

## Kay D. Everett, MD, PhD

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### Education

2003-2007 **BS**, Materials Science and Engineering, Minors in Biomedical Engineering and Psychology, Massachusetts Institute of Technology (MIT), Cambridge, MA  
2007-2013 **PhD**, Medical Engineering and Engineering Sciences, Harvard-MIT Division of Health Sciences and Technology (HST) and Harvard University, Cambridge, MA  
2013-2016 **MD**, Harvard-MIT Division of HST and Harvard Medical School, Boston, MA

### Postdoctoral Training

2016-2018 **Internship and Residency in Internal Medicine**, Science in Residency Track, Brigham and Women's Hospital, Harvard Medical School, Boston, MA  
2018-2022 **Clinical and Research Fellowship in Cardiovascular Disease**, ABIM Physician-Scientist Pathway, Beth Israel Deaconess Medical Center, Harvard Medical School, Boston, MA  
2020-2022 **NIH T32 Research Fellowship**, Tufts Medical Center, Molecular Cardiology Research Institute, Boston, MA

### Academic Appointments

2022-2025 **Attending Physician**, Division of Cardiology, Tufts Medical Center, Boston, MA  
2022-2025 **Assistant Professor of Medicine**, Tufts University School of Medicine, Boston, MA  
2022-2025 **Investigator**, Tufts Molecular Cardiology Research Institute (MCRI), Boston, MA  
2022-2025 **Lecturer**, Health Sciences and Technology, Massachusetts Institute of Technology, Cambridge, MA  
2025 **Assistant Professor of Biomedical Engineering**, Tufts U. School of Engineering, Medford, MA  
2025 **Member**, Pharmacology & Drug Development Graduate Program, Tufts University Graduate School of Biomedical Sciences, Boston, MA  
2025- **Affiliate**, Mechanical Engineering, Tufts University School of Engineering, Medford, MA  
2025- **Assistant Professor of Medicine**, Morsani College of Medicine, University of South Florida, Tampa, FL  
2025- **Assistant Professor of Medical Engineering**, USF School of Engineering, Tampa, FL  
2025- **Attending Cardiologist**, USF Health, Tampa General Hospital, Tampa, FL  
2025- **Director**, Cardiovascular Hemodynamics and Devices Laboratory, USF Health Heart Institute

### Awards and Honors

2003 Third Place Award, International Science and Engineering Fair (ISEF), ISEF 2003  
2004-2005 Dean's List, Massachusetts Institute of Technology (MIT)  
2010 Strength and Conviction Award, MIT  
2010 Graduate Woman of Excellence, MIT  
2008-2011 Top Research Award, IDEA2 Program, Harvard-MIT  
2008-2011 Graduate Research Fellowship, National Science Foundation  
2012 Larry G. Benedict Student Leadership Award, MIT  
2012 Van Hoe Computational Fellowship, Harvard-MIT  
2017 Nursing Certificate of Recognition and Appreciation, VA Boston Healthcare System  
2020 Best in Research Award, A-CURE Research Symposium  
2020-2021 NIH T32 NRSA Research Training Grant Support, BIDMC Institutional Research Training Grant  
2021 Robert Kung Interventional Heart Failure Research Fellowship, Tufts Medical Center  
2021-2022 Natalie V. Zucker Research Center for Women Scholars Award, Tufts Medical Center

2021-2023	Loan Repayment Program Award, National Institute of Health
2022	Research Merit Scholarship, A-CURE Research Symposium
2022	Top Oral Abstract, Cardiovascular Research Technologies (CRT) Annual Meeting
2022	First Place, Fellows Abstract Competition, Technology and Heart Failure Therapeutics (THT) Conference
2022	Top Category Abstract Award, American Society for Artificial Organs (ASAIO) 67th Annual Conference
2022	First Place, CardioVascular Center (CVC) Research Symposium, Tufts Medical Center
2022	Second Place, Poster Competition, Tufts Molecular Cardiology Research Institute (MCRI) Retreat
2022	Winner, Jay N. Cohn New Investigator Award, Heart Failure Society of America (HFSA) Annual Scientific Meeting
2023	Earle P. Charlton Fund Research Grant Award Tufts University School of Medicine
2023-2025	Loan Repayment Program Renewal Award, National Institute of Health
2024-2029	Mentored Clinical Scientist Research Career Development Award (K08), National Institute of Health

### **Licensure and Certification**

2016-	Advanced Cardiac Life Support
2016-	Basic Life Support
2019	Physician Full Medical License, Massachusetts Board of Registration in Medicine
2020	Board Certification, American Board of Internal Medicine
2022	Cardiovascular Disease Board Certification, American Board of Internal Medicine

