

CURRICULUM VITAE
ALAN ROSS MORRISON

The Warren Alpert Medical School of Brown University
Vascular Research Laboratory
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EDUCATION

Undergraduate Degree	University of Massachusetts, Amherst Biology, B.S., 1996 <i>Summa Cum Laude</i>
Undergraduate Awards:	Commonwealth Scholar Award 1996 Junior Fellow 1996 Phi Beta Kappa Honor Society 1995 William F. Field Memorial Scholarship for Academic Excellence 1995-1996 Ray Ethan Torrey Memorial Scholarship for Botany 1995-1996 Howard Hughes Research Experience for Undergraduates Program Award 1994, 1995
Medical School Degree	University of Massachusetts Medical School, Worcester 7/1/1996 to 6/30/2005 M.D. 2005
Medical School Awards:	John S. Efstathiou Memorial Award for compassion, caring, and understanding in the care of patients and their families 2005 American Diabetes Association Physician-Scientist Training Award 1999-2001 NIH PreIRTA Fellowship Award 1998 Howard Hughes Summer Research Program Award 1996 and 1997
Other Advanced Degrees	University of Massachusetts Medical School Graduate School of Biomedical Sciences, Worcester 7/1/1996 to 6/30/2005 Ph.D. in Biomedical Sciences 2005

POSTGRADUATE TRAINING

Residency
Yale-New Haven Hospital
20 York Street
New Haven, CT 06510
Intern and Resident, Internal Medicine
07/01/2005-06/30/2007

Fellowship
Yale-New Haven Hospital
20 York Street
New Haven, CT 06510
Fellow, Clinical Cardiovascular Medicine
07/01/2007-06/30/2009

Yale University School of Medicine
333 Cedar Street
New Haven, CT 06510
Fellow, Research Cardiovascular Medicine
07/01/2009-06/30/2014

POSTGRADUATE HONORS AND AWARDS

2023 Brown University Early Career Research Achievement Award
2023 Honorary Degree conferred during Brown University at 255th Commencement:
Master of Arts *ad eundem*
2022 Brown Outstanding Achievement for a Master's Degree Award (*Cadence Lee, mentee*)
2022 Emerging Scientist Award for Women 2022 Winner, given by Women's
Leadership Committee of the American Heart Association's Council on
Arteriosclerosis, Thrombosis, and Vascular Biology (*Cadence Lee, mentee*)
2021 Harold S. Geneen Charitable Trust Award
Program for Coronary Heart Disease Research
2017 Presidential Early Career Award for Scientists and Engineers, Nominee 2017
2016 Best Abstract, Providence VA Medical Center, VA National Research Day,
05/2016.
2015 Actelion ENTELLIGENCE Young Investigator Award, 08/2015
2013 Third Place Junior Faculty Award for Basic Science: Northwestern
Cardiovascular Young Investigators' Forum, Northwestern University Feinberg
School of Medicine, 9/2013.
2013 Invited Abstract Finalist: Northwestern Cardiovascular Young Investigators'
Forum, Northwestern University Feinberg School of Medicine, 7/2013.
2012 NIH Loan Repayment Program Award, 7/2012.
2012 ATVB Travel Award for Young Investigators, 4/2012.
2009 NIH Individual Ruth L. Kirschstein National Research Service Award (NRSA),
7/2009.

MILITARY SERVICE

N.A.

PROFESSIONAL LICENSES AND BOARD CERTIFICATION

Connecticut State License #047982, 07/2009.
DEA Controlled License Registration #FM1552288, 07/2009.
Connecticut Controlled Substance Registration # CSP.0038186, 03/2009.
American Board of Internal Medicine, Internal Medicine Certification #290389, 08/2011, recertification 10/2021.
Certification Board of Cardiovascular Computed Tomography Certification #1851, 09/2012, recertification 09/2022.
American Board of Internal Medicine, Cardiovascular Medicine Certification #290389, 11/2012, recertification 10/2022.
Certification Board of Nuclear Cardiology #8926, 12/2012, recertification 12/2022.

ACADEMIC APPOINTMENTS

- Instructor, Internal Medicine and Cardiovascular Medicine, Yale University School of Medicine/VA Connecticut Healthcare, 07/2013-06/2014.
- Assistant Professor, Cardiovascular Medicine, Yale University School of Medicine/VA Connecticut Healthcare, 07/2014-08/2016.
- Assistant Professor, Cardiovascular Medicine, Alpert Medical School at Brown University, 03/01/2016-06/30/2022.
- Program Director, Preventive Cardiology Fellowship, Providence VA Medical Center, Lifespan, and Alpert Medical School at Brown University, 01/01/2021-present.
- Associate Professor of Medicine, Cardiovascular Medicine, 07/01/2022-present.
- Director of Research, Department of Cardiology, Providence VA Medical Center, 07/01/2023-present.

HOSPITAL APPOINTMENTS

- Attending Physician, Internal Medicine, Yale-New Haven Hospital, 09/2009-06/2013.
- Attending Physician, Cardiovascular Medicine, Yale-New Haven Hospital, 07/2013-03/2016.
- Attending Physician, Cardiovascular Medicine, VA Connecticut Healthcare System, 07/2013-03/2016.
- Attending Physician and Principal Investigator, Cardiovascular Medicine and Research, VA Providence Medical Center, 03/2016-present.

OTHER APPOINTMENTS

- Assistant Editor for Cardiovascular Medicine, eMedicine from WebMD, 07/2007-06/2012.
- Invited Peer-Reviewer: JNM, JACC Cardiovascular Imaging, Journal of Thoracic and Cardiovascular Surgery, Cardiovascular Revascularization Medicine, European Journal of Nuclear Medicine and Molecular Imaging, Journal of Molecular Biology, PLOS ONE, Nature Scientific Reports, Theranostics, JACC: Basic to Translational Science, Diabetologia, JACC, ATVB, FASEB, Scientific Reports, Circulation: Cardiovascular Imaging, Frontiers in Cardiovascular Medicine. 04/2012-present.
- Invited External Expert Reviewer: Agence Nationale De La Recherche, Paris, Generic Call 2017, 04/2017.
- Invited Panel Reviewer: 2018/10 ZRG1 VH-N (80) A, Vascular and Hematology Special Emphasis Panel (SEP) for Academic Research Enhancement Award - AREA (R15). National Institutes of Health, 7/2018.

- Invited Panel Reviewer: Special Emphasis Panel/Scientific Review Group 2019/01 ZHL1 CSR-H (F3) 2, Clinical Ancillary Studies (R01 Clinical Trial Optional). National Institutes of Health, 11/2018.
- Invited Panel Reviewer: Special Emphasis Panel/Scientific Review Group 2019/01 ZHL1 CSR-H (F3) 2, Clinical Ancillary Studies (R01 Clinical Trial Optional). National Institutes of Health, 03/2019.
- Invited Panel Reviewer: Special Emphasis Panel/Scientific Review Group 2019/01 ZHL1 CSR-H (F3) 2, Clinical Ancillary Studies (R01 Clinical Trial Optional). National Institutes of Health, 07/2019.
- Invited Panel Reviewer: 2018/10 ZRG1 VH-N (80) A, Vascular and Hematology Special Emphasis Panel (SEP) for Academic Research Enhancement Award - AREA (R15). National Institutes of Health, 7/2019.
- Invited Panel Reviewer: Special Emphasis Panel/Scientific Review Group 2019/01 ZHL1 CSR-H (F3) 2, Clinical Ancillary Studies (R01 Clinical Trial Optional). National Institutes of Health, 10/2019.
- Invited Panel Reviewer: Special Emphasis Panel/Scientific Review Group 2020/01 ZHL1 CSR-H (O1), Opportunities for Collaborative Research at the NIH Clinical Center. Virtual meeting, National Institutes of Health, 07/2020.
- Invited Panel Reviewer: Special Emphasis Panel/Scientific Review Group 2021/01 ZHL1 CSR-H (F2) 2 meeting (UG3.U24 and the Early Phase Trial R61.R33), Virtual, National Institutes of Health, 11/2020.
- Invited Panel Reviewer: Special Emphasis Panel/Scientific Review Group 2021/05 AVI meeting. Virtual meeting, National Institutes of Health, 2/2021.
- Invited Panel Reviewer: AHA Cardiomyopathy Fellowship Scientific Review Group. Virtual meeting, AHA, 3/2021.
- Invited Panel Reviewer: AHA Cardiomyopathy Fellowship Scientific Review Group. Virtual meeting, AHA, 10/2021.
- Invited Panel Reviewer: Special Emphasis Panel/Scientific Review Group 2021/01 ZHL1 CSR-H (F2) 2 meeting (UG3.U24 and the Early Phase Trial R61.R33), Virtual, National Institutes of Health, 03/2022.
- Invited Panel Reviewer: Brown Respiratory Research Training Program (BRRTP) T32 HL134625, Virtual, Brown University, 3/2022.
- Invited Panel Reviewer: NHLBI LRP Review, Virtual, National Institutes of Health, 04/2022.
- Invited Panel Reviewer: 2022/08 ZRD1 CARB-R (01) 1 Cardiovascular Studies-B, Virtual, U.S. Department of Veterans Affairs ORD/ Special Emphasis Panel, Virtual, VA, 6/2022.
- Standing Member: Atherosclerosis and Vascular Inflammation Study Section (AVI), Center for Scientific Review (CSR), National Institutes of Health, 4-year term, 07/01/2022 to 06/30/2026.
 - Co-Chair, 10/2023.
- Associate Editor, Valvular Heart Disease, Frontiers in Cardiovascular Medicine, 07/01/2022 to present.
- Invited Panel Reviewer: 2023/01 ZRD1 CARB-R (01) 1 Cardiovascular Studies-B, Virtual, U.S. Department of Veterans Affairs ORD/ Special Emphasis Panel, Virtual, VA, 12/2022.
- Invited Panel Reviewer: NHLBI LRP Review, Virtual, National Institutes of Health, 03/2023.

HOSPITAL COMMITTEES

- Cardiac Observation Unit Committee, Yale New Haven Hospital, New Haven, CT, 07/2012-06/2013.
- Noninvasive Imaging Committee, Cardiovascular Section, V.A.C.H.C.S., West Haven, CT, 07/2013-03/2016.

