

CURRICULUM VITAE

Julie K. Freed, M.D., Ph.D.

**Associate Professor
Senior Associate Dean
Executive Vice Chair
Department of Anesthesiology**

OFFICE ADDRESS:

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PLACE OF BIRTH: Mukwonago, WI

CITIZENSHIP: U.S.A

EDUCATION:

1998 – 2002: BA, University of Minnesota, Minneapolis, WI
2003 – 2008: PhD, Medical College of Wisconsin, Milwaukee, WI
2007 – 2011: MD, Medical College of Wisconsin, Milwaukee, WI

POSTGRADUATE TRAINING AND FELLOWSHIP APPOINTMENTS:

6/2011 – 6/2015: Resident, Department of Anesthesiology, Research Track
Department of Anesthesiology, Medical College of Wisconsin,
Milwaukee, WI
Ruth L. Kirschstein Institutional National Research Service
Appointee, NIGMS
Advisor: David D. Gutterman, MD, Medical College of Wisconsin

7/2016 – 6/2017: Fellow, Adult Cardiothoracic Anesthesiology
Department of Anesthesiology, Medical College of Wisconsin,
Milwaukee, WI

FACULTY APPOINTMENTS:

7/2017 – 6/2021: Assistant Professor, Department of Anesthesiology, Division of Adult
Cardiothoracic Anesthesia, Medical College of Wisconsin,
Milwaukee, WI

- 1/2018 – 2/2025: Clinical Research Director, Department of Anesthesiology, Medical College of Wisconsin, Milwaukee, WI
- 5/2019 – Present: Adjunct Professor, Department of Physiology, Medical College of Wisconsin, Milwaukee, WI
- 7/2021 – Present: Associate Professor, Department of Anesthesiology, Division of Adult Cardiothoracic Anesthesia, Medical College of Wisconsin, Milwaukee, WI
- 9/2022 – Present: Executive Vice Chair, Department of Anesthesiology, Medical College of Wisconsin, Milwaukee, WI
- 7/2025 – 08/2025: Associate Director; Clinical and Translational Research, Cardiovascular Center, Medical College of Wisconsin
- 7/2025 – Present: Senior Associate Dean, Medical College of Wisconsin
- 7/2025 – Present: Director, Clinical & Translational Research Institute of Southeast Wisconsin

HOSPITAL STAFF PRIVILEGES:

- 7/2017 – Present: Staff Physician, Anesthesiology, Adult Cardiothoracic, Medical College of Wisconsin, Milwaukee, WI
- 6/2019 – Present: Adult Perioperative Echocardiography, Medical College of Wisconsin, Milwaukee, WI

SPECIALTY BOARDS AND CERTIFICATION:

- 10/25/2012 – 10/31/2027: Wisconsin State Medical Licensure (58667-20)
- 07/10/2017 – 12/31/2027: Diplomate, American Board of Anesthesiology
- 03/04/2020 – 02/28/2028: Diplomate, Advanced Perioperative Transesophageal Echocardiography
- 02/22/2024 – 02/22/2026: Advanced Cardiovascular Life Support
- 12/31/2023 – 12/31/2033: Diplomate, Adult Cardiac Anesthesiology

AWARDS AND HONORS:

- 2002: NCAA Division I Letter Award Winner, Track and Field, University of Minnesota
- 2002: Patty Berg Scholar Award, University of Minnesota
- 2008: Excellence in Physiology, Medical College of Wisconsin
- 2011: JJ Smith Award in Physiology, Medical College of Wisconsin
- 2012: ATVB Young Investigator Travel Award, American Heart Association
- 2012: First place, Critical Care Section, Midwest Anesthesiology Resident's Conference
- 2013: MCWAH Research Award, Medical College of Wisconsin Affiliated Hospitals
- 2013: MCW Research Day New Investigator Award, Basic Science, Medical College of Wisconsin
- 2013: FAER Resident Scholar, Foundation for Anesthesia Education and Research
- 2014: Pursuing Organizational Excellence Together (POET) Award, Froedtert Memorial

Lutheran Hospital
2015: ATVB Young Investigator Travel Award, American Heart Association
2015: MCW Research Day New Investigator Award, Basic Science, Medical College of Wisconsin
2015: Excellence in Teaching Anesthesiology, Medical College of Wisconsin
2016: NIH Loan Repayment Award Recipient, NHLBI
2016: Wilson Phillips Award in Anesthesiology, Medical College of Wisconsin
2017: First place, Resident Research Contest, Post-Graduate Assembly (PGA), New York Society of Anesthesiology
2018: MCW Outstanding Medical Student Teacher Award
2018: NIH Loan Repayment Award Recipient, NHLBI
2019: Steve Cullen Healthy Heart Scholar
2020: Women in Science Rising Pioneer Award
2021: Elected Fellow, American Heart Association (FAHA), ATVB Section
2022: Elected Fellow, American Physiological Society, CV Section
2022: Froedtert Hospital President's Award for Translational Research
2023: American Physiological Society Select Award
2024: Mentor of the Year, Medical College of Wisconsin
2024: Outstanding Service Award, Medical College of Wisconsin
2024: Outstanding Graduate School Educator Award, Medical College of Wisconsin
2025: Drs. Gabor & Harriette Kaley Endowed Lecturer, New York Medical College
2025: Guest Judge & Keynote Speaker, Annual Academic Evening, Department of Anesthesiology, Columbia University
2026: James O. Davis Distinguished Lecturer, University of Missouri

MEMBERSHIPS IN HONORARY AND PROFESSIONAL SOCIETIES:

2004 – Present: American Physiological Society, CV Section
2006 – Present: Microcirculatory Society
2011 – Present: American Society of Anesthesiology
2011 – Present: Wisconsin Society of Anesthesiology
2012 – Present: American Heart Association
2015 – Present: American College of Sports Medicine
2015 – Present: early-Stage Anesthesia Scholars
2017 – Present: Society of Cardiovascular Anesthesiologists
2017 – Present: American Society of Echocardiography
2017 – Present: International Anesthesia Research Society
2018 – Present: Association of University Anesthesiologists
2025 – Present: Sigma Xi, Scientific Research Honor Society

EDITORSHIPS/EDITORIAL BOARDS/JOURNAL REVIEWS:

Editorial Leadership:

2025 – 2027: Senior Associate Editor, *JAHA*
2022 – 2025: Associate Editor, *Microcirculation*
2022 – 2025: Associate Editor, *JAHA*

Editorial Board:

2018 – Present: *American Journal of Physiology – Heart and Circulatory Physiology*

2019 – Present: *Journal of Cardiovascular Anesthesia*

2020 – Present: *Circulation Research*

Journal Review:

Science

Nature Communications

Circulation

Circulation Research

Hypertension

ATVB

British Medical Journal

JACC: Basic to Translational Research

Translational Research

Scientific Reports

JAHA

American Journal of Physiology: Heart and Circulatory Physiology

Microcirculation

International Journal of Cardiology

American Journal of Physiology: Cell Physiology

Canadian Journal of Pharmacology and Physiology

British Journal of Anesthesia

Journal of Applied Physiology

American Journal of Physiology: Endocrinology and Metabolism

Endocrinology

Anesthesia & Analgesia

Trends in Anaesthesia and Critical Care

Reviews in Cardiovascular Medicine

Journal of Clinical Anesthesia

American Journal of Physiology: Regulatory, Integrative and Comparative Physiology

Journal of Vascular Research

Journal of Lipid Research

Journal of Clinical Medicine

JOVE

Function

Journal of the International Society of Sports Nutrition

Endocrinology, Diabetes & Metabolism

Basic & Clinical Pharmacology & Toxicology

NATIONAL ELECTED/APPOINTED LEADERSHIP AND COMMITTEE POSITIONS:

2017 – 2019: Trainee Chair, Translational Physiology Interest Group, American Physiological Society

2017 – Present: Abstract Reviewer, AHA Scientific Sessions

2017 – 2019: Member, Experimental Circulation Committee, American Society of Anesthesiology

2018 – 2019: Co-Chair, Scholars Day Programming Committee, IARS

2018 – 2019: Member, eSAS/FAER Programming Committee, American Society of Anesthesiology Annual Meeting

2019 – Present: Member, Development Committee, FAER

2018 – 2020: Member, Communications Committee, American Physiological Society, Cardiovascular Section

2020 – Present: *ad hoc* Member, Program Steering Committee American Physiological Society, Cardiovascular Section

2020: Poster Professor, AHA Scientific Sessions Meeting, Virtual.

2020 – 2023: Nominating Chair, Translational Physiology Interest Group, American Physiological Society

2021 – Present: Member, FAER MSARF Task Force

2022 – Present: Member, External Advisory Committee, NIGMS T32 Program, Department of Anesthesiology, University of California, San Diego

2022 – 2024: Member, AUA Council Representative

2022 – 2024: Member, Nominating Committee, American Physiological Society, Cardiovascular Section

2022 – 2024: Council Member, Microcirculatory Society

2022 – 2023: Member, FAER MRTG Annual Meeting Programming Committee

2023 – 2025: Chair, Translational Physiology Interest Group, American Physiological Society

2024 – Present: Member, External Advisory Committee, NIGMS T32 Program, Department of Anesthesiology, Washington University, St. Louis MO.

