Revised 2023-09-18

CURRICULUM VITAE
AARON S. EISMAN, PHD

Business Address:	Center for Biomedical Informatics 233 Richmond St, Providence, RI 02912
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EDUCATION

Sc.B.	Brown University Applied Mathematics, 2004-2008
M.D. Student	Warren Alpert Medical School Brown University, 2015-2024 (Expected)
Ph.D.	Brown University Computational Biology and Biomedical Informatics, 2018-2023

RESEARCH APPOINTMENTS

2005-2007	Research Assistant Koleske Laboratory Yale University, New Haven, CT
2013-2015	Clinical Research Coordinator Cardiopulmonary Exercise Laboratory Massachusetts General Hospital, Boston, MA
2018-2023	Graduate Student Doctoral Dissertation: "From Metabolites to Myocardial Infarction: Translational Bioinformatics of Atherosclerotic Cardiovascular Disease" Center for Biomedical Informatics Brown University, Providence, RI

HONORS AND AWARDS

2022-2023	John G. Peterson Predoctoral Fellow

EDITORIAL POSITIONS

2019-2023	AMIA Annual Symposium Reviewer

2019	North East Computational Health Summit Abstract Reviewer
2020-2023	Journal of Biomedical Informatics, Ad Hoc Reviewer

OTHER EMPLOYMENT

2008-2013	Director of Technology Paskewitz Asset Management Edison, NJ

MEMBERSHIP IN SOCIETIES

2017-2023	American Medical Informatics Association
2014-2015	American Heart Association

PUBLICATIONS LIST

ORIGINAL PUBLICATIONS IN PEER-REVIEWED JOURNALS

*indicates equal contribution in work and shared co-first authorship

1. **Aaron S Eisman** and Monty Robson. "Lightcurve of asteroid (21652) 1999 OQ2." *Minor Planet Bulletin* 31 (2004): 84.

2. Mindan K Sfakianos, **Aaron S Eisman**, Shannon D Gourley, William D Bradley, AJ Scheetz, Jeffrey Settleman, Jane R Taylor, Charlie R Greer, Anne Williamson, Anthony J Koleske. "Inhibition of Rho via Arg and p190RhoGAP in the postnatal mouse hippocampus regulates dendritic spine maturation, synapse and dendrite stability, and behavior." *The Journal of Neuroscience* 27.41 (2007): 10982-10992.

3. Meagan M Wasfy, James Deluca, Brant Berkstresser, Kathryn E Ackerman, **Aaron S Eisman**, Gregory D Lewis, Adolph M Hutter, Rory B Weiner, Aaron L Baggish. "ECG findings in competitive rowers: normative data and the prevalence of abnormalities using contemporary screening recommendations." *British journal of sports medicine* (2014): bjsports-2014-093919.

4. Bishnu P Dhakal, Rajeev Malhorta, Ryan M Murphy, Paul P Pappagiaanopoulos, Aaron L Baggish, Rory B Weiner, Nick E Houstis, **Aaron S Eisman**, Stacyann S Hough, Gregory D Lewis. "Mechanisms of exercise intolerance in heart failure with preserved ejection fraction: the role of abnormal peripheral oxygen extraction." *Circulation: Heart Failure* (2014): CIRCHEARTFAILURE. 114.001825.

5. Luiza H Degani-Costa, Barbara Levarge, Subba R Digumarthy, **Aaron S Eisman**, R Scott Harris, Gregory D Lewis. "Pulmonary vascular response patterns during exercise in interstitial lung disease." *European Respiratory Journal* (2015): ERJ-01910-2014.

