC, Saldanha S, Akinmolayemi O, Neeland IJ, Rohatgi A, **Sarzynski MA**. Combined Metabolic Health And Obesity Status Is Associated With Markers Of High-Density Lipoprotein Metabolism: Dallas Heart Study. Poster presentation at American Heart Association Epi/Lifestyle Scientific Sessions, Chicago, IL March 2022

Marini CF, Sisti D, Leon AS, Skinner JS, **Sarzynski MA**, Bouchard C, Rocchi MB, Piccoli G, Stocchi V, Federici A, Lucertini F. Accounting for individual characteristics makes the %HRR-% $\dot{V}O_2R$  relationship neither 1:1 nor more accurate. Poster presentation at the European College of Sports Science Congress, September 2021.

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 VO<sub>2</sub>max 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 Vo<sub>2</sub>max 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

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 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.

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**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.

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#### **Media coverage of research (selected)**

- 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>
- 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/>