2024 – 2025: Member, Steering Committee, Anesthesia Research Council (ARC)

2024 – Present: Member, External Stakeholder Panel, THRIVE Trial

2024 – 2026: Fellow, National Academy of Medicine

2024 – 2026: Member, ASA Committee on Research

2025 – 2027: Vice Chair, Anesthesia Research Council (ARC)

2024 – 2025: Member, Programming Committee, 2025 APS Sex Differences and Women’s Health Research Conference

2025 – 2026: Chair, Cardiovascular Section, American Physiological Society (APS)

2025: Planning committee member, Women’s Health and Nutrition from Menarche through Post-Menopause Workshop, National Academy of Science, Engineering, and Medicine.

2025: Member, National Academy of Medicine Workgroup on Innovative Pathways for Retaining and Supporting Physician-Scientists

2025 – 2027: Elected Member, ATVB Women’s Leadership Committee

2026 – 2029: Member, Board of Directors, American Physiological Society

2026: Planning Committee, Food Production Innovations at the Farm Level to Improve Nutrient Density and Quality of Foods Workshop, National Academies of Science, Engineering, and Medicine.

Study Sections:

2018: *ad hoc* member, Cardiovascular Center Awards Study Section, Medical College of Wisconsin

2018: *ad hoc* member, CTSI Faculty Awards Study Section, Medical College of Wisconsin

2018 – 2022: Member, IARS Mentored Research Award (IRMA) Study Section

2019 – Present: Member, Vascular Basic Science Study Section, AHA Career Development Award

2019: Peer Reviewer, IMPACT Clinical Trials Study Section, International Anesthesia Research Society (IARS)

2020: *ad hoc* Reviewer, Vascular Cell and Molecular Biology (VCMB) Study Section, NIH
 2021 – 2025: Chartered Member, Therapeutic Development and Preclinical Studies (TDPS) Study Section, NIH
 2021: *ad hoc* member, Children’s Research Institute, Medical College of Wisconsin
 2021 – 2022: *ad hoc* reviewer, Advancing a Healthier Wisconsin Endowment
 2022 – 2024: Chair, IARS Mentored Research Award (IRMA) Study Section
 2023: *ad hoc* reviewer, FAER SOAP MRTG Study Section
 2024: *ad hoc* reviewer, MCW Cardiovascular Center Awards
 2025: *ad hoc* reviewer, MCW Office of Research Institutional Cores
 2025: *ad hoc* reviewer, Healthy Longevity Catalyst Awards, National Academy of Medicine

INTERNATIONAL ELECTED/APPOINTED LEADERSHIP AND COMMITTEE POSITIONS:

2018 – 2020: Co-President, early-Stage Anesthesia Scholars
 2018 – 2020: Member, External Scientific Advisory Board, International Anesthesia Research Society (IARS)
 2018 – Present: Abstract Reviewer, IARS Annual Meeting
 2019 – 2020: Annual Meeting Oversight Committee (AMOC), International Anesthesia Research Society
 2022 – 2025: Chair, External Scientific Advisory Board, International Anesthesia Research Society
 2023 – 2023: IRMA Representative, Annual Meeting Oversight Committee (AMOC), International Anesthesia Research Society
 2025 – 2031: Member, Board of Directors, International Anesthesia Research Society

RESEARCH GRANTS/AWARDS/CONTRACTS/PROJECTS:

Active

Peer Review

Title: Clinical and Translational Science Award
 Source: NIH/NCATS UL1TR001436-10
 Role: Principal Investigator
 Dates: 08/18/2015 – 05/31/2026
 Funds: \$11,109,463 (direct funds)

Title: Clinical and Translational Science Award
 Source: NIH/NCATS UL1TR001436-10S1
 Role: Principal Investigator
 Dates: 09/17/2025 – 05/31/2026
 Funds: \$2,074,744 (direct funds)

Title: Dual Functionality of Ceramide in Human Microvascular Endothelial Function
 Source: NIH/NHLBI R01 HL160752

Role: Principal Investigator
Dates: 07/01/2022 – 06/30/2027
Funds: \$2,114,012 (direct funds)

Title: Medical College of Wisconsin Physician Scientist Immersion Program
Source: NIH/NHLBI R38 HL143561
Role: Co-Investigator
Dates: 12/01/2022 - 11/30/2027
Funds: \$1,058,017 (direct funds)

Title: Specialized Training in Anesthesiology Team Science (S.T.A.T. Program)
Source: NIH/NIGMS T32 GM148384
Role: Principal Investigator
Dates: 07/01/23 – 06/30/28
Funds: \$726,702 (direct funds)

Title: Mechanism of Chemotherapy Induced Microvascular Dysfunction in Cancer Survivors
Source: NIH/NHLBI/NCI R01 HL173549
Role: Co-Investigator
Dates: 04/01/24 – 03/31/29
Funds: \$3,486,981 (direct funds)

Pending Peer Review

Title: Promoting Human Microvascular Resiliency to Stress
Source: NHLBI R01 HL179768
Role: Principal Investigator (mPI)
Dates: 07/01/2026 – 06/30/2031
Funds: \$2,460,332 (direct funds)

Title: Estrogen and Microvascular Function
Source: NIH/NHLBI R01 HL177967
Role: Principal Investigator
Dates: 07/01/2026 – 06/30/2031
Funds: \$2,342,049 (direct funds)

Title: Dual Functionality of Ceramide in Human Microvascular Endothelial Function
Source: NIH/NHLBI 2R01 (unassigned)
Role: Principal Investigator
Dates: 10/1/2026 – 09/30/2031
Funds: \$2,397,622 (direct funds)

Prior Peer Review

Title: Critical Role of Mitochondrial Fission/Fusion in Regulation of Microvascular Endothelial Function

Source: NIH/NHLBI R01 HL157025
Role: Co-Investigator
PI: Andreas M. Beyer, MD
Dates: 08/01/2021 – 07/31/2025
Funds: \$2,667,095 (direct funds)

Title: Novel Role of Sphingolipids in Maintaining Vascular Homeostasis
Source: NIH/NHLBI K08 HL141562
Role: Principal Investigator
Dates: 10/15/2018 - 11/30/2023
Funds: \$693,475 (direct funds)

Title: Estrogen as a Regulator of the Sphingolipid Balance in the Human Microcirculation
Source: NIH/NHLBI K08HL141562-04S1
Role: Principal Investigator
Dates: 09/01/2022 - 08/31/2023
Funds: \$100,000 (direct funds)

Title: Microvascular Complications in Sickle Cell Disease: Assessment and Treatment Implications
Source: CTSI Pilot Award
Role: Co-Investigator
Dates: 06/01/24 – 05/31/25
Funds: \$50,000 (direct funds)

Title: Bridging the Gap in Translational Vascular Research
Source: Advancing a Healthier Wisconsin (AHW) endowment
Role: Principal Investigator
Dates: 05/01/2021 – 04/30/2023
Funds: \$250,000 (total for all years)

Title: Prehabilitation of Frail Surgical Cancer Patients using Remote Ischemic Preconditioning
Source: NIH/NIA R21 AG062933
Role: Principal Investigator
Dates: 04/01/2019 – 12/31/2021
Funds: \$275,000 (total for all years)

Title: The Necessary Role of Ceramide Within the Human Microcirculation
Source: American Heart Association Predoctoral Fellowship #909315
Role: Sponsor/Mentor
PI: Gopika SenthilKumar
Dates: 01/01/22 – 12/31/23
Funds: \$64,072 (total for all years)

Title: A Phase II Double Blind Randomized Controlled Trial of High Dose Vitamin B12 in Septic Shock
Source: ASPEN Rhoads Research Foundation
Role: Co-Investigator

PI: Jayshil Patel, MD
Dates: 04/2019 – 03/2021
Funds: \$50,000

Title: Percutaneous Distal Embolic Protection (PDEP) for LVAD Thrombolysis
Source: WeCare Fund for Medical Innovation and Research
Role: Co-Investigator
PI: David Joyce, MD
Dates: 06/2018 – 06/2020
Funds: \$150,000

Title: Novel Role of Sphingolipids in Maintaining Vascular Homeostasis
Source: Foundation for Anesthesia Education and Research (FAER)
Role: Principal Investigator
Dates: 01/01/2018 – 01/01/2019
Funds: \$175,000

Title: Use of Cobalamins for Treatment of Sepsis-Induced Vasoplegia
Source: Advancing a Healthier Wisconsin (AHW), Steve Cullen Healthy Heart fund
Role: Principal Investigator
Dates: 07/2018 – 06/2019
Funds: \$50,000

INVITED LECTURES/PRESENTATIONS:

Local

- 2015: Speaker, Say Yes to NO? Intraoperative Use of Inhaled Nitric Oxide, Anesthesia Education Conference, Milwaukee, WI
- 2018: Speaker, Hydroxocobalamin for Treatment of Vasoplegia, Division of Geriatrics Research Seminar, Department of Internal Medicine, Medical College of Wisconsin, Milwaukee, WI
- 2018: Speaker, From the OR to the Bench and then to the Bedside: Translation of Human Microvascular Function, Department of Medicine Grand Rounds, Medical College of Wisconsin, Milwaukee, WI
- 2018: Speaker, A Tale of Two Studies: Flow-Induced Dilation and Vasoplegia in the Human Microcirculation, Department of Physiology Seminar Series, Medical College of Wisconsin, Milwaukee, WI
- 2019: Speaker, From the Bench to the Bedside and Back Again: Developing a Translational Research Project, CTSI Seminar Series, Medical College of Wisconsin, Milwaukee, WI
- 2018 – 2020: Speaker, How to Effectively Negotiate with your Chair, Clinical Research Scholars Program, Medical College of Wisconsin, Milwaukee, WI
- 2020: Speaker, Sweat the Small Stuff: The Role of Sphingolipids in Microvascular Function, Department of Physiology Seminar Series, Medical College of Wisconsin, Milwaukee, WI
- 2020: The Role of Sphingolipids in Human Microvascular Function, ATVB Signature Program Seminar Series, Cardiovascular Center, Medical College of Wisconsin, Milwaukee, WI