UNIVERSITY COMMITTEES

- Student Representative, Library and Learning Resource Committee, UMass Medical School, Worcester, MA, 07/2004.
- Junior Faculty Member, Advance-CTR Internal Advisory Committee, IDEa-CTR program award by the National Institute of General Medical Sciences, Brown University, 05/2017-present.
- Faculty Search and Recruitment Committee, Department of Medicine, Section of Cardiovascular Medicine, Brown University, Rhode Island Hospital, and Providence VA Medical Center, 2016-2018.
- Preventive Cardiology Fellowship Program Annual Selection Committee, Department of Medicine, Section of Cardiovascular Medicine, Providence VA Medical Center, 01/2017-present.
- General Cardiology Fellowship Program Annual Selection Committee, Department of Medicine, Section of Cardiovascular Medicine, Brown University, Rhode Island Hospital, and Providence VA Medical Center, 09/2017-present.
- Faculty CPVB COBRE Core Director Search Committee, Department of Medicine, Section of Cardiovascular Medicine, Brown University, Rhode Island Hospital, and Providence VA Medical Center, 04/2021-7/2021.
- Faculty Search Committee, Department of Medicine, Section of Cardiovascular Medicine, Brown University, Rhode Island Hospital, and Providence VA Medical Center, 10/2021-present.
- MCB Graduate Program Admissions Committee, Brown University, Rhode Island Hospital, and Providence VA Medical Center, 10/2021-present.

MEMBERSHIP IN SOCIETIES

North American Vascular Biology Organization (NAVBO) (member since 02/2016)
American Heart Association (member since 12/2011)
American College of Physicians (member since 12/2010)
American College of Cardiology (member since 07/2007)
American Medical Association (member since 05/2004)
Massachusetts Medical Society (member since 05/2004)
Worcester Medical Society (member since 05/2004)

PUBLICATIONS LIST

[§] Trainee/Mentee

ORIGINAL PUBLICATIONS IN PEER-REVIEWED JOURNALS

1. Zheng X, **Morrison AR**, Chung AS, Moss J, Bortell R. Substrate specificity of soluble and membrane-associated ADP-ribosyltransferase ART2.1. J Cell Biochem. 2006 Jul 1;98(4):851-60. doi: 10.1002/jcb.20722. PubMed PMID: 16453289.
2. **Morrison AR**, Moss J, Stevens LA, Evans JE, Farrell C, Merithew E, Lambright DG, Greiner DL, Mordes JP, Rossini AA, Bortell R. ART2, a T cell surface mono-ADP-

ribosyltransferase, generates extracellular poly(ADP-ribose). *J Biol Chem*. 2006 Nov 3;281(44):33363-72. doi: 10.1074/jbc.M607259200. Epub 2006 Aug 24. PubMed PMID: 16931513.

3. Heysell SK, Thomas TA, **Morrison AR**, Barry M. Salmonella panama and acute respiratory distress syndrome in a traveler taking a proton pump inhibitor. *J Travel Med*. 2008 Nov-Dec;15(6):460-3. doi: 10.1111/j.1708-8305.2008.00258.x. PubMed PMID: 19090804.

4. **Morrison AR**, Yarovinsky TO, Young BD, Moraes F, Ross TD, Ceneri N, Zhang J, Zhuang ZW, Sinusas AJ, Pardi R, Schwartz MA, Simons M, Bender JR. Chemokine-coupled β 2 integrin-induced macrophage Rac2-Myosin IIA interaction regulates VEGF-A mRNA stability and arteriogenesis. *J Exp Med*. 2014 Sep 22;211(10):1957-68. doi: 10.1084/jem.20132130. Epub 2014 Sep 1. PubMed PMID: 25180062; PubMed Central PMCID: PMC4172219.

5. Bailey G[§], Meadows J, **Morrison AR**. Imaging Atherosclerotic Plaque Calcification: Translating Biology. *Curr Atheroscler Rep*. 2016 Aug;18(8):51. doi: 10.1007/s11883-016-0601-6. Review. PubMed PMID: 27339750; PubMed Central PMCID: PMC5206894.

6. Ceneri N[§], Zhao L[§], Young BD, Healy A[§], Coskun S, Vasavada H, Yarovinsky TO, Ike K, Pardi R, Qin L, Qin L, Tellides G, Hirschi K, Meadows J, Soufer R, Chun HJ, Sadeghi MM, Bender JR, **Morrison AR**. Rac2 Modulates Atherosclerotic Calcification by Regulating Macrophage Interleukin-1 β Production. *Arterioscler Thromb Vasc Biol*. 2017 Feb;37(2):328-340. doi: 10.1161/ATVBAHA.116.308507. Epub 2016 Nov 10. PubMed PMID: 27834690; PubMed Central PMCID: PMC5269510. – *Featured cover article and published with a corresponding editorial*.

7. Bailey G[§], Healy A[§], Young BD, Sharma E[§], Meadows J, Chun HJ, Wu WC, Choudhary G, **Morrison AR**. Relative predictive value of lung cancer screening CT versus myocardial perfusion attenuation correction CT in the evaluation of coronary calcium. *PLoS One*. 2017;12(4):e0175678. doi: 10.1371/journal.pone.0175678. eCollection 2017. PubMed PMID: 28437443; PubMed Central PMCID: PMC5402939.

8. B. Malm, P. Hermany, **A.R. Morrison**, “Incidental Thrombus in Transit Causing Embolic Stroke,” *Case Reports in Medicine*, vol. 2017, Article ID 3161972, 2017. doi:10.1155/2017/316197

9. Hwangbo C, Wu J, Papangeli I, Adachi T, Sharma B, Park S, Zhao L[§], Ju H, Go GW, Cui G, Inayathullah M, Job JK, Rajadas J, Kwei SL, Li MO, **Morrison AR**, Quertermous T, Mani A, Red-Horse K, Chun HJ. Endothelial APLNR regulates tissue fatty acid uptake and is essential for apelin's glucose-lowering effects. *Sci Transl Med*. 2017 Sep 13;9(407). doi: 10.1126/scitranslmed.aad4000. PubMed PMID: 28904225; PubMed Central PMCID: PMC5703224.

10. Christensen JL[§], Sharma E[§], Gorvitovskaia AY[§], Watts JP Jr[§], Assali M, Neverson J[§], Wu WC, Choudhary G, **Morrison AR**. Impact of Slice Thickness on the Predictive Value of Lung Cancer Screening Computed Tomography in the Evaluation of Coronary Artery Calcification. *J Am Heart Assoc*. 2019 Jan 8;8(1):e010110. doi: 10.1161/JAHA.118.010110. PubMed PMID: 30620261; PubMed Central PMCID: PMC6405734.

11. Mantsounga CS[§], **Morrison AR**. Empagliflozin and Protecting Microvascular Support of Heart Mechanics SGLT2 Inhibition or More? *JACC: Basic To Translational Science*. 2019 September; 4(5):592.

12. Imran HM, Baig M, Erqou S, Taveira TH, Shah NR, **Morrison A**, Choudhary G, Wu WC. Home-Based Cardiac Rehabilitation Alone and Hybrid With Center-Based Cardiac

- Rehabilitation in Heart Failure: A Systematic Review and Meta-Analysis. *J Am Heart Assoc.* 2019 Aug 20;8(16):e012779. doi: 10.1161/JAHA.119.012779. Epub 2019 Aug 17. PubMed PMID: 31423874; PubMed Central PMCID: PMC6759908.
13. Clements RT, Vang A, Fernandez-Nicolas A, Kue NR, Mancini TJ, **Morrison AR**, Mallem K, McCullough DJ, Choudhary G. Treatment of Pulmonary Hypertension With Angiotensin II Receptor Blocker and Neprilysin Inhibitor Sacubitril/Valsartan. *Circ Heart Fail.* 2019 Nov;12(11):e005819. doi: 10.1161/CIRCHEARTFAILURE.119.005819. Epub 2019 Nov 11. PubMed PMID: 31707802; PubMed Central PMCID: PMC6857845.
14. Christensen JL[§], Yu W[§], Tan S[§], Chu A[§], Vargas F[§], Assali M[§], Shah NR, Reginato AM, Wu WC, Choudhary G, **Morrison AR**. Gout Is Associated With Increased Coronary Artery Calcification and Adverse Cardiovascular Outcomes. *JACC Cardiovasc Imaging.* 2020 Mar;13(3):884-886. doi: 10.1016/j.jcmg.2019.10.019. Epub 2019 Dec 18. PubMed PMID: 31864984; NIHMSID: NIHMS1581963.
15. Healy A[§], Berus JM[§], Christensen JL[§], Lee C[§], Mantsounga C[§], Dong W[§], Watts JP Jr, Assali M, Ceneri N[§], Nilson R[§], Neverson J[§], Wu WC, Choudhary G, **Morrison AR**. Statins Disrupt Macrophage Rac1 Regulation Leading to Increased Atherosclerotic Plaque Calcification. *Arterioscler Thromb Vasc Biol.* 2020 Mar;40(3):714-732. doi: 10.1161/ATVBAHA.119.313832. Epub 2020 Jan 30. PubMed PMID: 31996022; PubMed Central PMCID: PMC7082877. – *Featured cover illustration.*
16. Christensen JL[§], Tan S[§], Chung HE[§], Ghosalkar DS[§], Qureshi R, Chu A[§], Yu W[§], Berus J[§], Shah NR, Wu WC, Chun H Aikawa E, Choudhary G, and **Morrison AR**. Aortic valve calcification predicts all-cause mortality independent of coronary calcification and severe stenosis. *Atherosclerosis.* 2020; 307:16-20. doi: 10.1016/j.atherosclerosis.2020.06.019. Epub 2020 Jul 8. PMID: 32702536.
17. Shah NR, Eisman AS, Winchester DE, **Morrison AR**, Qureshi R, Sarkar IN, Wu WC. E-Consult Protocoling to Improve the Quality of Cardiac Stress Tests. *JACC Cardiovasc Imaging.* 2020 Sep 26; S1936-878X(20)30726-9. doi: 10.1016/j.jcmg.2020.08.009. PMID: 33011119.
18. Ahmad K, Erqou S, Shah N, Nazir U, **Morrison AR**, Choudhary G, Wu WC. Association of poor housing conditions with COVID-19 incidence and mortality across US counties. *PLoS One.* 2020;15(11): e0241327. PubMed PMID: 33137155.
19. Lakshmanan S, Jankowich M, Wu WC, Abbasi S, **Morrison AR**, Choudhary G. Association of plasma adiponectin with pulmonary hypertension, mortality and heart failure in African Americans: Jackson Heart Study. *Pulm Circ.* 2020 Nov 11;10(4):2045894020961242. doi: 10.1177/2045894020961242. PMID: 33240486; PMCID: PMC7675872.
20. Chung, H.[§], Chen, J. [§], Hsieh, C. [§], Christensen, J.L.[§], Ghosalkar D.[§], Soares C.[§], Chu A.[§], Shah N.R., Wu, W.C., Choudhary, G., and **Morrison, A.R.**, “Aortic Valve Calcification Is Associated with Future Cognitive Impairment.” *J Alzheimers Dis Rep.* 2021;5(1):337-343. doi: 10.3233/ADR-200253. PMID: 34113789.
21. Vang A, da Silva Gonçalves Bos D, Fernandez-Nicolas A, Zhang P, **Morrison AR**, Mancini TJ, Clements RT, Polina I, Cypress MW, Jhun BS, Hawrot E, Mende U, O-Uchi J, Choudhary G. $\alpha 7$ Nicotinic acetylcholine receptor mediates right ventricular fibrosis and diastolic dysfunction in pulmonary hypertension. *JCI Insight.* 2021 Jun 22;6(12). doi: 10.1172/jci.insight.142945. PubMed PMID: 33974567; PubMed Central PMCID: PMC8262476.
22. C. Soares, A. Samara, M. Yunyun, J. Echouffo-Tcheugui, A. Masri, A. Samara, **A. Morrison**, N Lin, W.C. Wu, S. Erquo, “Coronary artery calcification and plaque characteristics in people living with HIV: A Systematic Review and Meta-Analysis.” *J*

Am Heart Assoc. 2021 Oct 5;10(19):e019291. doi: 10.1161/JAHA.120.019291. Epub 2021 Sep 29. PMID: 34585590.