### **Professional Societies**

2003-2007	Member, Society of Women Engineers (SWE)
2016-2022	Member, Massachusetts Medical Society (MMS)
2016-2022	Member, American Medical Association (AMA)
2018-	Member, American College of Cardiology (ACC)
2022-	Member, American Society for Artificial Organs (ASAIO)
2023-	Member, American Heart Association (AHA)
2025-	Member, International Society for Heart and Lung Transplantation (ISHLT)

### **Employment**

2005	Intern, Endoscopy R&D, Boston Scientific, Marlborough, MA
2006	Summer Associate, Neurological Material Quality Assurance, Medtronic, Inc., Minneapolis, MN
2007	Summer Associate, Corporate Science and Technology, Medtronic, Inc., Minneapolis, MN
2013-2016	Intern, Food and Drug Administration (FDA), Winchester Engineering and Analytical Center, FDA Office of Regulatory Affairs, Winchester, MA

### **Teaching**

2005	Tutor, Introductory Chemistry 3.091, Concourse Freshman Learning Program, MIT
2006	Teaching Assistant, Introductory Chemistry 3.091, Concourse Freshman Learning Program, MIT
2017	Instructor, Introduction to Clinical Medicine, Division of Health Sciences and Technology (HST), Harvard Medical School
2010-2013	Teaching Assistant, Cardiovascular Pathophysiology, HST, Harvard Medical School
2019-2020	Preceptor, Practice in Medicine, Pathway MD Program, Harvard Medical School
2020-2022	Course Instructor, Hemodynamics Case Conference, Division of Cardiovascular Disease, Beth Israel Deaconess Medical Center
2021-2025	Course Instructor, Cardiovascular Pathophysiology HST.090, HST, Harvard Medical School
2023	Discussant, Morning Report: Dressler's Syndrome, Internal Medicine Residency Program, Tufts Medical Center

2023-2025	Course Instructor, Cardiovascular Pathophysiology, Tufts University School of Medicine, Tufts University
2024	Project Mentor, Senior Design Project, Department of Mechanical Engineering, Tufts University School of Engineering
2024-2025	Project Mentor, Senior Capstone Project Team, Department of Biomedical Engineering, Tufts University School of Engineering
2025	Discussant, Noon Report/Mortality and Morbidity Conference: NSTEMI and Pre-CABG Management, Division of Hospital Medicine, Tufts Medical Center
2025	Co-Advisor, Masters Research Elective, Department of Mechanical Engineering, Tufts University School of Engineering

### **Advocacy and Community Service**

2006-2007	Mentor, MIT Undergraduate Mentorship Program
2007-2010	Peer Mentor, Harvard-MIT BioMATRIX Program
2007-2012	Mentor, Harvard College Science Mentors Program
2008-2009	Peer Mentor, Harvard-MIT HST Buddy Program
2010, 2011	Lab Instructor, MIT Women's Technology Program
2011-2012	Mentor, MIT Undergraduate to Graduate Women's Mentorship Program
2012-2013	Peer Mentor, Harvard-MIT HST Buddy Program
2015, 2016	Science Judge, Student Spaceflight Experiments Program, Burleson School District
2017	Panelist, HST Women's Group
2019	Panelist, Graduate Women at MIT
2020	Event Lead, BIDMC Women in Cardiology Group
2020, 2021	Science Judge, Student Spaceflight Experiments Program, Burleson School District
2021	Panelist, Introduction to the Profession of Physician-Scientists, HST MD Program, Harvard-MIT
2021-2022	Mentor, MIT Undergraduate Practice Opportunities Program
2023	Panelist, MD-PhD Retreat, Tufts Graduate School of Biomedical Sciences, Tufts University
2024	Invited Speaker, HST MD Program Retreat, Harvard-MIT
2024	Poster Judge, Biomedical Engineering Department Retreat, Tufts University
2024	Invited Speaker, Fireside Chat: Cardiology Case Review, Fidelity Investments Global Headquarters

### **Committee Service**

#### ***National***

2023	Co-Chair, Acute Shock Track, 68th Annual Conference, American Society of Artificial Organs
2025	Co-Chair, Assisted Circulation, Gordon Research Seminar, Gordon Research Conferences

#### ***Local/Regional***

2010-2013	Institute Committee Member, Women's Advisory Group, MIT
2011-2012	Admissions Committee Member, HST PhD Program, MIT
2022-2025	Founder and Chair, Women in Cardiology Group, Tufts Medical Center
2022-2025	Selection Committee Member, Cardiovascular Disease Fellowship Program, Tufts Medical Center

### **Grant Review Activities**

2011-2012	Proposal Review and Selection Committee Member, HST IDEA <sup>2</sup> Program, MIT
2024	Reviewer, Pre- and Post-Doctoral Fellowships, American Heart Association (AHA)
2024	Reviewer, Small Grants to Advance Translational Science Program, Tufts Clinical and Translational Science Institute (CTSI)
2025	Ad hoc reviewer, NIH Respiratory, Cardiac, and Circulatory Sciences Review Branch, UG3/U24 Special Emphasis Panel