- 2021: Taking the Good with the Bad: Ceramide and Human Microvascular Endothelial Function, ATVB Signature Program Seminar Series, Cardiovascular Center, Medical College of Wisconsin, Milwaukee, WI
- 2022: Prehabilitation and Ischemic Conditioning: Where Do We Go From Here? Cancer Prevention & Outcomes Research Program Seminar Series, Cancer Center, Medical College of Wisconsin, Milwaukee, WI
- 2023: Promoting Resiliency to Stress in the Human Microvasculature, Department of Physiology Seminar Series, Medical College of Wisconsin, Milwaukee, WI.
- 2024: Promoting Resiliency to Stress in the Human Microvasculature, Perioperative Clinic Seminar Series, Medical College of Wisconsin, Milwaukee, WI.
- 2024: Estrogen and Human Microvascular Function: The Good, The Bad, and the Downright Ugly. MCW Featured Speaker, 2024 Department of Medicine Research Retreat, Milwaukee, WI.
- 2026: Why Do We Send Tissue for Research? Invited Speaker, Froedtert ThedaCare Operating Room Staff Seminar Series

Regional

- 2018: From the Lab to the Clinic: How Research Breakthroughs Translate to Better Patient Care, Northeast Technical College Science Day, Green Bay, WI
- 2022: Human Microvascular Function Across the Translational Spectrum, 35th Annual Update in Primary Care, Egg Harbor Keynote Address, WI
- 2025: Beyond the Mask: Innovation in Anesthesiology, Invited Speaker, Wisconsin Society of Anesthesiologists Annual Meeting, Lake Geneva, WI

National

- 2015: Moderator, Extracellular Vesicles and Cardiovascular Disease: Good Things Come in Small Packages?, American Heart Association Scientific Sessions, Orlando, FL
- 2015: Moderator, Experimental Circulation: Cardiac Dysfunction, American Society of Anesthesiology Annual Meeting, San Diego, CA
- 2017: Speaker, Endothelial Dilator Mechanisms in Health and Disease, Experimental Biology Annual Meeting, Chicago, IL
- 2017: Session Chair, Emerging Concepts in the Local Regulation of Blood Flow, Experimental Biology Annual Meeting, Chicago, IL
- 2018: Visiting Professor, A Tale of Two Studies: Flow-Induced Dilation and Vasoplegia in the Human Microcirculation, Department of Anesthesiology, Yale University, New Haven, CT
- 2018: Visiting Professor, A Tale of Two Studies: Flow-Induced Dilation and Vasoplegia in the Human Microcirculation, University of Maryland, Shock Trauma Center, Baltimore, MD
- 2019: Visiting Professor, The Role of Sphingolipids in Endothelial Dilator Mechanisms, Research Seminar, Department of Anesthesiology, Washington University, St. Louis MO

- 2019: Visiting Professor, Translational Tales of Microvascular Function, Grand Rounds, Department of Anesthesiology, Washington University, St. Louis MO
- 2019: Visiting Professor, Microvascular Function Along the Translational Spectrum, Department of Anesthesiology Grand Rounds, Mayo Clinic, Rochester, MN
- 2019: Speaker, Early-Stage Anesthesia Scholars and the Future of Anesthesiology, American Society of Anesthesiology Annual Meeting, Orlando, FL
- 2019: Speaker, Research During Residency: Being Both Clinically Competent and Productive in Research, American Society of Anesthesiology Annual Meeting, Orlando, FL
- 2020: Moderator, Young Investigator Basic Science Oral Presentations, American Society of Anesthesiology Annual Meeting, Virtual.
- 2020: Poster Professor, Coronary, Cerebral, and Peripheral Microcirculatory Contribution to Disease, AHA Scientific Sessions Annual Meeting, Virtual.
- 2021: Tales of Translation: Human Microvascular Function and Disease, Grand Rounds Visiting Professor (Virtual), Department of Anesthesiology, Dartmouth University, Hanover, NH.
- 2021: Speaker, The Translational Tale of Hydroxocobalamin for Treatment of Microvascular Injury, Experimental Biology Annual Meeting, Virtual.
- 2021: Moderator, Sweat the Small Stuff: Sphingolipids and Cardiovascular Disease, Experimental Biology Annual Meeting, Virtual.
- 2021: Human Microvascular Function in Health and Disease: Tales of Translation, Grand Rounds Visiting Professor (Virtual), Department of Anesthesiology, Stanford University, Palo Alto, CA.
- 2021: Taking the Good with the Bad: Ceramide and Microvascular Endothelial Function in Humans, Visiting Professor (Virtual), Department of Pharmacology, Tulane University School of Medicine, New Orleans, LA.
- 2021: Translational Tales of Human Microvascular Endothelial Function, Invited Grand Rounds Speaker (Virtual), Department of Anesthesiology, Brigham and Women's Hospital, Boston, MA.
- 2022: Getting in the Game: The Importance of Academic Networking, American Society of Anesthesiology Annual Meeting, New Orleans, LA.
- 2023: Moderator, Animals are Just Small Humans? American Physiological Society Summit, Long Beach, CA.
- 2023: The Art of Academic Negotiation, FAER MRTG Annual Meeting, Washington D.C.
- 2023: How to Be Successful in Research: Perspectives from Early-ish Stage Investigators, American Society of Anesthesiologists Annual Meeting, San Francisco, CA.
- 2024: Translational Tales of Resiliency Within the Human Microvasculature, Keynote Speaker, 55th Annual Midwest Student Biomedical Research Forum, Omaha NE.
- 2024: Moderator, Catalyzing Translational Research from Preclinical to Human Studies, American Physiology Summit, Long Beach CA.

- 2024: Translational Tales of Resiliency Within the Human Microvasculature, Invited Professor (virtual), Department of Anesthesiology, Washington University, St. Louis MO.
- 2024: Promoting Resiliency to Stress in the Human Microcirculation, Invited Professor, New York University (NYU) Cardiovascular Center Seminar Series, New York, NY.
- 2024: Stronger Against Stress: Resiliency within the Human Microcirculation, Invited Professor, Brown University Cardiovascular Seminar Series. (virtual)
- 2024: Small Vessels, Big Impact: Translational Tales of the Human Microvasculature, Invited Professor, Molecular Cardiology Research Institute Seminar Series, Tufts University, Boston, MA.
- 2025: Panelist, Managing Work Life Balance in Academia, Microcirculatory Society Trainee Committee Webinar Series. (virtual)
- 2025: Mediators of Human Microvascular Endothelial Health, Invited Speaker, University of Alabama (UAB) Vascular Biology and Hypertension Symposium, Birmingham, AL.
- 2025: Translational Tales of Human Microvascular Endothelial Function, 11th Annual Drs. Gabor & Harriette Kaley Endowed Lecture, New York Medical College, Valhalla, NY.
- 2025: Increasing Resiliency to Stress in the Human Microvasculature, 28th Annual Academic Evening Grand Rounds Presentation, Department of Anesthesiology, Columbia University, New York, NY.
- 2025: Moderator, Women's Health and Nutrition from Menarche through Post-Menopause Workshop, National Academy of Science, Engineering, and Medicine
- 2026: 32nd James O. Davis Distinguished Lecturer, Dalton Cardiovascular Research Center, University of Missouri, Columbia, MO.

International

- 2017: Moderator, Expanding Our Horizons in Anesthesiology Research Training, International Anesthesia Research Society Annual Meeting, Washington D.C.
- 2018: Moderator, The "I" in "Team": Interdisciplinary Thinking for Whole-Patient Perioperative Care, International Anesthesia Research Society Annual Meeting, Chicago, IL
- 2018: Speaker, Resilience Personified: Transitioning from Trainee to Junior Faculty and Beyond, International Anesthesia Research Society Annual Meeting, Chicago, IL
- 2018: Moderator, Priorities for Developing Researchers: Perspectives from the NIH and IARS, International Anesthesia Research Society Annual Meeting, Chicago, IL, 2018
- 2019: Speaker, A Fundamental Approach to Understanding Cardiovascular Disease, AUA President's Lunch, Association of University Anesthesiologists Annual Meeting, Montreal, Canada
- 2024: Promoting Resiliency to Stress Within the Human Microcirculation, Invited Plenary Lecturer, 15th International Symposium on Mechanisms of Vasodilation and EDH, Magdalen College, Oxford UK.