23. Mantsounga CS[§], Lee C[§], Neverson J[§], Sharma S[§], Healy A[§], Berus JM[§], Parry C[§], Ceneri NM[§], López-Giráldez F, Chun HJ, Lu Q, Sellke F, Choudhary G, **Morrison AR**. Macrophage IL-1 β promotes arteriogenesis by autocrine STAT3- and NF- κ B-mediated transcription of pro-angiogenic VEGF-A. *Cell Rep*. 2022 Feb 1;38(5):110309. doi: 10.1016/j.celrep.2022.110309. PubMed PMID: 35108537; NIHMSID:NIHMS1776714. *Featured on Rhode Island Local News 02/01/2022:*

<https://turnto10.com/features/health-landing-page/research-could-unlock-better-ways-to-treat-diabetes-related-condition>

Featured on the NAVBO Journal Club 3/17/2022.

24. Sumayin Ngamdu K[§], Mallawaarachchi I, Dunipace EA, Chuang LH, Jafri SH, Shah NR, Jeong YN, **Morrison AR**, Bhatt DL. Association Between Periodontal Disease and Cardiovascular Disease (from the NHANES). *Am J Cardiol*. 2022 Jun 27:S0002-9149(22)00630-0. doi: 10.1016/j.amjcard.2022.05.028. PMID: 35773046.

25. White A, Wang Z, Wang X, King M, Guo C, Mantsounga C[§], Ayala A, **Morrison AR**, Choudhary G, Sellke F, Chambers E, Ware LB, Rounds S, Lu Q. NLRP3 inflammasome activation in cigarette smoke priming for *Pseudomonas aeruginosa*-induced acute lung injury. *Redox Biol*. 2022 Sep 15:102467. doi: 10.1016/j.redox.2022.102467. Epub ahead of print. PMID: 36175355.

26. Sharma S[§], **Morrison AR**. Unlocking the Secrets of Subclinical Calcific Aortic Valve Disease and Heart Failure. *Circ Cardiovasc Imaging* 2023 March 16: *In Press*.

27. Ngamdu, K.S., Ghosalkar, D.S., Chung, H.E., Christensen, J.L., Lee, C., Butler, C.A., Ho, T., Chu, A., Heath, J.R., Baig, M., Wu, W.C., Choudhary G., **Morrison, A.R.** (2023). Long-term statin therapy is associated with severe coronary artery calcification. *PloS one* 18, e0289111.

OTHER PEER-REVIEWED PUBLICATIONS

1. **Morrison AR**, Sinusas AJ. New molecular imaging targets to characterize myocardial biology. *Cardiol Clin*. 2009 May;27(2):329-44, Table of Contents. doi: 10.1016/j.ccl.2008.12.008. Review. PubMed PMID: 19306773; PubMed Central PMCID: PMC2700784.

2. **Morrison AR**, Sinusas AJ. Advances in radionuclide molecular imaging in myocardial biology. *J Nucl Cardiol*. 2010 Jan-Feb;17(1):116-34. doi: 10.1007/s12350-009-9167-9. PubMed PMID: 20012514; PubMed Central PMCID: PMC2823801.

3. Shah NR, Blankstein R, Villines T, Imran H, **Morrison AR**, Cheezum MK. Coronary CTA for Surveillance of Cardiac Allograft Vasculopathy. *Curr Cardiovasc Imaging Rep*. 2018;11(11):26. doi: 10.1007/s12410-018-9467-z. Epub 2018 Sep 24. Review. PubMed PMID: 30464783; PubMed Central PMCID: PMC6223999.

4. Lee, C. F.[§], Carley, R.E.[§], Butler, C.A.[§], **Morrison, A.R.**, “Rac GTPase Signaling in Immune-mediated Mechanisms of Atherosclerosis.” *Cells* 2021; 10: 2808. <https://doi.org/10.3390/cells10112808>

BOOKS AND BOOK CHAPTERS

1. **Morrison A.R.**, Sinusas A.J., “Clinical Nuclear Cardiology: State of the Art and Future Directions,” 4th ed. Zaret BL, Beller GA, editors. Philadelphia: Elsevier, Inc.; 2010. Chapter 43, Molecular Imaging Approaches for Evaluation of Myocardial Pathophysiology: Angiogenesis, Ventricular Remodeling, Inflammation, and Cell Death; p.896-917. 878p.

2. St. John Sutton M., **Morrison A.R.**, Sinusas A.J., Ferrari V.A., “Heart Failure: A Companion to Braunwald's Heart Disease,” 3rd ed. Mann DL, Felker G, editors. Philadelphia: Elsevier Inc.; 2015. Chapter 29, Cardiac Imaging in Heart Failure; p.438-463. 762p.
3. **A.R. Morrison**, J.C. Wu, M. Sadeghi, “Cardiovascular Molecular Imaging,” Nuclear Cardiac Imaging, Ami Iskandrian and Ernest Garcia (Oxford University Press, New York), 5th Ed, 2015.
4. St. John Sutton M., **Morrison A.R.**, Sinusas A.J., Ferrari V.A., “Heart Failure: A Companion to Braunwald's Heart Disease,” 4th ed. Mann DL, Felker GM, editors. Philadelphia: Elsevier Inc.; 2019. Chapter 32, Cardiac Imaging in Heart Failure; p.418-448. 739p.
5. Sharma E. and **Morrison, A.R.**, “Diagnostic Tests and Procedures in the Patient with Cardiovascular Disease” Elsevier Inc.; 2020. Chapter 4, Cecil Essentials of Medicine 10e; p. 24-42. 1248 p. March 2021. Paperback ISBN: 9780323722711

OTHER NON-PEER REVIEWED PUBLICATIONS

N.A.

CORPORATE AUTHORSHIP OR MULTICENTER TRIALS

N.A.

PUBLICATIONS SUBMITTED OR IN PREPARATION

§ Trainee/Mentee

1. H. Chung[§], M. Ramani[§], D. Ghosalkar[§], A. Chu[§], J. R. Heath[§], T. Ho[§], W.C. Wu, G. Choudhary, **A.R. Morrison**. “Pulmonary Artery to Aorta Diameter Ratio Derived from Lung Cancer Screening CT is Associated with COPD and Pneumonia Hospitalizations.” *Annals ATS, In Submission, 2023.*
2. F. Bartoli-Leonard, L. Marinho, J.M. Beach, **A.R. Morrison**, N. Narula, E. Aikawa, J. Narula, A. Pradhan. “Calcification: an unmet clinical obstacle in peripheral arterial disease” *Circulation, In Submission. 2023.*
3. A. Shahab[§], P. Brodeur[§], J.R. Heath[§], C. Butler[§], T. Chamdi[§], N.R. Shah, W.C. Wu, G. Choudhary, S. Erqou, A.R. Morrison. “Aortic Valve Calcification is Associated with Cardiovascular Outcomes In Patients with Mild Coronary Artery Calcium Scores.” *JACC: Cardiovascular Imaging, In Submission. 2023*
4. Lee C.[§], Carley, R.[§], Berus J.M. [§], Mantsounga C.S. [§], Neverson J.[§], Sharma, S.[§], Butler, C.[§], Caballaro, O.[§], Healy, A.[§], Sellke F., Choudhary G., **Morrison A.R.** “Macrophage Rac1 as a Transcriptional Cofactor for NF-κB During IL-1β-dependent Atherosclerotic Calcification.” *JCI In Preparation 2023.*
5. Lee C.[§], Carley, R. [§], Sharma, S. [§], Mantsounga C.S.[§], Pierce, J. [§], Parry, C. [§], Caballaro, O.[§], Amelotte, E. [§], Butler, C.[§], Choudhary G., **Morrison A.R.** “A Novel Humanized ACE2 Mouse Model for Evaluating COVID-19 Infection” *In Preparation 2023.*
6. C.S. Mantsounga[§], Sharma, S.[§], C. Lee[§], J. Neverson[§], A. Healy[§], Sellke F., Fedulov, A., Lisi, G., G. Choudhary, **A.R. Morrison**, “Impaired Dicer1 Dose-sensitive miR-29 Expression With Consequent VEGF-A mRNA Instability as a Mechanism of Age-Related Defects in Inflammatory Arteriogenesis.” *In Preparation. 2022.*

7. C.S. Mantsounga[§], Sharma, S.[§], C. Lee[§], J. Neverson[§], G. Choudhary, **A.R. Morrison**, “Early myeloid VEGF-A Expression is Required to Promote Later Inflammatory Arteriogenesis.” *In Preparation*. 2022.
8. Q. Liu, K.H.K. Chan, **A.R. Morrison**, S.T. McGarvey, X., Luo, J.G. Wilson, A. Correa, A. P. Reiner, S Liu, W.C. Wu, “Discovery of Biological Pathways and Gene Networks for Heart Failure with Preserved and Reduced Ejection Fraction in Women Across Ethnicities.” *JAMA Cardiology*, 2022 *In Revision*.
9. Adachi, T., Mehrotra, D., Clapham, K.R., El-Hely, O., Park, S., Hu, J., Kang, Y., Hwangbo, C., Kojima, Y., Lee, A., Kim, J., **Morrison, A.R.**, Papangeli, I., Chun, H.J. “Endothelial microRNA-355 promotes a vascular and metabolic inflammatory milieu.” *Nat Comm*, 2022 *In Revision*.