**Ad Hoc Journal Reviewer**

American Society of Artificial Internal Organs (ASAIO) Journal

Circulation: Heart Failure

European Society of Cardiology (ESC) Heart Failure Journal

Journal of Cardiac Failure

Journal of Cardiovascular Translational Research

Journal of the American College of Cardiology (JACC): Basic to Translational Science

Journal of Heart Lung Transplant

Journal of the Society for Cardiovascular Angiography and Interventions (SCAI)

Scientific Reports

Science Translational Medicine

**Research Interests**

1. Ventricular and vascular hemodynamics in veno-arterial extracorporeal membrane oxygenation
2. Structural mechanical and fluid dynamic modeling in mechanical circulatory support
3. Preclinical bench top and *in vivo* evaluation of cardiovascular devices

**Research Funding**

2024-2029	Modulation of Ventricular-Vascular Coupling in Veno-Arterial Extracorporeal Membrane Oxygenation. National Institute of Health, National Heart, Lung, and Blood Institute (NHLBI). NIH K08 Award KHL173696A. \$820,000. Role: PI.
2023-2025	Acute Right Ventricular Dysfunction in Heart Failure and Cardiogenic Shock: Strategies for Mechanical Circulatory Support. National Institute of Health, Loan Repayment Program (LRP) Renewal Award. \$12,880. Role: PI
2023-2024	Method for real-time ventricular afterload quantification and display for analysis of systemic hemodynamics in cardiovascular dysfunction and mechanical circulatory support. Earle P. Charlton Fund Research Grant, Tufts University School of Medicine. \$9,580. Role: PI.
2021-2023	Acute Right Ventricular Dysfunction in Heart Failure and Cardiogenic Shock: Strategies for Mechanical Circulatory Support. National Institute of Health, Loan Repayment Program (LRP). \$16,683. Role: PI
2021-2023	Trans-valvular Unloading before Veno-Arterial Extracorporeal Membrane Oxygenation Reduces Right and Left Ventricular Work and Infarct Size in Acute Myocardial Infarction. Natalie V. Zucker Research Center for Women Scholars Award, Tufts Medical Center. \$8,476. Role: PI.
2021	Pre-emptive Impella Unloading is Superior (PRIMUS) to Bailout Impella after VA-ECMO for EcPella A-CURE. \$25,000. Role: PI.
2020-2021	NIH T32 Training Program in Cardiovascular Research at Beth Israel Deaconess Medical Center. PI: Murray Mittleman. \$82,400. Role: Trainee.
2012	Mechanisms and Implications of Valve Frame Fracture. Industrial Research Grant. Medtronic, Inc. PI: Elazer R Edelman. \$454,000. Role: Co-Investigator.
2012	Structural Mechanics Evaluation of Stent Strut Fracture. Van Hoe Computational Fellowship. Harvard-MIT Division of HST. \$15,000. Role: PI.
2008-2011	Mechanisms and Implications of Stent Strut Fracture. IDEA^2 Program Top Award. Harvard-MIT Division of HST. \$14,800. Role: PI.
2008-2011	Medical Engineering Graduate Research Fellowship Program (GRFP). National Science Foundation. \$128,000. Role: PI.
2009-2013	Development of Fatigue Test Methods for Peripheral and Coronary Stents. Food and Drug Administration (FDA) Office of Regulatory Affairs (ORA). PI: Elazer R Edelman. \$1,600,000. Role: Co-Investigator.

**Clinical Studies**

1. Acute Hemodynamics in Patients on Mechanical Circulatory Support. PI: NK Kapur. Tufts Medical Center. Role: Co-Investigator.
2. Pulmonary vascular impedance as a novel tool to understand right ventricular afterload in cardiogenic shock. PI: G Gulati. Tufts Medical Center. Role: Co-Investigator.