2025: Moderator, IARS Webinar: An Insider's Guide to a Successful IARS Grant Application

COMMITTEE SERVICE:

Medical College of Wisconsin

2014 – 2017: Chair, Microvesicle Affinity Group, MCW Cardiovascular Center
2016 – 2017: Member, Blue Ribbon Committee, MCW Cardiovascular Center
2017 – 2018: Member, Equipment Committee, Froedtert Memorial Lutheran Hospital
2018 – 2019: Member, Clinical Translational Science Institute (CTSI) Study Section
2018 – Present: Director of Clinical Research, Department of Anesthesiology, Medical College of Wisconsin
2018 – Present: Chair, Academic Time Committee, Department of Anesthesiology
2019 – 2020: Member, MCW Cardiovascular Center Study Section
2018 – 2019: Co-Chair, Annual Retreat Programming Committee, MCW Cardiovascular Center
2020 – 2021: COVID-19 Clinical Research Administrative Committee
2020 – Present: Member, MCW Tissue Bank Executive Committee
2020 – Present: Chair, MCW Cardiovascular Tissue Bank Committee
2021 – Present: Member, Executive Operations Committee, Department of Anesthesiology
2021 – Present: Member, Advancement of Women in Science and Medicine (AWSM) Research Group
2021 – 2022: Member, Medical Scientist Training Program (MSTP) Director Search Committee
2022 – 2024: Member, School of Medicine Rank and Tenure Committee
2022 – Present: Chair, Program Evaluation Committee, Adult Cardiothoracic Anesthesiology Fellowship, MCWAH
2022 – Present: Member, Medical Scientist Training Program (MSTP) Admissions Committee
2022 – 2023: Member, Internal Review Committee for Department of Urology
2022 – 2023: Member, Promotion and Tenure Holistic Review Tenure Workgroup
2022 – 2023: Member, Department of Medicine Chair Search Committee
2023 – 2024: Member, Internal Review Committee for Department of Physical Medicine and Rehabilitation
2024 – Present: Monitor, Financial Conflicts of Interest in Research Committee
2024: Member, Cardiovascular Center Director Search Committee
2024: Member, non-Federal Clinical Trials Workgroup
2024: Member, MCW HRPP/IRB External Review
2024: Vice Chair, School of Medicine Rank and Tenure Committee
2025: Clinical Trial Activation Taskforce
2026 – Present: Senior Academic Leadership Committee (SALC)

MEDICAL COLLEGE TEACHING ACTIVITIES:

Medical Student Education

- 2004 – 2007: Teaching Assistant - Student Laboratories: Medical Physiology Course, Skeletal Muscle, Smooth Muscle and Cardiovascular Physiology
- 2012 – 2015: Instructor, Airway and IV Workshop
- 2013 – 2014: Instructor, Acid-Base Physiology, Anesthesia Rotation Curriculum
- 2017 – 2019: Small Group Facilitator for the Molecular and Cellular Research (MCR) Physician Scientist Pathway
- 2020 – 2021: Small Group Facilitator for the Clinical and Translational Research (CTR) Physician Scientist Pathway
- 2021 – 2023: Co-Director, Anesthesia Research Elective
- 2025 – Present: MCW MSTP Workshop on Translational Cardiovascular Research

Graduate School Education

- 2021: Current Topics in Physiology
- 2023: Small Group Facilitator, Responsible Conduct in Research Course
- 2024 – Present: Annual lecture in Current Concepts of Cardiovascular Biology

Resident and Fellow Education

- 2015 – 2019: Course Director, Evidence Based Medicine, Department of Anesthesiology
- 2017 – Present: Biostatistics for the Practicing Physician, Department of Anesthesiology CA-2/CA-3 Didactic Series
- 2023 – Present: Annual CA-1 Bootcamp lecture in Anesthesiology

Faculty Education

- 2018 – Present: Lecturer on Negotiation, Clinical Research Scholars Program

MCW STUDENTS, FACULTY, RESIDENTS AND CLINICAL/RESEARCH FELLOWS MENTORED:

Undergraduate Students

- 2021 – 2022: Nicole Buiters, Program for Undergraduate Research Experience (PURE)
- 2022 – 2023: Carolyn Shult, Summer Program for Undergraduate Research (SPUR)
- 2022 – 2023: Elise Raschke, Program for Undergraduate Research Experience (PURE)
- 2023 – 2024: Zachary Zirgibel, Program for Undergraduate Research Experience (PURE)

Medical Students

- 2016 – 2017: Samantha Peterson, FAER MSARF* mentor
- 2017 – 2019: Kelsey Walters, NHLBI T35 fellow mentor
- 2018 – Present: Forrest Stehula, NHLBI T35 fellow mentor
- 2018 – 2019: Sarah Meeuwsen, NIA T35 fellow mentor
- 2018 – 2020: Rhett Nance, Clinical Pathway Advisor
- 2018 – 2020: Ross Whitlock, Clinical Pathway Advisor
- 2019 – 2023: Matthew Mahoney, Clinical Pathway Advisor
- 2021 – 2024: Christian Wright, Clinical Pathway Advisor

2021 – 2024: Nisha Patel, Research Pathway Mentor
 2021 – 2023: Alec Werthman, Research/Clinical Pathway Advisor
 2022 – 2024: Taha Kothari, Clinical Pathway Advisor
 2022 – 2024: Tariq Saleh, Clinical Pathway Advisor
 2022 – 2024: Stephen Gebbia, Clinical Pathway Advisor
 2022 – 2024: Alejandro Rivas, Clinical Pathway Advisor
 2023 – 2025: Alyssa Jobes, NHLBI T35 fellow mentor
 2023 – 2025: Edward Willow, Clinical Pathway Advisor
 2023 – Present: William Butak, NHLBI T35 fellow mentor
 2024 – Present: Brett Wannebo, NHLBI T35 fellow mentor
 2025: Quynlan Duffy, FAER MSARF mentor
 2025 – Present: Tung Nguyen PhD, MSSRP mentor
 2025 – Present: Aiden Flynn, Clinical Pathway Advisor

*Foundation for Anesthesia Education and Research (FAER) Medical Student Anesthesia Research Fellowship (MSARF)

Graduate Students

2020 – 2024: Gopika SenthilKumar, Medical Scientist Training Program
 Primary Thesis Advisor
2023 Elaine W. Raines Early Career Investigator Award, AHA
2024 1st Place, Outstanding Graduate Student Award, APS
2024 1st Place, Outstanding Dissertation Award
2024 Excellence in Physiology Award

2024 – Present: Rachel H. Limpert, Interdisciplinary Program in Biomedical Sciences
 Primary Thesis Advisor
2025 MCS Gabor Kaley Award Featured Topic Session

2025 – Present: Rashi Purohit, Medical Scientist Training Program
 Primary Thesis Advisor
MCS Travel Award for Sex Differences and Women's Health Research Conference

2023 – Present: Emma Tillison, Medical Scientist Training Program (Biochemistry)
 Thesis Committee Member

2024 – Present: Mina Ghobrial, Medical Scientist Training Program (Physiology)
 Thesis Committee Member

2024 – Present: Taylor Wilcox, Interdisciplinary Program in Biomedical Sciences
 Qualifying Exam Committee Member

2025 – Present: Coneria Nansubuga, Interdisciplinary Program in Biomedical Sciences
 Thesis Committee Member

2026 – Present: Byamba Enkhtuul, Interdisciplinary Program in Biomedical Sciences
 Thesis Committee Member

Residents

2017 – 2020: Julie Harvey, MD
2018 – 2022: Steven Kapeles, MD
2021 – 2025: Natasha Topoluk, MD, PhD
2022 – Present: Boran Katunaric, MD

Clinical/Research Fellows

2019 – 2022: Boran Katunaric MD, post-doctoral fellow, primary mentor
2022 MCS Pappenheimer Travel Award Recipient

2019 – 2024: Katie E. Cohen MD, NHLBI R38 fellow, primary mentor
2021 – 2024: Rosinda De La Pena MD, clinical fellow, thesis committee
2023 – Present: Alicen Whitaker PhD, NHLBI T32 fellow, mentoring committee
2023 – 2025: Maria Jose Jaramillo Torres MD, postdoctoral fellow, primary mentor
2023 – 2024: John R. Shepard MD, cardiac anesthesia fellow, clinical mentor
2025 – Present: Sameer Guru PhD, postdoctoral fellow, mentoring committee
2025 – Present: Natalia Mathieu PhD, postdoctoral fellow, mentoring committee
2025 – Present: Tijana (Jo) Simovic, post-doctoral fellow, primary mentor
2026 – Present: Mackenzie Kehmeier, AHA Postdoctoral Fellowship, co-sponsor

Junior Faculty

2023 – Present: Lei Fan, PhD, Dept of Bioengineering (secondary research mentor)
2025 – Present: Jaime Jasti, MD, Dept of Emergency Medicine (CliMB mentor)

PROGRAMMATIC DEVELOPMENTS:

Research Programs

2018 – Present: Founding Director, Clinical Research Division, Department of Anesthesiology, Medical College of Wisconsin
2020 – Present: Human Vascular Tissue Bank, Cardiovascular Center, Medical College of Wisconsin
2023 – Present: Founding Director, Clinical Mentoring Board (CliMB), Office of Research, Medical College of Wisconsin

PROFESSIONAL DEVELOPMENT:

02/27/2015: Leadership for Social Inclusion and Equity Workshop
01/23/2020: Center for Improvement of Mentored Experiences in Research (CIMER) Training Course
01/2020 – 05/2020: Responsible Conduct of Research Course, Department of Bioethics, Medical College of Wisconsin
06/02/2021: National Coalition Building Institute (NCBI) Welcoming Diversity Exposure Workshop
09/2021 – 10/2021: Clinical Trialist Training 101 Seminar Series
09/23/2021: Eliminating Bias In Peer Review Course, NIH Center for Scientific Review
02/2022 – 05/2022: Raising a Resilient Scientist Seminar Series, NIH OITE
10/03/2022: Review Integrity Course, NIH Center for Scientific Review
05/08/2023: Facilitator, Responsible Conduct of Research Refresher Course on Peer Review, Medical College of Wisconsin

05/12/2025: Facilitator, Responsible Conduct of Research Refresher Course on Data Ownership, Medical College of Wisconsin

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Refereed Journal Publications/Original Papers