ABSTRACTS

[§] Trainee/Mentee

1. **A.R. Morrison**, J. Moss, D. Greiner, J. Mordes, A. Rossini, R. Bortell, “Purification of a Recombinant Form of ART2 [abstract].” Insights into Signal Transduction, A Symposium to Honor Martha Vaughan, NIH; March 2001; Bethesda, MD.
2. **A.R. Morrison**, J. Moss, D. Greiner, J. Mordes, A. Rossini, R. Bortell, “Auto-ADP-ribosylation of Purified ART2 [abstract].” New England Autoimmune Diabetes Conference; Nov 2001; Woods Hole, MA.
3. **A.R. Morrison**, J. Moss, C. Farrell, D. Greiner, J. Mordes, A. Rossini, R. Bortell, “Polymerizing ADP ribose with ART2 [abstract].” New England Autoimmune Diabetes Conference; Nov 2004; Woods Hole, MA.
4. **A.R. Morrison**, K. Ike, T. Yarovinsky, J.R. Bender. Chemokine-Driven β_2 Integrin Adhesion Influences Macrophage Cytokine Gene Expression and Atherosclerosis Lesion Composition Through an Induced Rac2-Myosin IIA Interaction [abstract]. Arteriosclerosis, Thrombosis, and Vascular Biology 2012 Scientific Sessions; 2012 Apr 18-20; Chicago, IL: Abstract No 78. – *Oral presentation, Young Investigator Travel Award ATVB 2012 (Morrison)*.
5. **A.R. Morrison**, T.O. Yarovinsky, B.D. Young, F. Moraes, T.D. Ross, N. Ceneri, J. Zhang, Z.W. Zhuang, A.J. Sinusas, M.A. Schwartz, M. Simons, J.R. Bender. Chemokine-coupled β_2 Integrin-Dependent mRNA Stabilization in Macrophages Provides the Principle Source of VEGF-A in Ischemia-Induced Arteriogenesis. Lymphatic Circulation in Health and Disease, Yale School of Medicine and North American Vascular Biology Organization; 2013 May 3-4; New Haven, CT: Abstract 20-15E.
6. **A.R. Morrison**, T.O. Yarovinsky, B.D. Young, F. Moraes, T.D. Ross, N. Ceneri, J. Zhang, Z.W. Zhuang, A.J. Sinusas, M.A. Schwartz, M. Simons, and J.R. Bender. Macrophage β_2 Integrins Signal Through Nonmuscle Myosin IIA to Modulate VEGF-A Protein Levels During Ischemia-induced Arteriogenesis. Northwestern Cardiovascular Young Investigators' Forum, Northwestern University Feinberg School of Medicine; 2013 September 19-22; Chicago, IL.
7. **A.R. Morrison**, T.O. Yarovinsky, B.D. Young, F. Moraes, T.D. Ross, N. Ceneri, J. Zhang, Z.W. Zhuang, A.J. Sinusas, M.A. Schwartz, M. Simons, and J.R. Bender. Chemokine-coupled β_2 Integrin-dependent mRNA Stabilization in Macrophages Modulates VEGF-A Protein Levels During Ischemia induced Arteriogenesis. American Heart Association Scientific Sessions; 2013 November 16-20; Dallas, TX.

8. B.D. Young, J. Zhang, **A.R. Morrison**, A. Mohan, N.D. Robinson, T.O. Yarovinsky, and J.R. Bender. β 2 Integrin-dependent HuR-mediated mRNA Stabilization in Macrophages is Required for Lymphatic Vessel Formation in Inflammatory Lymphangiogenesis. American Heart Association Scientific Sessions; 2013 November 16-20; Dallas, TX.
9. N. Ceneri[§], B. Young, J.R. Bender, **A.R. Morrison**. Rac2 deficiency Augments Macrophage IL-1 β Production, Atherosclerotic Plaque Inflammation, and Calcific Atherosclerosis [abstract]. Arteriosclerosis, Thrombosis, and Vascular Biology 2015 Scientific Sessions; 2015 May 7-9; San Francisco CA: Abstract No 291. – *Oral presentation, Young Investigator Travel Award ATVB 2015 (Ceneri, mentee)*.
10. B.D. Young, J. Zhang, A. Mohan, N.D. Robinson, L. James, V. Ramgolam, T.O. Yarovinsky, **A.R. Morrison**, J.R. Bender. HuR and microRNA-128 Competitively Regulate Vascular Endothelial Growth Factor C to Modulate Inflammatory Lymphangiogenesis [abstract]. Arteriosclerosis, Thrombosis, and Vascular Biology 2015 Scientific Sessions; 2015 May 7-9; San Francisco CA: Abstract No 429.
11. N. Ceneri[§], B.D. Young, L. Zhao, S. Coskun, H. Vasavada, T.O. Yarovinsky, K. Ike, R. Pardi, K.Hirschi, M. Sadeghi, J.R. Bender, **A.R. Morrison**. Rac2-driven Macrophage IL-1 β Expression Regulates Inflammatory Calcification of Atherosclerotic Plaque. North American Vascular Biology Organization Annual Meeting; 2015 October 18-22; Hyannis, MA. Abstract 2711.
12. N.Ceneri[§], L. Zhao[§], A. Healy[§], **A.R. Morrison**. Macrophage Dicer Modulates M1/M2 Phenotypic Transition to Promote Arteriogenesis in Response to Injury. Yale Vascular Biology & Therapeutics Annual Retreat; 2015 October 21; New Haven, CT.
13. L. Zhao[§], N. Ceneri[§], B. Young, S. Coskun, H. Vasavada, T. Yarovinsky, K. Ike, K. Hirschi, M. Sadeghi, J. Bender, and **A.R. Morrison**. Macrophage Racs Modulate IL-1 β dependent calcification in Atherosclerotic Plaque. Yale Vascular Biology & Therapeutics Annual Retreat; 2015 October 21; New Haven, CT.
14. N. Ceneri[§], L. Zhao[§], B.D. Young, A. Healy[§], S. Coskun, H. Vasavada, T.O. Yarovinsky, K. Ike, R. Pardi, L. Qin, J. Meadows, G. Tellides, K. Hirschi, R. Soufer, M. Sadeghi, J.R. Bender, **A.R. Morrison**. Rac2 is a key modulator of IL-1 β -dependent Atherosclerotic Plaque Calcification Regulates Calcification of Atherosclerotic Plaques By Modulating Macrophage IL-1 β Expression [abstract]. Arteriosclerosis, Thrombosis, and Vascular Biology 2016 Scientific Sessions; 2016 May 5-7; Nashville TN: Abstract No 655.
15. A. Healy[§], N. Ceneri[§], G. Bailey[§], J. Meadows, R. Soufer, M. Sadeghi, and **A. R. Morrison**. Statins Modulate Rac-dependent IL-1 β Expression to Influence Calcium Composition [abstract]. Arteriosclerosis, Thrombosis, and Vascular Biology 2016 Scientific Sessions; 2016 May 5-7; Nashville TN: Abstract No 650. – *Oral presentation, Young Investigator Travel Award ATVB 2016 (Healy, mentee)*.
16. A. Healy[§], N. Ceneri[§], G. Bailey[§], J. Meadows, R. Soufer, M. Sadeghi, and **A. R. Morrison**. Statins Modulate Rac1-dependent IL-1beta Expression to Influence Plaque Calcium Composition [abstract]. Unraveling Vascular Inflammation: From Immunology to Imaging; 2016 October 24-25; Bethesda, MD.
17. N. Ceneri[§], L. Zhao[§], B. D. Young, A. Healy[§], S. Coskun, H. Vasavada, T. Yarovinsky, K. Ike, R. Pardi, L. Qin, G. Tellides, K. Hirschi, J. Meadows, R. Soufer, M. Sadeghi, J. R. Bender, **A. R. Morrison**. Rac2 Regulates IL-1beta-dependent Atherosclerotic Calcification [abstract]. Unraveling Vascular Inflammation: From Immunology to Imaging; 2016 October 24-25; Bethesda, MD.