**Patents**

1. Systems and Methods for Multimodal Mechanical Testing of Medical Devices (2015). US2011/038581.

**Bibliography****Peer Reviewed Publications**

1. Bhav S, Swain L, Reyelt L, Qiao X, Aryaputra T, **Everett K**, John K, Berry I, Stolyarov A, Mahmoudi E, M Chin and NK Kapur. (2025). Normoxemic Extracorporeal Membrane Oxygenation Reduces Infarct Size and Preserves Mitochondrial Integrity in Preclinical Models of Acute Myocardial Infarction. (2025). *J Cardiovasc Transl Res*. (Available online 7/21/25).
2. Hungerford SL, Gulati G, **Everett K**, Kearney K, Lau E, Burkhoff D, A Adji^ and Kapur N^ . Assessment of Ventriculo-Arterial Interactions in Early and Undifferentiated Pulmonary Hypertension Using Wave Intensity Analysis. (2025). *J Am Heart Assoc* 14(18):e042831.
3. Hungerford SL, **Everett K**, Lau E, Burkhoff D, and Kapur N. The Pulmonary Circulation in Advanced Heart Failure and Cardiogenic Shock: State-of-the-Art Review. *Circ Heart Fail* 18(9): e012611.
4. Hungerford S, **Everett, K**, Gulati G, Sunagawa K, Burkhoff D and NK Kapur. (2025). The Systemic Circulation in Advanced Heart Failure and Cardiogenic Shock. State-of-the-Art Review. *Circ Heart Fail* 18(2):e012016.
5. Hungerford S, Song N, Loo, B, Rye, E, Sritharan, H, **Everett K**, Hayward, C, Kapur N and DWM Muller. (2025). The Effect of Increased Vascular Afterload Measures on Flow Rate and Survival in Severe Aortic Stenosis. *Eur Heart J Cardiovasc Imaging* 26(4): 674–685.
6. Hungerford S, Kearney K, Li C, Song N, **Everett K**, Gulati G, Olsen N, Lau E, Jabbour A, Kotlyar E, Bart N, Muller D, Hayward C, Kapur N, and A Adji. (2024). Pulsatile Vascular Afterload Measurement Improves Prediction of Right-Heart Dysfunction in Undifferentiated and Left-Sided Pulmonary Hypertension. *JAHA* 13(23):e034684.
7. Kapur, NK, Reyelt L, **Everett K**, Mahmoudi E, Kapur MS, Ellis JS, Swain L, Qiao X, Bhav S, and G Sunagawa. (2024). Mechanically Regulating Cardiac Preload to Maximize Left Ventricular Unloading with a Trans-Valvular Micro-Axial Flow Pump. *Circ Heart Fail* 17(4):e011330.
8. Swain L, Bhav S, Qiao X, Reyelt L, Awata J, Sunagawa G, **Everett K**, Raghav R, Powers S, Mahmoudi E, Natov P, Warner M, Couper G, Kawabori M, Miyashita S, Aryaputra T, Huggins G, Chin M and NK Kapur. (2024). Novel Role for Cardiolipin as a Target of Therapy to Mitigate Myocardial Injury Caused by Veno-Arterial Extracorporeal Membrane Oxygenation. *Circulation* 149(17):1341–1353.
9. Bhav S, Swain L, Qiao X, Martin G, Aryaputra T, **Everett K**, and NK Kapur. (2023). ALK1 Deficiency Impairs the Wound-Healing Process and Increases Mortality in Murine Model of Myocardial Infarction. *J Cardiovasc Transl Res* 17(3):496-504.
10. Bhav S, Esposito M, Swain L, Qiao X, Martin G, Wadhwa S, **Everett K** and NK Kapur. (2023). Loss of Bone Morphogenetic Protein (BMP)-9 Reduces Survival and Increases MMP Activity after Myocardial Infarction. *JACC Basic Transl Sci* 8(10):1318-1330.
11. **Everett KD**, Swain L, Reyelt L, Majumdar M, Qiao X, Bhav S, Warner M, Mahmoudi E, Chin MT, Awata J and NK Kapur. (2023). Transvalvular Unloading Mitigates Ventricular Injury Due to Venoarterial Extracorporeal Membrane Oxygenation in Acute Myocardial Infarction. *JACC Basic Transl Sci* 8(7):769-780.
12. Kanwar MK, **Everett KD**, Gulati G, Brener MI and NK Kapur. (2022). Epidemiology and management of right ventricular-predominant heart failure and shock in the cardiac intensive care unit. *Eur Heart J Acute Cardiovasc Care* 11(7):584-594.
13. Kimmelstiel C, **Everett KD**, Jain P, Miyashita S, Botto R, Resor C and NK Kapur. (2022). Transcatheter mitral intervention relieves dynamic outflow obstruction and reduces cardiac workload in hypertrophic cardiomyopathy. *Circ Heart Fail* Epub 2022 Feb 22.