6. Ravi V Shah, Matthew A Allison, Jõao A.C. Lima, Siddique A Abbasi, **Aaron S Eisman**, C Lai, M. Jerosch-Herold f, M. Budoff g, Venkatesh L. Murthy. Abdominal fat radiodensity, quantity and cardiometabolic risk: The Multi-Ethnic Study of Atherosclerosis. Nutr Metab Cardiovasc Dis [Internet]. 2016;26(2):114–22. Available from: http://dx.doi.org/10.1016/j.numecd.2015.12.002

7. Ravi V Shah, Shingo Kato, Sebastien Roujol, Venkatesh Murthy, Steven Bellm, Abyaad Kashem, Tamer Basha, Jihye Jang, **Aaron S Eisman**, Warren J Manning, Reza Nezafat. "Native Myocardial T 1 as a Biomarker of Cardiac Structure in Non-Ischemic Cardiomyopathy." *The American Journal of Cardiology* (2016).

8. Rajeev Malhotra, Bishnu P Dhakal, **Aaron S Eisman**, Paul P Pappagianopoulos, Ashley Dress, Rory B Weiner, Aaron L Baggish, Gregory D Lewis. Pulmonary Vascular Distensibility Predicts Pulmonary Hypertension Severity, Exercise Capacity, and Survival in Heart Failure. Circ Heart Fail [Internet]. 2016;9(6).

9. Ravi V Shah, Venkatesh L Murthy, Laura A Colangelo, Jared Reis, Bharath Ambale Venkatesh, Ravi Sharma, Siddique A Abbasi, David C Goff, J Jeffrey Carr, Jamal S Rana, James G Terry, Claude Bouchard, Mark A Sarzynski, **Aaron S Eisman**, Tomas Neilan, Saumya Das, Michael Jerosch-Herold, Cora E Lewis, Mercedes Carnethon, Gregory D Lewis, Joao AC Lima. "Association of Fitness in Young Adulthood With Survival and Cardiovascular Risk: The Coronary Artery Risk Development in Young Adults (CARDIA) Study." *JAMA Internal Medicine*: (2016) 1-9.

10. Nick E Houstis, **Aaron S Eisman**, Paul P Pappagianopoulos, Luke Wooster, Cole S Bailey, Peter D Wagner, Gregory D Lewis. Exercise Intolerance in HFpEF: Diagnosing and Ranking its Causes Using Personalized O2 Pathway Analysis. Circulation. 2017 Oct 9.

11. **Aaron S Eisman**, Rory B. Weiner, Elizabeth S. Chen, Paul C. Stey, Rishi K. Wadhera, Aaron P. Kithcart, Indra Neil Sarkar. An Automated System for Categorizing Transthoracic Echocardiography Indications According to the Echocardiography Appropriate Use Criteria. AMIA Annu Symp Proc. 2017.

12. Doreen DeFaria Yeh, Ada C Stefanescu Schmidt, **Aaron S Eisman**, John D Serfas, Mariam Naqvi, Mohamed A Youniss, Aaron D Ryfa, Asaad Khan, Lucy Safi, Sara R Tabtabai, Ami B Bhatt, Gregory D Lewis. Impaired Right Ventricular Reserve Predicts Adverse Cardiac Outcomes in Adults with Congenital Right Heart Disease. *BMJ: Heart*. 2018 Jul 20.

13. **Aaron S Eisman***, Ravi V Shah*, Bishnu P Dhakal, Paul P Pappagianopoulos, Luke Wooster, Cole S Bailey, Thomas F Cunningham, Kathryn M Hardin, Aaron L Baggish, Jennifer E Ho, Rajeev Malhotra, Gregory D Lewis. Pulmonary Capillary Wedge Pressure Patterns During Exercise Predict Exercise Capacity and Incident Heart Failure. *Circulation: Heart Failure* May 2018.

14. Jennifer E Ho, Emily K Zern, Luke Wooster, Cole S Bailey, Thomas Cunningham, **Aaron S Eisman**, Kathryn M Hardin, Giovanna A Zampierollo, Petr Jarolim, Paul Pappagianopoulos, Rajeev Malhotra, Matthew Nayor, Gregory D Lewis. Differential Clinical Profiles, Exercise Responses, and Outcomes Associated With Existing HFpEF Definitions. Circulation. 2019 Jul 30;140(5):353–65.