18. N. Ceneri[§], L. Zhao[§], B. D. Young, A. Healy[§], S. Coskun, H. Vasavada, T. Yarovinsky, K. Ike, R. Pardi, L. Qin, G. Tellides, K. Hirschi, J. Meadows, R. Soufer, M. Sadeghi, J. R. Bender, **A. R. Morrison**. Rac2 Regulates IL-1 β -dependent Atherosclerotic Calcification [oral presentation]. International Vascular Biology Meeting; 2016 November 2; Boston, MA. – *Oral presentation (Healy, mentee)*.
19. Abigail Healy[§], Nicolle Ceneri[§], Chris Mantsounga[§], **Alan R. Morrison**. “Rac-signaling as a Critical Determinant of IL-1 β -dependent Atherosclerotic Calcification”. Arteriosclerosis, Thrombosis and Vascular Biology | Peripheral Vascular Disease Scientific Sessions, Minneapolis, Minnesota; May 2017.
20. Chris Mantsounga[§], Abigail Healy[§], Nicolle Ceneri[§], **Alan R. Morrison**. “Macrophage Dicer Expression is Required for VEGF-A-induced Arteriogenesis”. Arteriosclerosis, Thrombosis and Vascular Biology | Peripheral Vascular Disease Scientific Sessions, Minneapolis, Minnesota; May 2017.
21. Abigail Healy[§], Nicolle Ceneri[§], Chris Mantsounga[§], **Alan R. Morrison**. “IL-1 - driven Atherosclerotic Calcification is mediated by Macrophage Rac”. Rhode Island NIH IDeA Symposium, Providence, RI; March 2017.
22. Chris Mantsounga[§], Abigail Healy[§], Nicolle Ceneri[§], **Alan R. Morrison**. “Macrophage Dicer Expression is Required for VEGF-A-induced Arteriogenesis”. Rhode Island NIH IDeA Symposium, Providence, RI; March 2017.
23. E. Sharma[§], J.L. Christensen[§], A. Gorvitovskaia[§], W. Wu, G. Choudhary, **A. R. Morrison**. “The Impact of Slice Thickness on Agatston-Based Coronary Artery Calcium Scoring in Lung Cancer Screening CT.” ACC.18, Orlando, FL; March 2018. Abstract # 313.
24. C. Mantsounga[§], A. Healy[§], J. Berus[§], J. Watts, H. Chun, G Choudhary, **A. R. Morrison**. “Disruption of HuR-mediated VEGF-A mRNA stabilization as a Mechanism of Age-related Defects in Arteriogenesis.”. Arteriosclerosis, Thrombosis and Vascular Biology | Peripheral Vascular Disease Scientific Sessions, San Francisco, California; May 2018. Abstract #489.
25. A. Healy[§], J. Berus[§], J. Watts, C. Mantsounga[§], J. Neverson[§], R. Nilson, G. Choudhary, **A. R. Morrison**, “Statins alter Rac-dependent IL-1 β expression and subsequent Plaque Calcification,” Arteriosclerosis, Thrombosis and Vascular Biology | Peripheral Vascular Disease Scientific Sessions, San Francisco, California; May 2018. Abstract #439.
26. Chris S. Mantsounga[§], Joshua Berus[§], Jerome Watts, Abigail Healy[§], Nicole Ceneri[§], Hyung Chun, Gaurav Choudhary, **Alan R. Morrison**. Disruption of HuR-mediated VEGF-A mRNA stabilization as a Mechanism of Age-related Defects in Arteriogenesis. National VA Research Week Symposium VAPMC, Providence, May 2018.
27. J. Berus[§], J. Watts[§], C. Mantsounga[§], A. Healy[§], G. Choudhary, **A.R. Morrison**. “Macrophage Rac1 is critical for Calcific Aortic Valve Stenosis Progression.” National VA Research Week Symposium, VAPMC, Providence, RI; May 2018.
28. J.L. Christensen[§], E. Sharma[§], A.Y, Gorvitovskaia[§], J. Neverson[§], M. Assali[§], J.P. Watts Jr[§], W.C. Wu, G. Choudhary, **A.R. Morrison**. “Quantifying the number of calcified lesions in the coronary arteries increases predicative value of coronary artery calcium scoring for outcomes.” National VA Research Week at Providence VA Medical Center, Providence, Rhode Island; May 2018. – *Best Poster Award VA Research Day 2018 (Christensen, mentee)*.
29. Chris S. Mantsounga[§], Joshua Berus[§], Jerome Watts[§], Abigail Healy[§], Nicole Ceneri[§], Hyung Chun, Gaurav Choudhary, **Alan R. Morrison**. “Disruption of HuR-mediated

- VEGF-A mRNA stabilization as a Mechanism of Age-related Defects in Arteriogenesis.” NIH Rhode Island Symposium, Providence, RI; June 2018. Abstract.
30. J.L. Christensen[§], E. Sharma[§], A.Y. Gorvitovskaia[§], J.P. Watts Jr[§], M. Assali[§], J. Neverson[§], W.C. Wu, G. Choudhary, **A.R. Morrison**. “The number of calcified lesions increases predictive value of lung cancer screening CTs for outcomes. Rhode Island NIH IDeA Symposium, Providence, Rhode Island; June 2018.
31. C.S. Mantsounga[§], A. Healy[§], J. Berus[§], J. Watts[§], H. Chun, G. Choudhary and **A.R. Morrison**, “A Novel Mechanism of Age-Related Decline in Inflammatory Arteriogenesis.” NAVBO 2018, Newport, Rhode Island; October 2018.
32. A. Healy[§], C. Mantsounga[§], J. Berus[§], J. Christensen[§], J. Watts[§], N. Ceneri[§], R. Nilson[§], J. Neverson[§], G. Choudhary, **A.R. Morrison**, “Statins Disrupt Rac1 Regulation Leading to Increased Atherosclerotic Calcification.” NAVBO Vascular Biology 2018, Newport, Rhode Island; October 2018. – *Oral presentation and Best Poster Award NAVBO Vascular Biology 2018, (Berus, mentee).*
33. A. Healy[§], J. Watts[§], J. Berus[§], C. Mantsounga[§], and **A.R. Morrison**, “Macrophage Non-Muscle Myosin IIA (NMMIIA) is required for Atherosclerotic Calcification.” NAVBO 2018, Newport, Rhode Island; October 2018.
34. W. Yu[§], J. Christensen[§], S. Tan[§], A. Chu[§], W.C. Wu, G. Choudhary, **A. R. Morrison**. “Gout is Associated with Increased Risk of Coronary Artery Calcification.” ACC 2019, New Orleans, LA; March 2019. Abstract # 316.
35. M. Assali[§], J. L. Christensen[§], W.C. Wu, G. Choudhary, N. Shah, and **A. R. Morrison**, “Multi-ethnic Study of Atherosclerosis Score derived from Lung Cancer Screening CT in Conjunction with The Atherosclerosis Cardiovascular Disease Score to Predict Cardiovascular Outcomes.” ACC 2019, New Orleans, LA; March 2019. Abstract #346.
36. S. Tan[§], J. Christensen[§], A. Chu[§], W. Yu[§], M. Assali[§], F. Vargas[§], W.C. Wu, G. Choudhary, **A.R. Morrison**, “Aortic Valve Calcification on Lung Cancer Screening CT Predicts Aortic Valve Stenosis and Mortality.” AHA Vascular Discovery: From Genes to Medicine 2019 Scientific Sessions, Boston, MA; May 14-16, 2019. Abstract #365.
37. A.J. Chu[§], J.L. Christensen[§], S. Tan[§], W. Yu[§], F. Vargas[§], M. Assali[§], W.C. Wu, G. Choudhary, and **A.R. Morrison**, “Quantifying the Number of Calcified Lesions Increases Predictive Value of Coronary Artery Calcium Scoring for Outcomes.” AHA Vascular Discovery: From Genes to Medicine 2019 Scientific Sessions, Boston, MA; May 14-16, 2019. Abstract # 579.
38. Mantsounga C.S. [§], Neverson J. [§], Berus J.M., [§] Lee C. [§], Healy A. [§], Ceneri N. [§], Choudhary G. and Morrison A.R. “Dicer Modulation as a Mechanism of Age-related Dysfunction in Arteriogenesis.” AHA Vascular Discovery: From Genes to Medicine 2020 Scientific Sessions, Boston, MA; May 5-7 2020. Abstract #409. *Virtual oral presentation AHA Vascular Discovery 2020 (Mantsounga, mentee).*
39. Abigail L Healy[§], Joshua M Berus[§], Jared L. Christensen[§], Cadence Lee[§], Chris Sorel Mantsounga[§], Willie Dong[§], Jerome P. Watts Jr[§], Maen Assali[§], Nicolle Ceneri[§], Rachael Nilson[§], Jade Neverson[§], Wen-chih Hank Wu, Gaurav Choudhary, **Alan R Morrison**. “Statins Disrupt Macrophage Rac1 Regulation Leading to Increased Atherosclerotic Plaque Calcification.” AHA Vascular Discovery: From Genes to Medicine 2020 Scientific Sessions, Boston, MA; May 5-7 2020. Abstract # 290. *Virtual oral presentation AHA Vascular Discovery 2020 (Healy, mentee).*
40. Mantsounga C.S.[§], Neverson J.[§], Berus J.M.[§], Lee C.[§], Bozadjan R., Choudhary G., **Morrison A.R.** “Reprogramming Macrophages to Improve Wound Healing in Diabetes.”

- ADA Scientific Sessions; June 12-16, 2020. Abstract # 2020-A-5089-Diabetes. Presentation: 591-P. – *Virtual oral presentation ADA 2020 (Mantsounga, mentee).*
41. Chung H.E., Chen J., Christensen J.L., Ghosalker D.S., Soares C., Chu A., Wu W.C., Choudhary G., **Morrison, A.R.** “Aortic Valve Calcification is Prognostic for Mild Cognitive Impairment.” AHA Scientific Sessions: Nov. 2020. Abstract # 16664. Virtual.
42. H.E. Chung[§], M. Ramani[§], D.S. Ghosalkar[§], A.Chu[§], W.C. Wu, G. Choudhary, **A.R. Morrison.** “Pulmonary Artery to Aorta Diameter Ratio Derived from Lung Cancer Screening CT is Associated with All-Cause Mortality.” American College of Cardiology: May 2021. Abstract #1362. Virtual Conference.
43. Hojune Chung[§], D. Ghosalkar[§], A. Chu[§], W.C. Wu , G. Choudhary , and **A.R. Morrison.** “Duration of Statin Therapy is Associated with Coronary Artery Calcification in Patients without History of Obstructive CAD. American College of Cardiology: May 2021. Abstract #1447. Virtual Conference.
44. C. Lee[§], C. Mantsounga[§], J.C. Neverson[§], S. Sharma[§], R. Carley[§], G Choudhary, **A.R. Morrison.** “Macrophage IL-1 β Expression and Signaling to Vascular Smooth Muscle Leads to Atherosclerotic Calcification.” Vascular Biology, NAVBO: October 2021 Abstract #627. Virtual Conference. *Oral presentation, Nano Talk, NAVBO 2021 (Lee, mentee)*
45. R. Carley[§], C. Lee[§], C. Mantsounga[§], S. Sharma[§], J. Neverson[§], C. Yerxa[§], G. Choudhary, **A.R. Morrison.** “Macrophage Rac1 Signaling Leads to Atherosclerotic Calcification.” Vascular Biology, NAVBO: October 2021 Abstract # 629. Virtual Conference. *Oral presentation NAVBO 2021 (Carley, mentee)*
46. C. Mantsounga[§], S. Sharma[§], J. Neverson[§], C. Lee[§], R. Carley[§], G. Choudhary, **A.R. Morrison.** “Macrophage IL-1 β -IL1R Signaling Axis in Wound Healing.” Vascular Biology, NAVBO: October 2021 Abstract # 636. Virtual Conference.
47. H. Chung, D. Ghosalkar, A. Chu, J. R. Heath, T. Ho, W.C. Wu, G. Choudhary, **A.R. Morrison.** “Pulmonary artery to aorta ratio derived from lung cancer screening CT is associated with COPD hospitalization.” American College of Cardiology: April 2022. Abstract Control #13761. Washington, DC.
48. K.S. Ngamdu[§], D. Ghosalkar[§], H. Chung[§], C. Lee[§], T. Ho[§], A. Chu[§], M. Baig[§], W.C. Wu, G. Choudhary, **A.R. Morrison.** “Increasing duration of statin therapy is associated with high coronary artery calcium score.” American College of Cardiology: April 2022. Abstract Control #8883. Washington, DC.
49. C. Mantsounga[§], S. Sharma[§], C. Lee[§], C. Butler[§], R. Carley[§], G. Choudhary, **A.R. Morrison.** “Macrophage IL-1 β Dependent Angiogenesis During Wound Healing.” AHA Vascular Discovery: From Genes to Medicine 2022. May 12-14, 2022. Poster #335
50. C. Lee[§], R. Carley[§], C[§]. Mantsounga[§], S. Sharma[§], J. Neverson[§], C. Butler[§], G. Choudhary, **A.R. Morrison.** “Macrophage Rac1-IL-1 β Signaling Axis Promotes Atherosclerotic Calcification.” AHA Vascular Discovery: From Genes to Medicine 2022 Scientific Sessions, May 12-14, 2022. Control#: 22-A-427-AHA-VD, Poster#205 *Emerging Scientist Award for Women Award Winner and Outstanding Achievement for Master’s Degree Student Brown University (C. Lee, mentee)*
51. R. Carley[§], C. Lee[§], C. Mantsounga[§], S. Sharma[§], J. Neverson[§], J. Pierce[§], E. Amelotte[§], C. Butler[§], G. Choudhary, A.R. Morrison “Immune mediated mechanisms of macrophage Rac1-IL-1 β signaling leading to atherosclerotic calcification.” Vasculata. July 18-21, 2022. Poster # 1177-000120.
52. S. Sharma[§], C. Mantsounga[§], J. Neverson[§], C. Lee[§], J. Pierce[§], E. Amelotte[§], R. Carley[§], C. Butler[§], G. Choudhary, A. Morrison. “Macrophage IL-1B Drives