14. **Everett KD\***, Jain P\*, Botto R, Salama M, Miyashita S, Reyelt L, Kawabori M and NK Kapur. (2021). Acute effects of left ventricular support with Impella 5.5 on biventricular hemodynamics. *Circ Heart Fail* 14(9):8616.  
\*Contributed equally.
15. Jain P, Thayer K, Abraham J, **Everett KD**, Pahuja M, Whitehead E, Schwartz B, Lala A, Sinha S, Kanwar M, Garan AR, Hernandez-Monfort J, Mahr C, Vorovich E, Wencker D, McCabe J, Jones T, Goud M, Baca P, Harwani N, Burkhoﬀ D and NK Kapur. (2021). Right ventricular dysfunction is common and identifies patients at risk of dying in cardiogenic shock. *J Card Fail*: 27(10):1061.
16. Jain P, Salama M, **Everett K**, Reyelt L and NK Kapur. (2021). To vent or not to vent: a loaded question during VA-ECMO support for cardiogenic shock. *Circ Cardiovasc Interv* 14(5). PMID: 34003669.
17. Eberly LA, Richterman A, Beckett, AG, Wispelwey B, Marsh R, Cleveland Machanda EC, Chang CY, Glynn RJ, Brooks KC, Boxer R, Kakoza R, Goldsmith J, Loscalzo J, Morse M, and EF Lewis on behalf of the Brigham and Women's Internal Medicine Housestaﬀ. (2019). Identification of racial inequities in access to specialized inpatient heart failure care at an academic medical center. *Circ Heart Fail* 12: e6214.
18. **Everett KD**, Conway C, Desany GJ, Choi G, Taylor C, Baker B, and ER Edelman. (2016). Structural mechanics predictions relating to clinical coronary stent fracture in 5 year period in FDA MAUDE database. *Ann Biomed Eng* 44(2):391-403.
19. DT Auguste, **Furman [Everett] K**, Wong A, Fuller J, Armes SP, Deming TJ, and R Langer. (2008). Triggered release of siRNA from poly(ethylene glycol)-protected, pH-dependent liposomes. *J Cont Rel* 130:266-274.
20. Bernier U, **Furman [Everett] K**, Klein DL, Allan SA, and DR Barnard. (2005). Comparison of contact and spatial repellency of Catnip Oil and N,N-diethyl-3-methylbenzamide (Deet) against mosquitoes. *J Med Entomol* 42(3):306-311.

#### Original Research Manuscripts in Submission or in Preparation

1. **Everett KD**, Hungerford S, Gulati G, Reyelt L, Swain L, Bhav S, Qiao X, Warner M, Mahmoudi E, and NK Kapur. Acute Hemodynamic Effects of VA-ECMO on Arterial Afterload in a Preclinical Model of Normal Left Ventricular Function After Exposure to Vasodilators. (*In preparation*).
2. **Everett KD**, Hungerford S, Reyelt L, Swain L, Bhav S, Qiao X, and NK Kapur. Vascular Congestion Mediates Ventricular Injury due to Venoarterial Extracorporeal Membrane Oxygenation in Acute Myocardial Infarction. (*In preparation*).
3. **Everett KD**, Jain P, Lee, A, Miyashita S, Esposito M, Reyelt L, Barland K, Picone V, Faugno A, Chweich H, Vest A, Kiernan M, Hong E, Brovman E, Fox J, Kawabori K, NK Kapur. Acute Effects of Impella 5.5 on Biventricular Work in Patients with Heart Failure Associated Cardiogenic Shock. (*Under revision*).
4. Hungerford S, Song N, Gulati G, **Everett K**, Kapur N and A Adji. Arterial Impedance as Vascular Afterload in Health and Disease. (*Submitted 4/4/25*).
5. Hungerford S, Song N, Loo B, Rye E, Sritharan H, **Everett K**, Hayward C, Kapur N, Muller D, and A Adji. The Effect of Volume-Flow Discordance on Survival in Severe Aortic Stenosis. (*Under revision, submitted 6/4/25*).
6. Hungerford S, **Everett KD**, Lau E, Burkhoﬀ D, Kapur NK and G Gulati. Pulmonary Impedance and Wave Intensity Analysis to Assess Ventriculo-Arterial Interactions in Cardiogenic Shock. (*Submitted 8/2025*).

#### Invited Reviews

1. Kanwar M, **Everett K**, Gulati G, Brenner M, and NK Kapur. (2022). Epidemiology and management of RV-predominant HF and shock in the cardiac intensive care unit. *Eur Heart J: Acute Cardiovasc Care* 11(7):584-59.

#### Invited Editorials

1. **Everett KD**. Reverse remodeling in infarct cardiomyopathy: A role for temporary mechanical circulatory support? *JACC: Basic Transl Sci* 10(7):101289.
2. **Everett KD** and NK Kapur. (2022). Devices for ventricular reconstruction in heart failure due to infarct cardiomyopathy. Invited editorial. *J Cardiac Fail* 28(4):614-616.

#### Monographs, Proceedings, and White Papers

1. **Everett K**, Partida R, Schendel M, and ER Edelman. (2013). Multimodal Fatigue Test Investigating the Consequence of a Frame Fracture in a CoreValve® TAV Test Report. Medtronic, Inc. Submitted as part of Medtronic CoreValve Pre-Market Approval documentation to FDA.

2. Partida R, **Everett K**, Schendel M and ER Edelman. (2012). Validation and Characterization of a Multimodal Fatigue Test to Investigate the Consequence of Fracture in a CoreValve PAV. Medtronic, Inc.
3. **Furman [Everett] K**. (2007). Drug Ampule Crack Root Cause Investigation. Medtronic, Inc. Submitted as part of root-cause investigation response report to FDA.