15. Jennifer E Ho, Emily K Zern, Emily S Lau, Luke Wooster, Cole S Bailey, Thomas Cunningham, **Aaron S Eisman**, Kathryn M Hardin, Robyn Farrel, John A Sbarbaro, Mark W Schoenike, Nicholas E Houstis, Aaron L Baggish, Ravi V Shah, Matthew Nayor, Rajeev Malhotra, Gregory D Lewis. Exercise Pulmonary Hypertension Predicts Clinical Outcomes in Patients With Dyspnea on Effort. J Am Coll Cardiol [Internet]. 2020 Jan 7;75(1):17–26. Available from: http://dx.doi.org/10.1016/j.jacc.2019.10.048

16. Nishant R Shah*, **Aaron S Eisman***, David Winchester, Alan R Morrison, Reema Qureshi, Indra Neil Sarkar, Wen-Chih Wu. E-Consult Protocoling to Improve the Quality of Cardiac Stress Tests. JACC Cardiovasc Imaging [Internet]. 2020 Sep 26; Available from: http://dx.doi.org/10.1016/j.jcmg.2020.08.009

17. **Aaron S Eisman**, Nishant R Shah, Carsten Eickhoff, George Zerveas, Elizabeth S Chen, Wen-Chih Wu, Indra Neil Sarkar. Extracting Angina Symptoms from Clinical Notes Using Pre-Trained Transformer Architectures. AMIA Annu Symp Proc 2020.

18. **Aaron S Eisman**, Katherine A. Brown, Elizabeth S. Chen, Indra Neil Sarkar. Clinical Note Section Detection Using a Hidden Markov Model of Unified Medical Language System Semantic Types. AMIA Annu Symp Proc 2021.

19. Usman A Tahir, Daniel H Katz, Julian Avila-Pachecho, Alexander G Bick, Akhil Pampana, Jeremy M Robbins, Zhi Yu, Zsu-Zsu Chen, Mark D Benson, Daniel E Cruz, Debby Ngo, Shuliang Deng, Xu Shi, Shuning Zheng, **Aaron S Eisman**, Laurie Farrell, Michael E Hall, Adolfo Correa, Russell P Tracy, Peter Durda, Kent D Taylor, Yongmei Liu, W Craig Johnson, Xiuqing Guo, Jie Yao, Yii-Der Ida Chen, Ani W Manichaikul, Frederick L Ruberg, William S Blaner, Deepti Jain, NHLBI Trans-Omics for Precision Medicine 1 Consortium, Claude Bouchard, Mark A Sarzynski, Stephen S Rich, Jerome I Rotter, Thomas J Wang, James G Wilson, Clary B Clish, Pradeep Natarajan, Robert E Gerszten. Whole Genome Association Study of the Plasma Metabolome Identifies Metabolites Linked to Cardiometabolic Disease in Black Individuals. Nat Commun [Internet]. 2022 Aug 22;13(1):4923. Available

from: http://dx.doi.org/10.1038/s41467-022-32275-3

20. Mark D. Benson*, **Aaron S. Eisman***, Usman A. Tahir, Daniel H. Katz, Shuliang Deng, Debby Ngo, Jeremy M. Robbins, Alissa Hofmann, Xu Shi1, Shuning Zheng, Michelle Keyes, Zhi Yu, Yan Gao, Laurie Farrell, Dongxiao Shen, Zsu-Zsu Chen, Daniel E. Cruz, Mario Sims, Adolfo Correa, Russell P. Tracy, Peter Durda, Kent D. Taylor, Yongmei Liu, W. Craig Johnson, Xiuqing Guo, Jie Yao, Yii-Der Ida Chen, Ani W. Manichaikul, Deepti Jain, Qiong Yang, NHLBI Trans-Omics for Precision Medicine (TOPMed) Consortium, Claude Bouchard, Mark A. Sarzynski, Stephen S. Rich, Jerome I. Rotter, Thomas J. Wang, James G. Wilson, Clary B. Clish, Indra Neil Sarkar, Pradeep Natarajan, and Robert E. Gerszten. Protein-Metabolite Association Studies Identify Novel Proteomic Determinants of Metabolite Levels in Human Plasma. *Cell Metabolism*. 2023 Sep 5; 35:1646-1660. Available from: https://doi.org/10.1016/j.cmet.2023.07.012