1. **Freed JK**, Smith JR, Li P, Greene AS. Isolation of signal transduction complexes using biotin and crosslinking methodologies. *Proteomics*. 2007 Jul;7(14):2371-4. PMID: 17623297.
2. **Freed JK**, Greene AS. Proteomic analysis of shear stress-mediated protection from TNF alpha in endothelial cells. *Microcirculation*. 2010 May;17(4):259-70. PMCID: PMC3712086 PMID: 20536739.
3. **Freed JK**, Shortreed MR, Kleefisch CJ, Smith LM, Greene AS. Revealing the role of phosphatidylserine in shear stress-mediated protection in endothelial cells. *Endothelium*. 2008 Jul-Aug;15(4):225-30. PMCID: PMC2579788 PMID: 18663626.
4. **Freed JK**, Gutterman DD. Mitochondrial reactive oxygen species and vascular function: less is more. *ATVB*. 2013 Apr;33(4):673-5. PMID: 23486769.
5. **Freed JK**, Beyer AM, LoGiudice JA, Hockenberry JC, Gutterman DD. Ceramide changes the mediator of flow-induced vasodilation from nitric oxide to hydrogen peroxide in the human microcirculation. *Circ Res*. 2014 Aug 15;115(5):525-32. PMCID: PMC4640193 PMID: 24920698.
6. Beyer AM, **Freed JK**, Durand MJ, Riedel M, Ait-Aissa K, Green P, Hockenberry JC, Morgan RG, Donato AJ, Peleg R, Gasparri M, Rokkas CK, Santos JH, Priel E, Gutterman DD. Critical Role for Telomerase in the Mechanism of Flow-Mediated Dilation in the Human Microcirculation. *Circ Res*. 2016 Mar 04;118(5):856-66. PMCID: PMC4772813 PMID: 26699654.
7. Khatib D, Boettcher BT, **Freed JK**, Pagel PS. Acute, Severe Pulmonary Arterial Hypertension During Off-Pump Coronary Artery Surgery: Is New Myocardial Ischemia, Cardiac Repositioning, or External Mitral Valve Compression the Culprit? *J Cardiothorac Vasc Anesth*. 2016 Dec;30(6):1744-1747. PMID: 27431596.
8. Pagel PS, Boettcher BT, De Vry DJ, **Freed JK**, Iqbal Z. Moderate Aortic Valvular Insufficiency Invalidates Vortex Formation Time as an Index of Left Ventricular Filling Efficiency in Patients With Severe Degenerative Calcific Aortic Stenosis Undergoing Aortic Valve Replacement. *J Cardiothorac Vasc Anesth*. 2016 Oct;30(5):1260-5. PMID: 27474333.
9. Arain SR, **Freed JK**, Novalija J, Pagel PS, Ebert TJ. Short-Term Angiotensin Subtype 1 Receptor Blockade Does Not Alter the Circulatory Responses to Sympathetic Nervous System Modulation in Healthy Volunteers Before and During Sevoflurane Anesthesia: Results of a Pilot Study. *J Cardiothorac Vasc Anesth*. 2016 Dec;30(6):1479-1484. PMID: 27751762.

10. Gutterman DD, Chabowski DS, Kadlec AO, Durand MJ, **Freed JK**, Ait-Aissa K, Beyer AM. The Human Microcirculation: Regulation of Flow and Beyond. *Circ Res*. 2016 Jan 08;118(1):157-72. PMID: 26837746. PMCID: PMC4742348
11. Boettcher BT, Woehlck HJ, Reck SE, Hong JC, Zimmerman MA, Kim J, Zundel MT, **Freed JK**, Pagel PS. Treatment of Vasoplegic Syndrome With Intravenous Hydroxocobalamin During Liver Transplantation. *J Cardiothorac Vasc Anesth*. 2017 08;31(4):1381-1384. PMID: 28012726.
12. Pagel PS, Davidovich RM, Steck DT, **Freed JK**, Boettcher BT. A Rare Complication of Metastatic Osteosarcoma. *J Cardiothorac Vasc Anesth*. 2017 08;31(4):1540-1541. PMID: 28094173.
13. **Freed JK**, Durand MJ, Hoffmann BR, Densmore JC, Greene AS, Gutterman DD. Mitochondria-regulated formation of endothelium-derived extracellular vesicles shifts the mediator of flow-induced vasodilation. *Am J Physiol Heart Circ Physiol*. 2017 May 01;312(5):H1096-H1104. PMID: 28213406. PMCID: PMC5451582
14. Ebert TJ, Novalija J, Barney JA, Uhrich TD, Arain SR, **Freed JK**, Pagel PS. Moderate, Short-Term, Local Hyperglycemia Attenuates Forearm Endothelium-Dependent Vasodilation After Transient Ischemia-Reperfusion in Human Volunteers. *J Cardiothorac Vasc Anesth*. 2017 Oct;31(5):1649-1655. PMID: 28284926.
15. Kadlec AO, Chabowski DS, Ait-Aissa K, Hockenberry JC, Otterson MF, Durand MJ, **Freed JK**, Beyer AM, Gutterman DD. PGC-1 α (Peroxisome Proliferator-Activated Receptor γ Coactivator 1- α) Overexpression in Coronary Artery Disease Recruits NO and Hydrogen Peroxide During Flow-Mediated Dilatation and Protects Against Increased Intraluminal Pressure. *Hypertension*. 2017 07;70(1):166-173. PMID: 28533333. PMCID: PMC5485836
16. Pagel PS, Sethi P, **Freed JK**, Boettcher BT, Hossein Almassi G. A Rare Complication of Cardiopulmonary Resuscitation After Mitral Valve Replacement. *J Cardiothorac Vasc Anesth*. 2017 04;31(2):770-772. PMID: 27693210.
17. **Freed JK**, Gutterman DD. Communication Is Key: Mechanisms of Intercellular Signaling in Vasodilation. *J Cardiovasc Pharmacol*. 2017 May;69(5):264-272. PMID: 28482351. PMCID: 5424612
18. Pagel PS, Dye L 3rd, Boettcher BT, **Freed JK**. Advanced Age Attenuates Left Ventricular Filling Efficiency Quantified Using Vortex Formation Time: A Study of Octogenarians With Normal Left Ventricular Systolic Function Undergoing Coronary Artery Surgery. *J Cardiothorac Vasc Anesth*. 2018 08;32(4):1775-1779. PMID: 29525195.
19. Pagel PS, Dye L 3rd, Hill GED, Vega JL, Tawil JN, De Vry DJ, Chandrashekarappa K, Iqbal Z, Boettcher BT, **Freed JK**. Noninvasive Determination of Vortex Formation Time Using Transesophageal Echocardiography During Cardiac Surgery. *J Vis Exp*. 2018 11 28(141). PMID: 30582607.
20. Dye L 3rd, **Freed JK**, Leschke JR, Pagel PS. A Rare Cause of Intermittent Dyspnea, Occasional Palpitations, and Atypical Chest Discomfort. *J Cardiothorac Vasc Anesth*. 2018 08;32(4):2031-2033. PMID: 29196139.

21. **Freed JK**, Simon JA, Iqbal Z, Almassi GH, Pagel PS. An Unusual Cause of an Isolated Transient Ischemic Attack in an Otherwise Healthy Elderly Man. *J Cardiothorac Vasc Anesth.* 2018 06;32(3):1529-1532. PMID: 28927695.
22. Zundel MT, Feih JT, Rinka JRG, Boettcher BT, **Freed JK**, Kaiser M, Ghadiali HY, Tawil JN, Woehleck HJ, Pagel PS. Hydroxocobalamin With or Without Methylene Blue May Improve Fluid Balance in Critically Ill Patients With Vasoplegic Syndrome After Cardiac Surgery: A Report of Two Cases. *J Cardiothorac Vasc Anesth.* 2018 02;32(1):452-457. PMID: 28778773.
23. **Freed JK**, Dyer AJ, Olund TJ, Veldheer DJ, Boettcher BT, Pagel PS. An Unusual Finding in a Woman Undergoing Resection of a Large Anterior Mediastinal Mass. *J Cardiothorac Vasc Anesth.* 2018 04;32(2):1090-1092. PMID: 28774641.
24. Boettcher BT, Mungara C, Manupipatpong KK, **Freed JK**, Kaiser M, Pagel PS. An Unexpected Finding During Repair of An Ascending Aortic Aneurysm. *J Cardiothorac Vasc Anesth.* 2018 02;32(1):600-602. PMID: 28552298.
25. **Freed JK**, Simon JA, Iqbal Z, Almassi GH, Pagel PS. An Unusual Cause of an Isolated Transient Ischemic Attack in an Otherwise Healthy Elderly Man. *J Cardiothorac Vasc Anesth.* 2018 32(3):1529–1532. PMID: 28927695.
26. **Freed JK** and Durand MJ. There is No Way to Sugar Coat It: You Are Getting Older. *Am J Physiol Heart Circ Physiol.* 2018 Sep 1;315(3):H632-H633. PMID: 29906230.
27. Patel JJ, Venegas-Borsellino C, Willoughby R, **Freed JK**. High-Dose Vitamin B12 in Vasodilatory Shock: A Narrative Review. *Nutr Clin Pract.* 2019 Aug;34(4):514-520. PMID: 31187494.
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29. Pagel PS, **Freed JK**, Lien CA. A 50-year analysis of gender differences in United States authorship of original research articles in two major anesthesiology journals. *Scientometrics.* 2019.
30. Pagel PS, **Freed JK**, Lien CA. Gender Composition and Trends of Journal of Cardiothoracic and Vascular Anesthesia Editorial Board Membership: A 33-Year Analysis, 1987-2019. *J Cardiothorac Vasc Anesth.* 2019 Dec;33(12):3229-3234. PMID: 31412981.
31. Schulz ME, Katunaric B, Hockenberry JC, Gutterman DD, **Freed JK**. Manipulation of the Sphingolipid Rheostat Influences the Mediator of Flow-Induced Dilation in the Human Microvasculature. *J Am Heart Assoc.* 2019 Sep 3;8(17):e013153. PMCID: PMC6755855 PMID: 31462128.
32. Pagel PS, Lazicki TJ, Izquierdo DA, Boettcher BT, Tawil JN, **Freed JK**. Characteristics associated with Publication of Randomized Controlled Trials in the Journal of Cardiothoracic

and Vascular Anesthesia: A 15-Year Analysis, 2004-2018. *J Cardiothorac Vasc Anesth*. 2019 Nov 21. PMID: 31836407.