### **Theses/Dissertation**

1. Jain N. Evaluation of Device-Based Treatment Options for Patients with Heart Failure with Preserved Ejection Fraction. PhD Thesis reader, Monash University. September 2025.
2. **Everett KD**. Mechanisms and Implications of Fracture in Cardiovascular Stents. Harvard University, School of Engineering and Applied Sciences. April 2014.

### **Published Abstracts**

1. **Everett KD**, Hungerford S, Reyelt L, Swain L, Bhav S, Qiao X, Natov P, Cropper E, Alagappan V, Stolyarov A, Warner M, Mahmoudi E, and NK Kapur. (2025). Congestion Limits Reduction in Left Ventricular Pressure-Volume Area Due to Veno-Arterial Extracorporeal Membrane Oxygenation (VA-ECMO) in Acute Myocardial Infarction. *ASAIO J* 71(S4):18.
2. Reyelt L, Swain L, **Everett KD**, Natov P, Qiao X, Aslam M, Karas R, McCarthy J, Leihan T, Lenihan R, Iyer M and NK Kapur. (2025). The Tulyp System: A Novel Extracorporeal Pump that Provides Superior Limb Perfusion Compared to Passive Bypass in a Preclinical Model of Acute Limb Ischemia. *ASAIO J* 71(S1):46.
3. Hungerford SL, Song N, Loo B, Rye E, Sritharan H, **Everett KD**, Hayward CS, Kapur NK, Muler DWM and Al Adj. (2025). The Effect of Volume-Flow Discordance on Survival in Severe Aortic Stenosis. *JACC Asia* S2772-3747(25).
4. **Everett KD**, Hungerford S, Gulati G, Reyelt L, Swain L, Bhav S, Qiao X, Warner M, Mahmoudi E and NK Kapur. (2025). Acute Hemodynamic Effects of VA-ECMO on Arterial Afterload in a Preclinical Model of Normal Left Ventricular Function After Exposure to Vasodilators. *J Heart Lung Transplant* 44(4):S235-S236.
5. Kapur NK, Reyelt L, Stolyarov A, Bhav S, Mahmoudi E, **Everett K**, Qiao X and L Swain. (2025). Use of a Long Femoral Return Cannula Positioned in the Thoracic Aorta With VA-ECMO Resolves Differential Hypoxemia in a Preclinical Model of North South Syndrome. *JACC* 84(18S): B144-B145.
6. Swain L, Reyelt L, Qiao X, Bhav S, **Everett K**, Mahmoudi E and N Kapur. (2024). HIF-1 $\alpha$  a Novel Therapeutic Target to Reduce Cardiac Ischemia Reperfusion Injury during AMI. *Circ Res* 135(S1).
7. Kapur NK, John K, Reyelt L, Mahmoudi E, **Everett K**, Swain L, Qiao X and G Sunagawa. Passive Femoral Bypass Fails to Normalize Limb Perfusion in the Setting of Acute Limb Ischemia. *J Heart Lung Transplant* 43(4S): S236-S237.
8. Kapur NK, Reyelt L, **Everett K**, Mahmoudi E, Kapur MS, Ellis JS, Swain L, Bhav S, Qiao X and G Sunagawa. (2024). Mechanically Regulating Cardiac Preload to Maximize Left Ventricular Unloading with a Trans-Valvular Micro-Axial Flow Pump: The PrePella Concept. *J Heart Lung Transplant* 43(4):S236.
9. **Everett KD**, Swain L, Reyelt L, Majumdar M, Qiao X, Bhav S, Warner M, Mahmoudi E, Surks W, Aryaputra T, Goel S and NK Kapur. (2023). Combining VA-ECMO and Impella (EC-Pella) before reperfusion mitigates left ventricular loading and injury due to VA-ECMO in acute myocardial infarction. *J Cardiac Fail* 29(4):546.
10. **Everett KD**, Jain P, Lee A, Miyashita S, Esposito M, Botto R, Reyelt L, Kawabori K, NK Kapur. (2023). Left ventricular unloading acutely reduces right ventricular preload in patients with acute decompensated heart failure and cardiogenic shock. *JACC* 81(8):272.
11. **Everett KD**, Swain L, Reyelt L, Majumdar M, Qiao X, Bhav S, Warner M, Mahmoudi E, Surks W, Aryaputra T, Goel S and NK Kapur. (2022). Combining VA-ECMO and Impella (EC-Pella) before reperfusion mitigates left ventricular loading and injury due to VA-ECMO in acute myocardial infarction. *ASAIO J* 68(Suppl 2):3.
12. **Everett KD**, Swain L, Reyelt L, Majumdar M, Qiao X, Bhav S, Warner M, Mahmoudi E, Surks W, Aryaputra T, Goel S and NK Kapur. (2022). Combining VA-ECMO and Impella (EC-Pella) before reperfusion mitigates left ventricular loading and injury due to VA-ECMO in acute myocardial infarction. *Cardiovasc Revasc Med IMI*: 40:87.
13. **Everett KD**, Swain L, Reyelt L, Majumdar M, Qiao X, Bhav S, Warner M, Mahmoudi E, Surks W, Aryaputra T, Goel S and NK Kapur. (2022). Combining VA-ECMO and Impella (EC-Pella) before reperfusion mitigates left ventricular loading and injury due to VA-ECMO in acute myocardial infarction. *JACC: Cardiovasc. Interv* 15(4):S53.