PUBLICATIONS SUBMITTED OR IN PREPARATION

1. **[IN PREPARATION] Aaron S Eisman**, Elizabeth S. Chen, Wen-Chih Wu, Karen Crowley, Dilum Aluthge, Katherine A. Brown, Indra Neil Sarkar. Health Information Exchange as the Foundation for a Learning Health System: Population Adherence to Risk-Based Cardiovascular Disease Prevention

ABSTRACTS

1. Heart Failure Society of America 2014, Las Vegas, NV
   Pulmonary Arterial Pressure Recovery Patterns Reflect Right Ventricular Function and Pulmonary Vascular Reserve (Poster, Sep 2014)

2. American Heart Association Scientific Sessions 2014, Chicago, IL
   Left Ventricular Mass Predicts Left Sided Filling Pressures and Exercise Capacity in Patients with Preserved Left Ventricular Function and Normal Resting Hemodynamics (Poster, Nov 2014)

   Pulmonary Arterial Pressure Recovery Patterns Reflect Right Ventricular Function and Pulmonary Vascular Reserve (Poster, Nov 2014)

3. American Heart Association Scientific Sessions 2015, Orlando, FL
   Exercise Pulmonary Capillary Wedge Pressure Patterns Predict Heart Failure Outcomes (Oral Abstract Presentation, Nov 2015)

4. American Medical Informatics Association Symposium 2017, Washington DC
   An Automated System for Categorizing Transthoracic Echocardiography Indications According to the Appropriate Use Criteria (Oral Paper Presentation, Nov 2017)

5. American Medical Informatics Association Symposium 2020, Virtual

Extracting Angina Symptoms from Clinical Notes Using Pre-Trained Transformer Architectures (Oral Paper Presentation, Nov 2020)

6. American Medical Informatics Association Symposium 2021, San Diego, CA
Clinical Note Section Detection Using a Hidden Markov Model of Unified Medical Language System Semantic Types (Oral Paper Presentation, Nov 2021)

SCHOLARLY WORK PUBLISHED IN OTHER MEDIA

2017-present	Biomedical Informatics and Data Science Skills, Editor https://docs.bcbi.brown.edu/bidss/home
2023	Brown Residency Program Inpatient Curriculum Development, Case Presentation and Pulmonary Hypertension Guidelines

INVITED PRESENTATIONS

LOCAL

1. Center for Biomedical Informatics Annual Symposium, Student Keynote "An Automated System for Categorizing Transthoracic Echocardiography Indications According to the Appropriate Use Criteria," April 19, 2017; Providence, RI

2. Brown Translational Research Annual Symposium, Student Keynote "Bedside to Bench: Translational Bioinformatics of Atherosclerotic Cardiovascular Disease," December 7, 2022; Providence, RI

NATIONAL

1. NHLBI Trans-Omics for Precision Medicine Annual Meeting "Protein-Metabolite Association Studies Identify Novel Proteomic Determinants of Metabolite Levels in Human Plasma," January 26, 2023; Rockville, MD

GRANTS

2016	Brown Scholarly Concentration Summer Research Fellow. $5,000
2020-2023	(F30LM013320) Ruth L. Kirschtein National Research Service Award. "Improving the Accuracy of ASCVD Risk Estimation Using Population EHR and Genetic Data."

$156,588 total
Role: PI

UNIVERSITY TEACHING ROLES

2016	Instructor Introduction to Exercise Physiology Brown University Stem II Summer Program
2019	Teaching Assistant Methods in Informatics and Data Science Skills for Health Brown University, College of Arts and Sciences
2019	Teaching Assistant Biomedical Informatics and Data Science Skills Brown University, Warren Alpert Medical School

PROFESSIONAL COMMUNITY ACTIVITIES

2004-2006	Co-Coordinator Providence Science Outreach
2012-2013	Patient Aide Yale New Haven Hospital CCU
2015-2017	Board Member Brown Student Free Clinic