33. Pagel PS, Tawil JN, **Freed JK**. Cobalt Blues: A New Complication of Hydroxocobalamin Therapy for Vasopressor-Resistant Vasoplegia in Patients Treated With Chronic Renal Replacement Therapy? *J Cardiothorac Vasc Anesth*. 2019 Dec;33(12):3406-3408. PMID: 31537403.

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35. **Freed JK** and Durand MJ. You Are Only as Frail as Your Arteries: Prehabilitation of Elderly Surgical Patients. *Curr Anes Reports* 2019 Nov 9;(4):380-386.

35. **Freed JK**. Healing the Broken Heart With Adrenomedullin. *Circ Res*. 2019 01 04;124(1):1517. PMID: 30605409.

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37. Pagel PS, Tawil JN, Boettcher BT, Izquierdo DA, Lazicki TJ, Crystal GC, **Freed JK**. Heart failure with preserved ejection fraction: a comprehensive review and update on diagnosis, pathophysiology, treatment, and perioperative implications. *J Cardiothorac Vasc Anesth* 2021 Jun;35(6):1839-1859. PMID: 32747202.

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39. Gaulton TG, Neuman MD; **US intubateCOVID Investigators.**; Trends in personal protective equipment use by clinicians performing airway procedures for patients with coronavirus disease 2019 in the USA from the intubateCOVID registry. *Br J Anaesth*. 2021 Feb 2:S0007-0912(21)00041-6. PMID: 33612248 PMCID: 8052559.

40. Joyce D, Lynch B, **Freed JK**, Baumann Kreuziger L, Sallinger M, Joyce L. Catheter Based System for the Treatment of Left Ventricular Assist Device Thrombosis. *Artif Organs*. 2022 Apr;46(4):705-709. doi: 10.1111/aor.14184. Epub 2022 Feb 3. PubMed PMID: 35080023.

41. Cohen KE, Katunarcic B, SenthilKumar G, McIntosh JJ, and **Freed JK**. Vascular Endothelial Adiponectin Signaling Across the Lifespan. *Am J Physiol Heart Circ Physiol*. 2022 Jan 1;322(1):H57-H65. PMCID: 8698498 PMID: 34797171.

42. Cohen KE, Katunarcic B, Schulz ME, SenthilKumar G, Young MS, Mace JE, and **Freed JK**. Role of Adiponectin Receptor 1 in Promoting Nitric Oxide-Mediated Flow-Induced Dilation in the Human Microvasculature. *Front Pharmacol*. 2022;13:875900. doi:

10.3389/fphar.2022.875900. eCollection 2022. PubMed PMID: 35444544; PMCID: 9014203.

43. Schulz ME, Hockenberry JC, Katunarcic B, Pagel PS, and **Freed JK**. Blockade of Endothelial Mas Receptor Restores the Vasomotor Response to Phenylephrine in Human Resistance Arterioles Pretreated with Captopril and Exposed to Propofol. *BMC Anesthesiol*. 2022 Jul 29;22(1):240. doi: 10.1186/s12871-022-01786-3. PMID: 35906533; PMCID: 9336100.

44. Boettcher BT, Woehlck HJ, Makker H, Pagel PS, Zimmerman MA, Hong JC, and **Freed JK**. Hydroxocobalamin for Treatment of Catecholamine-Resistant Vasoplegia During Liver Transplantation: A Single-Center Series of 20 Cases. *Int J Surg Case Rep*. 2022 Sep;98:107488. doi: 10.1016/j.ijscr.2022.107488. Epub 2022 Aug 10. PMID: 35981485; PMCID: 9399471.

45. Patel JJ, Willoughby R, Peterson J, Carver T, Zelten J, Markiewicz A, Wollak K, Hipp L, Canales B, Szabo A, Heyland D, Stoppe C, Zielonka J, and **Freed JK**. High-Dose Hydroxocobalamin (Vitamin B12) in Septic Shock: A Double-Blind, Placebo-Controlled Single-Center Pilot Randomized Controlled Trial. *Chest*. 2022 Sep 26:S0012-3692(22)03890-9. doi: 10.1016/j.chest.2022.09.021. Epub ahead of print. PMID: 36174744.

46. Katunarcic B, SenthilKumar G, Schulz ME, De Oliveira N, **Freed JK**. S1P (Sphingosine-1-Phosphate)-Induced Vasodilation in Human Resistance Arterioles During Health and Disease. *Hypertension*. 2022 Oct;79(10):2250-2261. Epub 2022 Aug 22. PMID: 36070401; PMCID: PMC9473289. ***Selected for journal tweet discussion**

47. SenthilKumar G, Gutierrez-Huerta CA, **Freed JK**, Beyer AM, Fancher IS, LeBlanc AJ. New developments in translational microcirculatory research. *Am J Physiol Heart Circ Physiol*. 2022 Dec 1;323(6):H1167-H1175. Epub 2022 Oct 28. PMID: 36306213; PMCID: PMC9678417.

48. SenthilKumar G, Katunarcic B, Bordas-Murphy H, Young M, Doren EL, Schulz ME, Widlansky ME, **Freed JK**. 17 β -Estradiol promotes sex-specific dysfunction in isolated human arterioles. *Am J Physiol Heart Circ Physiol*. 2023 Mar 1;324(3):H330-H337. Epub 2023 Jan 6. PMID: 36607795; PMCID: PMC9925162. **Invited Podcast, APSelect Winner, 2024 Most Cited AJP Rapid Report Award**

49. SenthilKumar G, Katunarcic B, Bordas-Murphy H, Sarvaideo J, and **Freed JK**. Estrogen and the Vascular Endothelium: The Unanswered Questions. *Endocrinology*. 2023 Apr 17;164(6):bqad079. PMID: 37207450. **Top 10% Most Cited in 2024**

50. SenthilKumar G, Mathieu NM, **Freed JK**, Sigmund CD, Gutterman DD. Addressing the decline in graduate students' mental well-being. *Am J Physiol Heart Circ Physiol*. 2023 Oct 1;325(4):H882-H887. PMID: 37624099.

51. SenthilKumar G, Katunarcic B, Zirgibel Z, Lindemer B, Jaramillo-Torres MJ, Bordas-Murphy H, Schulz ME, Pearson PJ, **Freed JK**. Necessary Role of Ceramides in the Human Microvascular Endothelium During Health and Disease. *Circ Res*. 2024 Jan 5;134(1):81-96.. PMID: 38037825; PMCID: PMC10766100. ***Selected for journal podcast**

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54. SenthilKumar G, Hammond ST, Zirgibel Z, Cohen KE, Beyer AM, **Freed JK**. Is the peripheral microcirculation a window into the human coronary microvasculature? *J Mol Cell Cardiol*. 2024 Jun 5;193:67-77. Epub ahead of print. PMID: 38848808.
55. SenthilKumar G, Zirgibel Z, Cohen KE, Katunaric B, Jobe AM, Shult CG, Limpert RH, **Freed JK**. Ying and Yang of Ceramide in the Vascular Endothelium. *Arterioscler Thromb Vasc Biol*. 2024 Jun 20. Epub ahead of print. PMID: 38899471.
56. SenthilKumar G, Limpert RH, Lindemer BJ, **Freed JK**. Acetylcholine-Induced Dilation in Human Arterioles Requires Ceramide Formation. *Arterioscler Thromb Vasc Biol*. 2024 Jun 27. Epub ahead of print. PMID: 38934116. ***ATVB Featured Article for July 2024**
57. Jaramillo-Torres MJ, Limpert RH, Butak WJ, Cohen KE, SenthilKumar G, Whitaker-Hilbig AA, Durand MJ, and **Freed JK**. Promoting Resiliency to Stress in the Vascular Endothelium. *Basic Clin Pharmacol Toxicol*. 2025 Mar;136(3):e70001. PMID: 39936288.
58. Pagel PS, Hang D, **Freed JK**, and Crystal GJ. Advances in Cardiovascular Pharmacotherapy: I. Cardiac Myosin Inhibitors. *J Cardiothorac Vasc Anesth*. 2025 Feb 7:S1053-0770(25)00120-X. doi: 10.1053/j.jvca.2025.02.009. Epub ahead of print. PMID: 40000285.
59. Pagel PS, Hang D, **Freed JK**, Crystal GJ. Advances in Cardiovascular Pharmacotherapy. II. Ivabradine, an Inhibitor of the Hyperpolarization-Activated Cyclic Nucleotide-Gated Channel. *J Cardiothorac Vasc Anesth*. 2025 Mar 20:S1053-0770(25)00247-2. doi: 10.1053/j.jvca.2025.03.029. Epub ahead of print. PMID: 40199701.
60. Pagel PS, Hang D, **Freed JK**, and Crystal GJ. Advances in Cardiovascular Pharmacotherapy: III. Sodium-glucose cotransport type 2 inhibitors, part 1: efficacy in heart failure and myocardial infarction. *J Cardiothorac Vasc Anesth*. 2025 May 9:S1053-0770(25)00368-4. Epub ahead of print. PMID: 40473549.
61. Bao PH, Friedland DR, Adams JA, **Freed JK**, Khani M, Luo J. Assessment of Anesthetic Modalities in Otolologic Surgery. *Otol Neurotol Open*. 2025 Jul 14;5(3):e075. doi: 10.1097/ONO.0000000000000075. PMID: 41017797; PMCID: PMC12466899.
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65. Pagel PS, Hang D, **Freed JK**, Crystal GJ. Advances in Cardiovascular Pharmacotherapy. V. Molecular Targets in Transthyretin Amyloid Cardiomyopathy. *J Cardiothorac Vasc Anesth*. 2025 Aug 6:S1053-0770(25)00652-4. doi: 10.1053/j.jvca.2025.08.006. Epub ahead of print. PMID: 41038755.
66. Castro AL, Makker H, Gonzalez LS, Jensen A, Tarima SS, Pagryzinski A, Thapa R, Qureshi A, Fadumiye C, Weierstahl K, Pearson P, **Freed JK**. Pecto-intercostal fascial plane block with or without rectus sheath block in cardiac surgery: a prospective, randomized, double-blind placebo-controlled study. *Reg Anesth Pain Med*. 2025 Sep 21:rapm-2025-106954. doi: 10.1136/rapm-2025-106954. Epub ahead of print. PMID: 40983372.
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68. Plambeck CJ, **Freed JK**, Canales B, Rein LE, Tarima S, Kothari T, Vandenberg M, LiaBraaten B, Hainsworth KR. The Association Between Preoperative Tamsulosin Use and Intraoperative Hypotension. *J Cardiothorac Vasc Anesth*. 2025 Dec 23:S1053-0770(25)01238-8. doi: 10.1053/j.jvca.2025.12.024. Epub ahead of print. PMID: 41558917.
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Book Chapters