14. **Everett KD**, Swain L, Reyelt L, Majumdar M, Qiao X, Bhavé S, Warner M, Mahmoudi E, Surks W, Aryaputra T, Goel S and NK Kapur. (2022). Combining VA-ECMO and Impella (EC-Pella) before reperfusion mitigates left ventricular loading and injury due to VA-ECMO in acute myocardial infarction. *JACC* 79(9):273.
15. **Everett KD**, Swain L, Reyelt L, Majumdar M, Qiao X, Bhavé S, Warner M, Mahmoudi E, Surks W, Aryaputra T, Goel S and NK Kapur. (2022). Combining VA-ECMO and Impella (EC-Pella) before reperfusion mitigates left ventricular loading and injury due to VA-ECMO in acute myocardial infarction. *J Heart Lung Transplant* 41(4):S185-S186.
16. Diakos N, Swain L, Bhavé S, Qiao X, **Everett K** and N Kapur. (2022). Circulating Proteomic Analysis Identifies Reduced Inflammation After Initiation of Hemodynamic Support with Either Veno-Arterial Extracorporeal Membrane Oxygenation or Impella in Patients with Cardiogenic Shock. *J Heart Lung Transplant* 41(4):S62.
17. Bhavé S, Swain L, Qiao X, Esposito M, Martin G, **Everett K**, Surks W, Aryaputra T and N Kapur. (2022). Bone morphogenetic protein-9 (BMP9) is required for survival and limits left ventricular matrix metalloproteinase activity after acute myocardial infarction. *JACC* 79(9):S1005.
18. Swain L, Qiao X **Everett K**, Bhavé S, Reyelt L, Aryaputra T, Surks W, Goel S, Zweck E, Diakos N and N Kapur. (2022). Trans-valvular unloading reduces anaerobic glycolysis before reperfusion and preserves energy substrate utilization after reperfusion in models of acute myocardial infarction. *JACC* 79(9):S573.
19. Jain P, Thayer K, Whitehead E, **Everett K**, Schwartz B, Pahuja M, Kanwar M, Sinha S, Garan AR, Hernandez-Monfort J, Mahr C, Burkhoof D and NK Kapur. (2021). Identifying right ventricular dysfunction increases the predictive value of SCAI staging: A case for an 'R' modifier. *J Heart Lung Transplant* 40(4):S139.
20. Bhavé S, Esposito M, Swain L, Qiao X, Martin G, **Everett K**, and NK Kapur. (2021). Loss of bone morphogenetic protein (BMP) 9 activity reduces survival and increases collagen turnover via enhanced matrix metalloproteinase activity after acute myocardial infarction. *Circulation* 144(S1):A14103.
21. DT Auguste, **Furman [Everett] K**, Wong A, Fuller J, Armes SP, Deming TJ, and R Langer. (2008). Poly(ethylene glycol)-Protected, pH-Dependent Liposomes Enhance RNAi Delivery. 2008 AIChE Annual Meeting.

### **Invited Academic Presentations**

#### ***International***

1. Building and Nurturing Biomedical Innovation Ecosystems: Empowering Ownership in the PhD Thesis. 2012 MIT-Madrid M+ Vision Consortium, Madrid, Spain.
2. Combining VA-ECMO And Impella (EC-Pella) Before Reperfusion Mitigates Left Ventricular Loading And Injury Due To VA-ECMO In Acute Myocardial Infarction. Apr 2022. International Society of Heart Lung Transplant (ISHLT) Annual Meeting, Boston, MA.
3. Ventricular and Vascular Biomechanics of Veno-Arterial Extracorporeal Membrane Oxygenation (VA-ECMO). Invited Talk at 2025 Gordon Research Conference, Castelldefels, Spain.