Angiogenesis During Wound Healing.” NAVBO Vasculata 2022, July 19, 2022. Abstract #1177-000117, Poster #T03

53. C. Lee[§], R. Carley[§], J. Berus[§], C. Mantsounga[§], S. Sharma[§], J. Neverson[§], E. Amelotte[§], J. Pierce[§], C. Butler[§], G. Choudhary, R. Olson, A.R. Morrison. “Macrophage Rac1-NF-kB-IL-1 β Atherosclerotic Signaling in a Novel Humanized ACE2 Mouse Model of SARS-CoV-2 Infection.” 28th Annual Golden Stethoscope Awards, September 8, 2022. (*Lee, Oral presentation, GSA finalist and winner*)

54. S. Sharma[§], C. Mantsounga[§], C. Lee[§], J. Neverson[§], J. Pierce[§], E. Amelotte[§], R. Carley[§], C. Butler[§], G. Choudhary, A. Morrison. “Macrophage IL-1B-VEGF-A Signaling Axis Drives Angiogenesis During Wound Healing.” IVBM 2022, October 15, 2022. Prog# 2072, Abstract #1177-000570, Poster #72

55. C. Lee[§], R. Carley[§], J. Berus[§], C. Mantsounga[§], S. Sharma[§], J. Neverson[§], E. Amelotte[§], J. Pierce[§], C. Butler[§], G. Choudhary, A.R. Morrison. “Macrophage Rac1-NF- κ B-IL-1 β Atherosclerotic Signaling Axis Upstream of ACE2 Expression and SARS-CoV-2 Virulence.” IVBM 2022, San Francisco. October 15, 2022. Program Number 2037, Poster #37. (*Lee, Oral presentation, NAVBO InFocus session, August 24, 2023*)

56. R. Carley, C. Lee, C. Mantsounga, J. Berus, S. Sharma, J. Pierce, C. Parry, E. Amelotte, C. Butler, G. Choudhary, A.R. Morrison “A Rac1-NF-kB transcriptional axis regulates IL-1 β during atherosclerotic calcification” NAVBO Vascular Biology 2023, October 18, 2023. Abstract #97 Poster W-01.

57. S. Sharma[§], C. Lee[§], J. Neverson[§], J. Pierce[§], E. Amelotte[§], R. Carley[§], C. Butler[§], E. Pineda, C. Parry[§], R. Mendez[§], O. Caballero[§], G. Choudhary, C. Mantsounga, A. Morrison. “Macrophage IL-1B Driven Angiogenesis in Wound Healing.” NISBRE 2022, December 13, 2022. Abstract, Poster #49

58. S. Sharma[§], C. Mantsounga[§], C. Lee[§], J. Neverson[§], J. Pierce[§], E. Amelotte[§], R. Carley[§], C. Butler[§], G. Choudhary, A.R. Morrison. “Impaired Macrophage IL-1beta-Dependent Wound Healing in the Context of Diabetes” AHA Vascular Discovery: From Genes to Medicine 2023 Scientific Sessions, May 10-13, 2023. Abstract #661.

59. R. Carley, C. Lee, J. Berus, C. Mantsounga, S. Sharma, O. Caballero, C. Parry, E. Pineda, J. Pierce, E. Amelotte, C. Butler, G. Choudhary, A.R. Morrison. “Macrophage Rac1 as a transcriptional co-factor for NF-kB-driven IL-1 β expression and consequent atherosclerotic calcification”. AHA Vascular Discovery: From Genes to Medicine 2023 Scientific Sessions, May 10-13, 2023. Poster #642.

60. R. Carley, C. Lee, C. Mantsounga, S. Sharma, O. Caballero, C. Parry, , J. Pierce, E. Amelotte, C. Butler, G. Choudhary, A.R. Morrison. “Rac1 and NF-kB Signaling Regulate Macrophage Expression of IL-1 β and Atherosclerotic Calcification: Implications for Targeted Therapies. Gordan Research Seminar: Atherosclerosis, June 17, 2023. Poster M-08. (*Carley, Oral presentation, NAVBO Travel Award*)

61. C. Lee[§], C. Mantsounga[§], S. Sharma[§], R. Carley[§], E. Amelotte[§], J. Pierce[§], C. Butler[§], G. Choudhary, R. Olson, A.R. Morrison. “A Novel Humanized ACE2 Mouse Model for Evaluating COVID-19 Infection in Cardiovascular Disease.” AHA Vascular Discovery: From Genes to Medicine 2023 Scientific Sessions, May 10-13, 2023. Poster #640. ATVB, October 2023, Abstract #262. doi: 10.1161/atvb.43.suppl_1.262 (https://www.ahajournals.org/doi/10.1161/atvb.43.suppl_1.262)

62. C. Lee[§], R. Carley[§], S. Sharma[§], J. Pierce[§], E. Amelotte[§], C. Butler[§], C. Mantsounga, G. Choudhary, R. Olson, A.R. Morrison. “Validation of a Novel Humanized ACE2 Mouse Model of SARS-CoV-2 Infection for Evaluating COVID-19 and Cardiovascular Comorbidities.” 30th Annual Golden Stethoscope Awards, IAMA, September 22, 2023. (*Lee, Oral presentation, Golden Stethoscope Award finalist and winner*).

63. C. Mantsounga, O. Caballero, C. Lee, S. Sharma, J. Pierce, C. Parry, E. Amelotte, R. Carley, C. Butler, G. Choudhary, A.R. Morrison. "Age-related increases in DNA methylation impair HuR-mediated VEGF-A mRNA stability and consequent inflammatory arteriogenesis." *Vascular Biology* 2023, October 15-18, 2023. Abstract #237.
64. Cadence Lee, Rachel Carley, Joshua Berus, Elizabeth Amelotte, Sheila Sharma, Julia Pierce, Chris Mantsounga, Celia Butler, Alan R. Morrison. "Atherosclerotic Calcification Requires Macrophage IL-1 β Expression" NAVBO *Vascular Biology* 2023, October 15-19, 2023. Abstract #124
65. C. Lee^s, A.R. Morrison. "Validation of a Novel Humanized ACE2 Mouse Model of COVID-19." American Medical Association (AMA) 2023 Research Challenge, October 18-20, 2023.

SCHOLARLY WORK PUBLISHED IN OTHER MEDIA

PEER-REVIEWED N.A.

NON-PEER-REVIEWED N.A.

INVITED PRESENTATIONS

National/International

1. Arteriosclerosis, Thrombosis, and Vascular Biology 2012 Scientific Sessions, "Chemokine-Driven β 2 Integrin Adhesion Influences Macrophage Cytokine Gene Expression and Atherosclerosis Lesion Composition Through an Induced Rac2-Myosin IIA Interaction," Chicago, IL, Invited, 4/2012; national.
2. CardioPulmonary Vascular Biology (CPVB) COBRE External Advisory Committee Meeting, "Therapeutic Targeting of IL-1 β -Based Mechanisms in Calcific Aortic Valve Disease," Alpert Medical School at Brown University, Pilot Research Study Presentation. 10/2016; regional and national.
3. NAVBO International Vascular Biology Meeting 2016, "Rac2 Regulates IL-1 β -dependent Atherosclerotic Calcification," Boston, Invited Oral Presentation. 11/2016; national/international.
4. VA Career Development (CADE) Capstone Award Program, "Calcific Atherosclerosis is Mediated by Macrophage Adhesion Signaling," VA Central Office, Washington DC, Invited Presentation, 07/2017; national.
5. 2018 Rhode Island IDEa Symposium, "Statins Disrupt Rac1 Regulation Leading to Increased Atherosclerotic Calcification," Brown University, Providence RI, Invited Presentation, 07/2017; national.
6. Seminars in Vascular Biology, "Macrophage Mediators of Vascular Calcification," Harvard Medical School, Boston MA, Invited Seminar, 11,2018; national.
7. CardioPulmonary Vascular Biology COBRE External Advisory Committee Meeting, "IL-1 β Signaling Promotes Atherosclerotic Calcification and Cardiovascular Risk." Alpert Medical School at Brown, Virtual, Invited Speaker, 09/2020; regional and national.
8. Multi-COBRE Seminar Series, "Rac1-IL-1 β Signaling Axis in Atherosclerotic Calcification." Virtual Format, Invited Speaker, 11/2020; national.
9. Keynote Address VA Research Week 2022, "Modeling Inflammatory Mechanisms of Vascular Disease in Order to Improve the Health and Well-being of US Veterans," Providence VA Medical Center, Hybrid format (In-person and virtual), Invited Speaker, 5/2022; national