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3. Pagel PS, **Freed JK**: Cardiac physiology, Kaplan's Essential of Cardiac Anesthesia for Cardiac Surgery, 2nd Edition. Edited by Kaplan JA, Cronin B, Maus T, Philadelphia, Elsevier Churchill Livingstone, 2017, pp. 62-79.

4. Freed JK. Appendix D: COVID-19 Considerations, Pocket Anesthesia, 4th Edition. Edited by Richard D. Urman and Jesse M. Ehrenfeld, Wolters Kluwer, 2020.
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Abstracts

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2. **Freed JK (Antczak)** and Greene AS. Proteomic Analysis of Shear Stress Protection Mechanisms in Endothelial Cells. *FASEB J*, 20:A1298, 2006. Poster Presentation.
3. **Freed JK**, Smith JR, Li P, Greene AS. MS Analysis of the TNF-alpha Signaling Complex Using a Novel Signaling Complex Isolation Approach. *JASMS*, 2006. Poster Presentation.
4. **Freed JK**, and Greene AS. Functional Proteomic Analysis of Shear Stress Protection Mechanisms Using a Novel Signaling Complex Isolation Approach. *FASEB J*. 2007;21 A859. Poster presentation.
5. **Freed JK**, Shortreed MR, Kleefisch CJ, Smith LM, Greene AS. Isolation and Relative Quantification of Phosphatidylserine from Vascular Endothelial Cells. *JASMS*, 2007. Poster Presentation.
6. **Freed JK**, Beyer AM and Gutterman DD. Transition in Mechanism of Flow-Mediated Dilation During Stress in Humans: Role of Ceramide. *Circulation*. 2012;126: A13659. **Podium Presentation.**

7. **Freed JK**, Beyer AM, and Gutterman DD. Inhibition of Neutral Sphingomyelinase Prevents High Pressure-Induced Shift in the Mediator of Endothelium-Dependent Dilation from NO to H₂O₂ *FASEB J.* 2013;27:901.1. Poster Presentation.
8. **Freed JK**, Durand MJ, Kaul S, Densmore JC, and Gutterman DD. Ceramide-Induced Microparticles Alter the Mechanism of Flow-Mediated Dilation. *Circulation.* 2013;128:A11407. **Podium Presentation.**
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10. **Freed JK**, Hockenberry JC, and Gutterman DD. Manipulation of the Sphingolipid Rheostat Alters the Mediator of Flow-Induced Dilation in the Human Microcirculation. *Circulation.* 2014; 130:A16304. **Podium Presentation at AHA Scientific Sessions.**
11. Durand MJ, **Freed JK**, Hockenberry JC, and Gutterman DD. The DRP-1 Inhibitor Mdivi-1 Prevents Compensatory Mitochondrial H₂O₂-Mediated Vasodilation Induced by Ceramide Treatment in Human Adipose Arterioles. APS Physiological Bioenergetics Conference, Tampa, FL. 2015. Poster Presentation.
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14. Boettcher BT, De Vry DJ, **Freed JK**, Pagel PS. Moderate Aortic Valvular Insufficiency Falsely Elevates Vortex Formation Time in Patients with Calcific Degenerative Aortic Stenosis Undergoing Aortic Valve Replacement. Society of Cardiac Anesthesia Annual Meeting, San Diego, CA. 2016. Poster Presentation.
15. **Freed JK**, Durand MJ, Hoffmann BR, Densmore JC, Greene AS, and Gutterman DD. Contribution of Mitochondrial Oxidative Stress in the Formation of Endothelial-Derived Microvesicles. Association of University Anesthesiologists & International Anesthesiology and Research Society Annual Meetings, San Francisco, CA. 2016. Poster Presentation.
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17. Khatib D, Steck DT, Choi C, **Freed JK**, Boettcher BT, and Pagel PS. Advanced Age Attenuates Left Ventricular Filling Efficiency Quantified Using Vortex Formation Time is Attenuated in Patients Undergoing Coronary Artery Bypass Surgery. Society of Cardiac Anesthesia Annual Meeting, Orlando, FL. 2017. Poster Presentation.

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20. **Freed JK**, Schulz ME, Beyer AD, Hockenberry JC, and Gutterman DD. Manipulation of the Sphingolipid Pathway Determines the Mediator Released During Flow-Induced Dilation in the Human Microcirculation. Post Graduate Assembly in Anesthesiology Annual Meeting. New York, NY. 2017. Poster Presentation.
21. Gutterman DD, Zhang D, Beyer AB, Durand MC, and **Freed JK**. Endothelium-dependent Vasodilation in the Human Microcirculation: A Switch in Mechanism with Disease or Stress. American Physiological Society Interface of Mathematical Models in Experimental Biology: Role of the Microvasculature. Scottsdale, AZ. 2019. Poster Presentation.
22. Schulz ME, Gutterman DD, and **Freed JK**. Sphingolipids Influence the Mediator of Flow Induced Dilation: Role of Neutral Ceramidase. NHLBI K to R Annual Meeting. Bethesda, MD. July 2019. Poster Presentation.
23. Katunatic B, Schulz ME, and **Freed JK**. Sphingosine-1-Phosphate Induced Vasodilation of Human Arterioles: Role of S1P Receptor 1. CVC Annual Retreat. October 2019. Milwaukee, WI. Poster Presentation. ***first-place winner within research staff category**
24. Hill GED, **Freed JK**, Lien CA, and Pagel PS: Gender differences in US authorship of research articles in two major anesthesiology journals: a 40-year analysis, 1997-2017. IARS Annual Meeting, Montreal, Canada. 2019. Poster Presentation.
25. Katunatic B, Schulz ME, and **Freed JK**. Sphingosine-1-Phosphate Receptor 1 Mediated Vasodilation in Human Arterioles. *FASEB J.* 2020;34. Poster Presentation.
26. Cohen KE, Schulz ME, Gutterman DD, and **Freed JK**. Role of AMPK in Adiponectin-Mediated Restoration of Nitric Oxide-Dependent Flow Induced Dilation in the Human Microvasculature. *FASEB J.* 2020;34. Poster Presentation.
27. Hader SN, Norwood Toro LE, Didier D, McIntosh JJ, **Freed JK**, Kong A, Gutterman DD, and Beyer AM. Trading One Disease for Another: A Longitudinal Study on the Effects of Anti-Cancer Therapies on the Human Microvasculature. *ATVB.* 2020;40:A376. Poster Presentation.
28. Schulz ME, Gutterman DD, and **Freed JK**. Role of Neutral Sphingomyelinase in Maintaining Flow-Induced Dilation Following Acute Stress in the Human Microvasculature. *ATVB.* 2020;40:A540. Poster Presentation.