#### ***National***

1. Acute Hemodynamic Effects of Pre-Emptive Impella Unloading Before VA-ECMO in a Preclinical Model of Acute MI. Dec 2021. Conference Top Abstract Presentation at A-CURE 2021, Boston, MA.
2. Combining VA-ECMO And Impella (EC-Pella) Before Reperfusion Mitigates Left Ventricular Loading And Injury Due To VA-ECMO In Acute Myocardial Infarction. Jan 2022. Conference Top Fellows Abstract Competition at Technology and Heart Failure Therapeutics (THT) Conference 2022, New York, NY.
3. Combining VA-ECMO And Impella (EC-Pella) Before Reperfusion Mitigates Left Ventricular Loading And Injury Due To VA-ECMO In Acute Myocardial Infarction. Feb 2022. Conference Top Oral Abstract Session at Cardiovascular Research Technologies (CRT) Annual Meeting, Washington, DC.
4. Combining VA-ECMO And Impella (EC-Pella) Before Reperfusion Mitigates Left Ventricular Loading And Injury Due To VA-ECMO In Acute Myocardial Infarction. Apr 2022. Conference Moderated Poster Session at American College of Cardiology (ACC) Scientific Sessions, Washington, DC.
5. Combining VA-ECMO And Impella (EC-Pella) Before Reperfusion Mitigates Left Ventricular Loading And Injury Due To VA-ECMO In Acute Myocardial Infarction. Oct 2022. Conference Young Investigator Competition at Heart Failure Society of America (HFSA) Annual Meeting, Washington, DC.
6. Left ventricular unloading reduces right ventricular preload and afterload in patients with acute decompensated heart failure and cardiogenic shock. Nov 2022. Moderated Poster Presentation at American Heart Association (AHA) Annual Scientific Sessions, Chicago, IL.



7. Left ventricular unloading reduces right ventricular preload and afterload in patients with acute decompensated heart failure and cardiogenic shock. Nov 2022. Conference Top Abstract Presentation at A-CURE 2022, Chicago, IL.
8. Left ventricular unloading reduces right ventricular preload and afterload in patients with acute decompensated heart failure and cardiogenic shock. Mar 2023. Oral Presentation at American College of Cardiology (ACC) Annual Meeting, New Orleans, LA.
9. Left ventricular unloading reduces right ventricular preload and afterload in patients with acute decompensated heart failure and cardiogenic shock. May 2023. Oral Presentation at Gordon Research Seminar, Assisted Circulation, Waterville Valley, NH.
10. Ventricular and Vascular Biomechanics of Veno-Arterial Extracorporeal Membrane Oxygenation (VA-ECMO). Feb 2025. Emory University School of Medicine Cardiovascular Biology Seminar, Atlanta, GA.
11. Ventricular and Vascular Biomechanics of Veno-Arterial Extracorporeal Membrane Oxygenation (VA-ECMO). Mar 2025. University of South Florida Medical Engineering Department Seminar, Tampa, FL.
12. Ventricular and vascular biomechanics of VA ECMO: Diagnostic and therapeutic implications. Utah Cardiac Recovery Symposium (U-CARS). Feb 2026. University of Utah, Salt Lake City, UT.

### **Local/Regional**

1. Fatigue Test Methods for Fracture of Medical Devices. Invited talk at 2012 FDA ORA Method Development Validation Program Webinar Series. Food and Drug Administration (FDA) Winchester Engineering and Analytic Center (WEAC), Winchester, MA.
2. WEAC-MIT Designed Simulated-Use Stent Fatigue Testing Apparatus and Fracture Detection/Imaging System. Invited talk at 2013 FDA ORA CDRH Monthly Webinar Series. Food and Drug Administration (FDA) Winchester Engineering and Analytic Center (WEAC), Winchester, MA.
3. Acute hemodynamic effects of pre-emptive impella unloading before VA-ECMO in a preclinical model of acute MI. 2021 Cardiology Grand Rounds, Beth Israel Deaconess Medical Center, Boston, MA.
4. Combining VA-ECMO and Impella (EC-Pella) Before Reperfusion Mitigates Left Ventricular Injury Due to VA-ECMO in Acute Myocardial Infarction. 2022 Cardiology Grand Rounds, Beth Israel Deaconess Medical Center, Boston, MA.
5. Combining VA-ECMO and Impella (EC-Pella) Before Reperfusion Mitigates Left Ventricular Injury Due to VA-ECMO in Acute Myocardial Infarction. Sept 2022. Molecular Cardiology Research Institute (MCRI) Annual Retreat, Tufts Medical Center, Woods Hole, MA.
6. Ventricular and Vascular Biomechanics of Mechanical Circulatory Support. Sept 2024. Biomedical Engineering Department Seminar, Tufts University, Medford, MA.
7. Ventricular and Vascular Biomechanics of Mechanical Circulatory Support. Sept 2024. Mechanical Engineering Department Seminar, Tufts University, Medford, MA.
8. Ventricular and Vascular Biomechanics of Mechanical Circulatory Support. March 2025. Graduate Program in Pharmacology & Drug Development Seminar, Tufts University School of Medicine, Boston, MA.
9. Ventricular and Vascular Biomechanics of Veno-Arterial Extracorporeal Membrane Oxygenation (VA-ECMO). May 2025. Cardiology Grand Rounds, Beth Israel Deaconess Medical Center (BIDMC). Boston, MA.