Regional

1. Cardiovascular Grand Rounds, "Inflammatory Macrophage Signaling that Modulates Ischemia-induced Arteriogenesis; Potential for New Targeted Therapeutics," Geisel School of Medicine at Dartmouth, Invited, 11/2014; regional.
2. Cardiovascular Grand Rounds, "Inflammatory Macrophage Signaling that Modulates Ischemia-induced Arteriogenesis; Potential for New Targeted Therapeutics," Geisel School of Medicine at Dartmouth, Invited, 11/2014; regional.
3. Cardiometabolic Research Seminar, "Macrophage Signaling Pathways Critical to Vascular Remodeling," NYU Langone Medical Center, Invited, 12/2014; regional.
4. Whitaker Cardiovascular Institute Seminar Series, Macrophage Signaling Pathways Critical to Vascular Remodeling, Boston University Medical Center, Invited, 2/2015; regional.
5. Cardiology Section and Department of Medicine Guest Lecture, "Inflammatory mechanisms of calcification; potential for alternative therapeutic strategies," VA Boston Healthcare System, Invited, 6/2015; regional.
6. Cardiovascular Research Center Seminar, "Inflammatory mechanisms of calcification; potential for alternative therapeutic strategies," Alpert Medical School at Brown and VA Providence Healthcare System, Invited, 6/2015; regional.
7. Cardiovascular Grand Rounds, "Inflammation and Coronary Artery Calcification," Alpert Medical School at Brown University, Invited Speaker. 05/2017; regional.
8. Cardiovascular Research Center Seminar, "A Novel Mechanism of Age-Related Decline in Inflammatory Arteriogenesis," Alpert Medical School at Brown and VA Providence Healthcare System, Invited, 12/2018; regional.
9. CPVB COBRE bi-weekly Seminar, "Uncovering Mechanisms of Age-Related Decline in Angio/Arteriogenesis." Alpert Medical School at Brown and VA Providence Healthcare System, Invited, 01/2019; regional.
10. CPVB COBRE bi-weekly Seminar, "Rac1-IL-1beta Signaling Axis in Atherosclerotic Calcification." Alpert Medical School at Brown and VA Providence Healthcare System, Invited, 02/2020; regional.
11. LifeSpan CVI Research Seminar Series, "Rac1-IL-1B Signaling Axis in Atherosclerotic Calcification." Brown University and Rhode Island Hospital, Invited, May 2020; regional.
12. Brown Translational Research Symposium, "Inflammation and Vascular Remodeling; Can it be Good?" Virtual Format, Invited keynote Address, 01/2021; regional.
13. Cardiovascular Grand Rounds, "Inflammatory Mediators of Vascular Calcification," West Roxbury VA Medical Center, Harvard Medical School and Boston University School of Medicine, Invited, 05/2021; regional.
14. CPVB COBRE bi-weekly Seminar, "Mechanisms of Atherosclerotic Calcification: Macrophage Rac1 Chaperones NF- κ B to the IL-1 β Promoter." Alpert Medical School at Brown and VA Providence Healthcare System, Invited, 09/2021; regional.
15. Cardiovascular Grand Rounds, "Inflammatory Mediators of Vascular Calcification," Hartford Hospital and UConn Medical School, Invited, 05/2021; regional.

Local

1. VA Cardiovascular Medicine Symposium, "Cardiac CT Angiography for CAD," VA Connecticut Healthcare System, Invited, 3/2015; local.
2. Fifteenth Annual Retreat of Vascular Biology & Therapeutics Program with Cardiovascular Medicine, "Racs Regulate Calcification of Atherosclerotic Plaque By Modulating Macrophage IL-1 β Expression," Yale University School of Medicine, Invited, 11/2015; local.
3. Cardiovascular Fellowship Program, "Coronary Artery Calcification," Alpert Medical School at Brown University, Invited Lecture. 06/2016; local.
4. Cardiovascular Epidemiology Research Meeting, "Cardiovascular Risk Assessment using Lung Cancer Screening CT," Providence VA Medical Center, Invited Research Presentation. 06/2016; local.
5. Cardiovascular Fellowship Program, "Molecular Imaging in Cardiovascular Disease," Alpert Medical School at Brown University, Invited Lecture. 10/2016; local.
6. Molecular Pharmacology Physiology and Biotechnology Seminar Series. "Rac2 is a key Modulator of Macrophage IL-1B-dependent Atherosclerotic Plaque Calcification," Alpert Medical School at Brown University, Invited Research Presentation. 10/2016; local.
7. Surgical Research Seminar Series, "Racs Modulate Vascular Calcification by Regulating Macrophage IL-1B Production," Alpert Medical School at Brown University, Invited Research Presentation. 12/2016; local.
8. Current Updates in Medicine, Department of Medicine Seminar Series. "Coronary Artery Calcification," Providence VA Medical Center, Invited Lecture. 02/2017; local.
9. Pathobiology Seminar Series, "Racs Modulate Vascular Calcification by Regulating Macrophage IL-1B Production," Alpert Medical School at Brown University, Invited Research Presentation. 02/2017; local.
10. Cardiovascular Grand Rounds, "Coronary Artery Calcification," Providence VA Medical Center, Providence RI, Invited Speaker. 04/2018; local.
11. Internal Medicine Residency Program, "Coronary Artery Calcification," Alpert Medical School at Brown University, Invited Lecture. 10/2018; local.
12. Vascular Research Laboratory, "Inflammatory Macrophages and Mechanisms of Impaired Wound Healing in Diabetes." Alpert Medical School at Brown and VA Providence Healthcare System, Invited, 03/2019; local.
13. Brown University MCB Graduate Program Seminar, "Uncovering Mechanisms of Age-Related Decline in Angio/Arteriogenesis." Brown University, Invited, 12/2019; local.
14. MPPB Graduate Program Virtual Retreat, "Macrophage IL-1B Promotes angiogenesis by Autocrine NF-kB and STAT3-mediated Transcription of Proangiogenic VEGF-A." Brown University, Invited, May 2020; local.
15. VA VRL bi-weekly Seminar Series, "Macrophage IL-1B Promotes angiogenesis by Autocrine NF-kB and STAT3-mediated Transcription of Proangiogenic VEGF-A." Alpert Medical School at Brown and VA Providence Healthcare System, Invited, 07/2020; local.
16. Brown Translational Research T35 Seminar for Summer Medical Student Research, "Inflammation, Vascular Remodeling, and Tissue Regeneration" Virtual Format, Invited, 06/2021; local.
17. Cardiovascular Grand Rounds, "Inflammatory Mediators of Vascular Calcification," Providence VA Medical Center, Alpert Medical School of Brown University, Invited, 12/2021; local.

18. VA VRL bi-weekly Seminar Series, "Mechanisms of age-related impairment in angio/arteriogenesis." Alpert Medical School at Brown and VA Providence Healthcare System, Invited, 09/2022; local.

GRANTS

Prior:

1. Agency: NIH/NHLBI
I.D.# 5F32HL097422
Title: The Rac-2-induced macrophage proteome and vascular pathology
P.I.: Alan R. Morrison
Percent effort: 80%
Total costs for project period: \$167,826
Project period: 07/01/2009-06/30/2012
2. Agency: Swedish Orphan Biovitrum AB
I.D.# MTI.15047
Title: Calcification of Atherosclerotic Plaque Depends on IL-1 Signaling
P.I. Alan R. Morrison
Percent effort: 5%
Total projected costs: \$5,000
Project Period: 03/01/2015 - 2/28/2016
3. Agency: Actelion ENTELLIGENCE Young Investigator Program
Title: Development of microRNA-based therapeutic strategies for pulmonary artery hypertension
P.I. Alan R. Morrison
Total projected costs: \$100,000
Project Period: 08/01/2015-07/31/2016
4. Agency: NIH NIGMS P20GM103652 (Director, Sharon Rounds)
NIH Endothelial Injury and Repair: CPVB COBRE PILOT
I.D.# P20GM103652 (Director, Sharon Rounds)
Title: Therapeutic Targeting of IL-1 β -based Mechanisms in Calcific Aortic Valve Disease
Pilot Project P.I. Alan R. Morrison
Percent effort: 12.5%
Total Project Costs: \$50,000
Project Period: 06/01/2016-05/31/2017
5. Agency: VA-ORD CDA-2
I.D.# 5IK2BX002527
Title: Calcific Atherosclerosis is Mediated by Macrophage Adhesion Signaling
P.I. Alan R. Morrison
Percent effort: 30%
Total projected costs: \$750,000
Project Period: 10/01/2014 - 09/30/2018
6. Agency: NIH NIGMS P20GM103652 (Director, Sharon Rounds)
NIH Endothelial Injury and Repair: CPVB COBRE
Title: Statins Influence Cardiovascular Outcomes by Modulation of Atherosclerotic Plaque Calcium Density
Project P.I.: Alan R. Morrison (Project P.I.)
Percent effort: 20%
Total projected costs: \$150,000

7. Project Period: 06/01/2017-05/31/2018
Agency: NHLBI 1F31HL147466
Title: Macrophage Rac1 Signaling is required for the progression of Calcific Aortic Valve Disease and consequent Aortic Valve Stenosis
P.I. Joshua Berus (Graduate Student)
Role: Sponsor/Primary Mentor (Morrison)
Percent effort: 10%
Total projected costs: \$225,000
Project Period: 05/01/2019-04/30/2022
8. Agency: NIH R01HL139795 DIVERSITY SUPPLEMENT (Morrison)
Title: Macrophage Rac1-IL-1 β -dependent VEGF-A Expression Pathway Promotes Calcification of Atherosclerotic Plaque.
P.I. Jade Neverson (Postbaccalaureate, mentee)
Role: Sponsor (Morrison)
Percent effort: 10%
Total projected costs: \$ 210,000
Project Period: 01/01/2020-11/30/2022
9. Agency: Lifespan CVI Faculty Pilot Award
Title: Identifying inflammatory markers of regression for coronary artery calcification
P.I. Alan R. Morrison
Role: PI
Percent effort: 10%
Total projected costs: \$25,000
Project Period: 10/01/2019-01/31/2020
10. Agency: NIH NIGMS P20GM103652
NIH Endothelial Injury and Repair: CPVB COBRE Phase 2
Title: IL-1 β Signaling Promotes Atherosclerotic Calcification and Cardiovascular Risk
P.I. Sharon Rounds and Elizabeth Harrington (Co-Directors)
Role: Project P.I. (Morrison)
Percent effort: 20%
Total projected costs: \$700,000
11. Agency: Harold S. Geneen Charitable
Trust Awards Program for Coronary Heart Disease Research
Title: The Impact of Macrophage IL-1beta on SARS-CoV-2 Virulence in the Setting of Experimental CAD
P.I. Alan R. Morrison
Role: PI
Percent effort: 10%
Total projected costs: \$ 275,000
Project Period: 02/01/2021 - 12/31/2022

Current:

1. Agency: NIH R01HL139795
Title: Development of a Rac-targeted Therapeutic Strategy for Treatment of Calcific Atherosclerosis
P.I. Alan R. Morrison