29. Schulz ME, Gutterman DD, and **Freed JK**. Activation of Neutral Sphingomyelinase Contributes to Nitric Oxide-Mediated Flow-Induced Dilation in the Human Microvasculature. *FASEB J*. 2020;34. Poster Presentation.
30. Norwood Toro LE, Hader SN, Didier D, McIntosh JJ, **Freed JK**, Kong A, and Beyer AM. Effects of Anti-Cancer Therapy on Human Microvascular Function- A Longitudinal Study. *FASEB J*. 2020;34. Poster Presentation.
31. Cohen KE, Schulz ME, Gutterman DD, and **Freed JK**. Role of AMPK in Determining the Mediator of Flow-Induced Dilation in the Human Microvasculature. *FASEB J*. 2021;35. Poster Presentation.
32. Katunatic B, Stehula FJ, Schulz ME, Gutterman DD, and **Freed JK**. Human Microvascular Reactivity *in vivo* Using Incident Dark Field Videomicroscopy. MCW Virtual Graduate School and Post-Doctoral Education Office Research Day. 2021. ***selected winner in post-doctoral fellow category**
33. Katunatic B, Stehula FJ, Schulz ME, Gutterman DD, and **Freed JK**. Human Microvascular Reactivity *in vivo* Using Incident Dark Field Videomicroscopy. *FASEB J*. 2021;35. Poster Presentation.
34. Katunatic B, Schulz ME, and **Freed JK**. Investigation of S1P-induced Vasodilation in the Human Microvasculature. *FASEB J*. 2021;35. Poster Presentation.
35. Schulz ME, Katunatic B, Cohen KE, Gutterman DD, and **Freed JK**. Investigation of the Dual Functional Role of Ceramide in the Human Microcirculation. *FASEB J*. 2021;35. Poster Presentation.
36. Schulz ME, Katunatic B, Cohen KE, Gutterman DD, and **Freed JK**. Investigation of the Dual Functional Role of Ceramide in the Human Microcirculation. MCW CVC Annual Retreat 2021. ***first place winner research staff category**
37. Patel N, Durand MJ, Lauer KK, and **Freed JK**. Preoperative Optimization Time for Surgical Oncology Patients: Is Prehabilitation Feasible? Wisconsin Society of Anesthesiology Annual Meeting. 2021. Poster Presentation.
38. SenthilKumar G, Katunatic B, Bordas-Murphy H, Young M, Buitter NJ, and **Freed JK**. Is Estrogen a Friend or Foe of the Human Microcirculation? MCW CVC Annual Retreat. 2021. Poster Presentation.
39. Katunatic B, SenthilKumar G, Schulz ME, and **Freed JK**. Role of NOX2 in Ceramide-Induced Human Microvascular Endothelial Dysfunction. MCW CVC Annual Retreat. 2021. Poster Presentation.
40. Katunatic B, SenthilKumar G, Schulz ME, and **Freed JK**. Role of NOX2 in Ceramide-Induced Human Microvascular Endothelial Dysfunction. *FASEB J*. 2022;36. Poster Presentation. ***MCS Pappenheimer Travel Award Recipient**

41. SenthilKumar G, Katunarcic B, Bordas-Murphy H, Young M, Buitter NJ, and **Freed JK**. Is Estrogen a Friend or Foe of the Human Microcirculation? *FASEB J*. 2022;36. ***selected for oral presentation, Wiggers Award Symposium**
42. SenthilKumar G, Katunarcic B, Bordas-Murphy H, Young M, Buitter NJ, and **Freed JK**. Is Estrogen a Friend or Foe of the Human Microcirculation? Annual Advancing Women in Science and Medicine (AWSM) Symposium, Milwaukee WI. February 2022. Poster Presentation. ***first place winner in laboratory/clinical research category**
43. SenthilKumar G, Katunarcic B, Murphy HB, Schulz ME, and **Freed JK**. Sphingosine-1-Phosphate Signaling in the Human Microvascular Endothelium During Health and Disease. *Arteriosclerosis, Thrombosis, and Vascular Biology* 2022 Vol. 42 Issue Suppl 1; A470. Poster Presentation.
44. SenthilKumar G, Katunarcic B, Murphy HB, and **Freed JK**. Exogenous Sphingosine-1-Phosphate Restores Nitric Oxide-Mediated Flow-Induced Dilation During Acute Inhibition of Ceramide Formation. *Circulation*. 2022;146:A12364. **Podium Presentation at AHA Scientific Sessions.**
45. SenthilKumar G, Shult C, Bordas-Murphy H, and **Freed JK**. Estrogen Induces Senescence in Male Endothelial Cells via Neutral Sphingomyelinase-Mediated Ceramide Formation. APS Summit, Long Beach, CA. April 2023;38. **Selected for oral presentation and APS CV Section Research Recognition Award.**
46. SenthilKumar G, Katunarcic B, Bordas-Murphy H, Schulz ME, and **Freed JK**. Ceramide Signaling Potentiates Microvascular Endothelial Dysfunction in Patients with Coronary Artery Disease. *ATVB*. 2023 Vol. 43 Issue Suppl 1, A549. Poster Presentation.
47. Manzo OL, Nour J, Palikhe S, Smimmo M, Rubinelli L, Marino A, Hu Y, Elemento O, **Freed JK**, Norata GD, and Di Lorenzo A. Suppression of sphingolipid metabolism mediates endothelial dysfunction and contributes to coronary atherosclerosis in mice. *FASEB J*. 2023. Poster Presentation.
48. De La Pena R, Kozak K, Gutterman DD, Sigmund CD, Cruz M, **Freed JK**, Beyer AB, Widlansky ME, and McIntosh JJ. Toll-like Receptor 9 (TLR9) siRNA Restores Endothelial Dysfunction in Placental Microvasculature in Preeclampsia. *American Journal of Obstetrics & Gynecology*, Volume 230, Issue 1, S458 - S459. Poster Presentation.
49. SenthilKumar G, Zirgibel Z, Lindemer BJ, Bordas-Murphy H, and **Freed JK**. The Beneficial Effects of Ceramide on Human Microvascular Endothelial Function is Dependent on S1P/S1PR1 Signaling Axis. *Circulation*. 2023;148:A11818. **Podium Presentation, Winner of Elaine W. Raines Early Career Investigator Award.**
50. Zirgibel Z, SenthilKumar G, Lindemer B, Bordas-Murphy H, Jaramillo-Torres M, and **Freed JK**. Role of Ceramide in Estrogen-Induced Oxidative Stress in Endothelial Cells from Individuals Assigned Male at Birth. *Circulation*. 2023; 148:A12494. **Invited podium presentation at AHA Scientific Sessions.**
51. SenthilKumar G, Jaramillo-Torres M, Zirgibel Z, Lindemer BJ, Bordas-Murphy H, and **Freed JK**. Chronic Estrogen Treatment Promotes Human Microvascular Endothelial

Dysfunction Through Sex-Specific Regulation of Ceramide Formation. American Physiological Summit, Long Beach, CA. April 2024;39. **Invited oral presentation, Winner, CV Section Outstanding Graduate Student Award.**

52. Jaramillo-Torres M, SenthilKumar G, Lindemer BJ, Bordas-Murphy H, and **Freed JK**. Activation of Piezo1 Prevents Human Microvascular Endothelial Dysfunction During Acute Inhibition of Ceramide Formation. American Physiological Summit, Long Beach, CA. April 2024;39. Poster Presentation.

53. Hughes WE, McIntosh JJ, **Freed JK**, Beyer AM, and Durand MJ. Divergent Vasodilator Mechanisms to Endothelial-Dependent Agonists with Advancing Age. American Physiological Summit, Long Beach, CA. April 2024;39. Poster Presentation.

54. Cohen KE, Bordas-Murphy H, Durand MJ, and **Freed JK**. Sphingosine-1-Phosphate Promotes Resiliency to External Stress in the Human Microvasculature. American Physiological Summit, Long Beach, CA. April 2024;39. Poster Presentation.

55. Jobe A, Schulz ME, Hader S, Beyer AM, and **Freed JK**. Role of SIRT3 in Compensatory Flow-Induced Dilation Following High Pressure Stress in the Human Microcirculation. American Physiological Summit, Long Beach, CA. April 2024;39. Poster Presentation.

56. Durand MJ, Nguyen JN, Whitaker-Hilbig A, Jaramillo-Torres M, O'Connell E and **Freed JK**. High Intensity Interval Exercise causes Acute Microvascular Dysfunction in Elderly Individuals with Low Cardiorespiratory Fitness – A Pilot Study. American Physiological Summit, Long Beach, CA. April 2024;39. Poster Presentation.

57. Jaramillo-Torres MJ, O'Connell E, SenthilKumar G, Durand MJ, **Freed JK**. Effect of Continuous Estrogen on Peripheral Microvascular Function in Women of Trans Experience. *Circulation*. 2024; 150:A4143871. Poster Presentation.

58. Limpert RH, SenthilKumar G, Lindemer BJ, **Freed JK**. Estrogen Activates Neutral Sphingomyelinase in a Sex-Dependent Manner. *Circulation*. 2024; 150:A4141873. Poster Presentation.

59. SenthilKumar G, **Freed JK**, Cohen KE. Sodium Glucose Co-transporter 2 (SGLT2) Inhibitors Promote Resiliency to High Pressure Stress in the Human Microvasculature. *Circulation*. 2024; 150:A4141446. Poster Presentation.

60. George S, **Freed JK**, and Makker H. Repair of Tracheoesophageal Fistula Under Venovenous Extracorporeal Membranous Oxygenation. Society of Cardiovascular Anesthesiologists Annual Meeting. 2025. (in press)

61. Uzodinma P, Huang J, and **Freed JK**. Negative Pressure Pulmonary Edema: A Unique Presentation in Mediastinal Paraganglioma Resection. Society of Cardiovascular Anesthesiologists Annual Meeting. 2025. (in press)

62. Dhillani F, Hughes WE, Gutterman DD, Durand MJ, **Freed JK**, and Beyer AM. Hypoxic Preconditioning Restores Mitochondrial Dynamics and Endothelial Function. American Physiological Summit, Baltimore, MD. April 2025. Poster Presentation.

63. Limpert RH, Lindemer B, and **Freed JK**. Induction of Senescence by Overexpression of p16 Promotes Human Microvascular Endothelial Dysfunction. American Physiological Summit, Baltimore, MD. April 2025. ***Invited podium presentation, MCS Gabor Kaley Award Featured Topic Session**