- Percent effort: 20%
 Total projected costs: \$1,586,774
 Project Period: 01/15/2018-11/30/2022 (no cost extension to 11/30/2023)
2. Agency: 1I01CX002231-01A1
 VA CSR&D Merit Review
 Title: Reprogramming Macrophages to Improve Vascular Healing in Diabetes
 P.I. Alan R. Morrison
 Role: PI
 Percent effort: 20%
 Total projected costs: \$ 1,200,000
 Project Period: 5/01/2021-4/30/2025
3. Agency: NIH 1R01HL163005
 Title: Combining Targeted Demethylation with Noncoding RNA-mediated mRNA Stabilization as a Strategy for Therapeutic Arteriogenesis in the Aged
 P.I. Alan R. Morrison
 Percent effort: 20%
 Total projected costs: \$3,318,636
 Project Period: 3/25/2022-3/24/2026
4. Agency: NIH 1R01HL163005 DIVERSITY SUPPLEMENT (Morrison)
 Title: Defining Dicer1 Dose-sensitive microRNA Networks that are Impacted by Aging and Influence Arteriogenesis
 P.I. Olivya Caballero (Graduate Student)
 Role: Sponsor/Primary Mentor (Morrison)
 Percent effort: 2%
 Total projected costs: \$ 352, 071
 Project Period: 9/01/2022-3/24/2026
5. Agency: 1I01CX002231-02S1 DIVERSITY, EQUITY, AND INCLUSION SUPPLEMENT (Morrison)
 VA CSR&D Merit Review
 Title: Reprogramming Macrophages to Improve Vascular Healing in Diabetes
 P.I. Roberto Mendez (Postdoctoral Fellow)
 Role: Sponsor/Primary Mentor (Morrison)
 Percent effort: 2%
 Total projected costs: \$ 199,968
 Project Period: 10/01/2022-9/30/2024
6. Agency: NIH T35 HL094308
 Title: Alpert Medical Student Summer Research Program (AMSSRP)
 P.I. Harrington E.O., Hampton, S., Bartnikas, T., Morrison, A.R.
 Percent effort: 2.5%
 Total projected costs: \$ 358,670
 Project Period: 08/01/2009-02/28/2025
7. Agency: 1I01CX002543 Department of Veterans Affairs VA OR&D CSR&D
 Title: Effect of PDE5 Inhibitor on Respiratory Symptoms in COPD complicated by Pulmonary Hypertension
 P.I. Sharon Rounds
 Role Co-I
 Percent effort: 5%
 Total projected costs: \$2,999,906

- Project Period: July 1, 2023-June 30, 2027
7. Agency: NIH T32 HL1346 Brown Respiratory Research Training Program
 Title: Macrophage IL-1 β -signaling as a Mechanism of Lung Injury
 During SARS-CoV-2 Infection
 P.I. Rachel Carley
 Role Sponsor/Mentor
 Percent effort: 2%
 Total projected costs: \$132,012
 Project Period: June 1, 2022-May 30, 2024
8. Agency: 23CDA1056587 American Heart Association
 Title: Opposing VEGF-A isoforms cross communicate through
 VEGFR1/2 to alter inflammatory angiogenesis in the context of
 aging
 P.I. Chris Mantsounga
 Role Sponsor/Mentor
 Percent effort: 2%
 Total projected costs: \$230,933
 Project Period: April 1, 2023-March 31, 2026

Pending:

1. Agency: NIH R01HL168896 (Morrison)
 Title: Inhibiting Transcriptional Co-Factor Activity of Rac1 to Help Improve
 COVID-19 Outcomes in the Setting of Atherosclerotic Vascular Disease
 P.I. Alan R. Morrison
 Percent effort: 10%
 Total projected costs: \$ 3,259,589
 Project Period: 04/01/2023-03/31/2028
2. Agency: NIH T32 (Morrison, Choudhary, Coulombe)
 Title: Applied Cardiac and Vascular Biology (ACVB)
 Contact P.I. A.R. Morrison
 Role MPI
 Percent effort: 5%
 Total projected costs: \$TBD
 Project Period: July 1, 2024-June 30, 2029

UNIVERSITY TEACHING ROLES

- 07/1995 Science Enrichment Program, teaching Biology to minority and underrepresented high school students in Massachusetts, Amherst, MA, Teaching Assistant.
- 03/1996 Tropical Biology Course, Amherst, MA, Teaching Assistant.
- 07/2003-06/2004 Project mentor for Caitlin Farrell, Winner of the Crompton Gold Medal for Best Senior Research Project in the Departments of Biology, Chemistry, Physics, and Mathematics, College of the Holy Cross, Worcester, MA.
- 07/2008 Medical Student Wednesday Evening Free Clinic; ECG Lecture Series, Yale University School of Medicine, New Haven, CT, Invited Lecturer.

02/2009-02/2011 Yale School of Medicine Physician Associate Program
Cardiovascular Journal Club, Yale University School of Medicine,
New Haven, CT, Discussion Leader.

09/2007-11/2015 Cardiovascular Module Yale University Medical School, Yale
University School of Medicine, New Haven, CT, Workshop
Leader.

03/2010-03/2012 Coronary Disease Module, Integrated Clinical Medicine Course,
Yale University School of Medicine, New Haven, CT, Workshop
Leader.

04/2013 Annual M.D./Ph.D. Research Retreat, University of Massachusetts
Medical School, Careers Beyond Medical and Graduate School,
Invited Discussion Panelist.

04/2013 Yale Internal Medicine Residency Program Seminar, Escape Fire:
The Fight to Rescue American Healthcare, Yale University School
of Medicine, New Haven, CT, Invited Discussion Panelist.

11/2013 Yale Cardiovascular Fellowship Program, The Use of Cardiac CT
to Identify Vulnerable Plaque, Yale University School of
Medicine, New Haven, CT, Invited Discussion Leader.

10/2014 Cardiovascular Module Yale University Medical School, Yale
University School of Medicine, New Haven, CT, Workshop
Leader.

10/2015 Cardiovascular Module Yale University Medical School, Yale
University School of Medicine, New Haven, CT, Workshop
Leader.

06/2016 Alpert Medical School at Brown University, Leadership Alliance
Program Undergraduate Summer Research Program, Providence,
RI, Research Mentor.

06/2017 Alpert Medical School at Brown University, Leadership Alliance
Program Undergraduate Summer Research Program, Providence,
RI, Research Mentor.

06/2018 Alpert Medical School at Brown University, Brown Translational
Research Program (T32), Providence, RI, Research Mentor.

06/2018 Alpert Medical School at Brown University, Leadership Alliance
Program Undergraduate Summer Research Program, Providence,
RI, Research Mentor.

06/2019 Alpert Medical School at Brown University, Brown Translational
Research Program (T32), Providence, RI, Research Mentor.

06/2019 Alpert Medical School at Brown University, Leadership Alliance
Program Undergraduate Summer Research Program, Providence,
RI, Research Mentor.

06/2020 Alpert Medical School at Brown University, Brown Translational
Research Program (T32), Providence, RI, Research Mentor.

06/2021 Alpert Medical School at Brown University, Brown Translational
Research Program (T32), Providence, RI, Research Mentor.

06/2021 Alpert Medical School at Brown University, Leadership Alliance
Program Undergraduate Summer Research Program, Providence,
RI, Research Mentor.

HOSPITAL TEACHING ROLES

11/2009 Yale Affiliated Hospitals Program Lecture, Wide Complex Tachycardia, Invited Lecturer.

01/2012 Yale Affiliated Hospitals Program Lecture, Molecular Imaging in Cardiology, Invited Lecturer for Cardiovascular Fellowship Program.

12/2012 Yale Affiliated Hospitals Program Lecture, Biology and Mechanisms of Atherosclerosis, Invited Lecturer for Internal Medicine Residency.

02/2013 Yale Affiliated Hospitals Program Lecture, Calcified Atherosclerosis, Invited Lecturer for Cardiovascular Fellowship Program.

04/2013 Yale Affiliated Hospitals Program Lecture, Biology of the Endothelium, Invited Lecturer for Cardiovascular Fellowship Program.

08/2014 Yale Affiliated Hospitals Program Lecture, New Directions in Nuclear Cardiology, Invited Lecturer for Cardiovascular Fellowship Program.

09/2014 Yale Affiliated Hospitals Program, Medicine Teaching Rounds, Invited Attending Discussion Leader.

01/2015 Yale Affiliated Hospitals Program Lecture, Introduction to Exercise Testing and Myocardial Perfusion Imaging, Invited Lecturer for Internal Medicine Residency Program.

11/2015 Yale Affiliated Hospitals Program, Medicine Teaching Rounds, Invited Attending Discussion Leader.

06/2016 Alpert Medical School at Brown University and Rhode Island Hospital, Coronary Artery Calcium Scoring, Lecturer for Cardiovascular Fellowship Program.

10/2016 Alpert Medical School at Brown University and Rhode Island Hospital, Molecular Imaging in Cardiovascular Medicine, Cardiovascular Fellowship Program.

03/2017 Providence VA Medical Center, Alpert Medical School at Brown University, and Rhode Island Hospital, Interpretation of ECGs, Internal Medicine Residency Program.

06/2017 Providence VA Medical Center, Alpert Medical School at Brown University, and Rhode Island Hospital, Interpretation of ECGs, Internal Medicine Residency Program.

07/2017 Providence VA Medical Center, Alpert Medical School at Brown University, and Rhode Island Hospital, Interpretation of ECGs, Internal Medicine Residency Program.

10/2018 Providence VA Medical Center, Alpert Medical School at Brown University, and Rhode Island Hospital, Interpretation of ECGs, Internal Medicine Residency Program.

09/2019 Providence VA Medical Center, Alpert Medical School at Brown University, and Rhode Island Hospital, Wide Complex Tachycardia, Internal Medicine Residency Program.

04/2020 Providence VA Medical Center, Alpert Medical School at Brown University, and Rhode Island Hospital, Interpretation of ECGs, Internal Medicine Residency Program.

11/2020 Providence VA Medical Center, Alpert Medical School at Brown University, and Rhode Island Hospital, Interpretation of ECGs, Internal Medicine Residency Program.

04/2021 Providence VA Medical Center, Alpert Medical School at Brown University, and Rhode Island Hospital, Interpretation of ECGs, Internal Medicine Residency Program.

11/2021 Providence VA Medical Center, Alpert Medical School at Brown University, and Rhode Island Hospital, Interpretation of ECGs, Internal Medicine Residency Program.