CURRICULUM VITAE

Andreas M. Beyer Ph.D. FAHA, FCVS-APS
Associate Professor of Medicine and Physiology
Co-director of Cardio-Oncology
Basic and Translational Research Program

HOME ADDRESS

Upon Request

OFFICE ADDRESS

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CITIZENSHIP

USA, German

EDUCATION

9/1996-3/2001 Dipl. of Biochemical Engineering, University of Applied Science, Giessen-Friedberg, Germany
5/2001-7/2007 Ph.D. in Genetics, University of Iowa, Iowa City, IA

POSTGRADUATE TRAINING AND FELLOWSHIP APPOINTMENTS

9/2007-2009	Postdoctoral fellow, Rahmouni Laboratory, University of Iowa, Iowa City, IA
9/2009-2/2011	Postdoctoral fellow, Lombard Laboratory, Medical College of Wisconsin, Milwaukee, WI

MILITARY SERVICE

8/1995-8/1996 Social Service – EMT Malteser Hilfsdienst

FACULTY APPOINTMENTS

2/2011-6/2012	Instructor, Medicine, Cardiology, Medical College of Wisconsin, Milwaukee, WI
7/2012-6/2018	Assistant Professor, Medicine, Cardiology, Medical College of Wisconsin, Milwaukee, WI
7/2012-6/2018	Assistant Professor, Physiology, Medical College of Wisconsin, Milwaukee, WI
7/2018–Present	Associate Professor, Medicine, Cardiology, Medical College of Wisconsin, Milwaukee, WI
7/2018–Present	Associate Professor, Physiology, Medical College of Wisconsin, Milwaukee, WI

ADMINISTRATIVE APPOINTMENTS

2012-2016 Research Director of Basic Science Training Program for Cardiothoracic Surgery Residents, Cardiothoracic Surgery, Milwaukee, WI

- Fostered interactions between CT-residence and research focused faculty, assisted in funding proposals (e.g., NIH loan repayment program, K-awards)

2013-2017 Organizer, Cardiovascular Center Seminar Series, Milwaukee, WI

- Contact person for CVC seminar, oversaw speaker section, invited external presenters, and organized on campus visits

2020 – present Co-director of Cardio-Oncology, Basic and Translational Research Program Medical College of Wisconsin

- In collaboration with director of Clinical Director of Cardio-Oncology develop programmatic goals and direction
- Promoting cardio-oncology on campus with goal to expand research program including initiating new collaborative research plans (e.g., initiated and successfully applied for Center grant from American Heart Association on disparities in cardio-oncology that included faculty from different disciplines previously not involved ion cardio-oncology research)
- Host monthly seminar series with internal and external speakers
- Secured funding to host small national meeting on translational physiology in cardio-oncology (fall 2023)
- Project support and initiation for newly initiated research projects, starting April 2022 0.25 FTE coordinator support to oversee IRB submissions and provide other administrative support for investigators
- Chair search committee(s) for new faculty in cardio-oncology (March 2022 one active, possible 2nd one to follow)
- Initiate new research projects with ultimate goal to expand funding portfolio for this program to include NIH R- and P-level funding

AWARDS AND HONORS

2003-2005 Predoctoral Fellowship, American Heart Association-Heartland Affiliate

2005 Pfizer Education Scholarship, Keystone Symposia PPAR LXR

2006 Merck New Investigator Award, AHA, Council of High Blood Pressure

2007-2009	Cardiovascular Research Fellowship, University of Iowa
2008	Travel Grant, International Society of Hypertension
2011	New Investigators Symposium Poster Award, Council of High Blood Pressure/ISH
2014	Outstanding Young Investigator Award, Microcirculatory Society
2015	Outstanding Poster Award Ear Career Faculty Basic or Translational Research, Medical College of Wisconsin, Department of Medicine
2016	International Travel Award for Young Investigators, APS-TPS
2016	Top 3 Reviewer Journal of the American Heart Association (JAHA), American Heart Association
2016-present	Fellow of the American Heart Association (FAHA), American Heart Association
2017-present	Fellow of the American Physiological Society Cardiovascular Section (FCVS-APS)

MEMBERSHIPS IN HONORARY AND PROFESSIONAL SOCIETIES

2003-present	Member, American Heart Association – Council for High Blood Pressure Research
2005-present	Member, The American Physiological Society
2011-present	Member, The Microcirculatory Society
2011-present	Member, American Heart Association Council for Arteriosclerosis, Thrombosis, and Vascular Biology
2017-present	Member, North American Vascular Biology Organization

EDITORSHIPS/EDITORIAL BOARDS/JOURNAL REVIEWS

Editorial Board

2016-present	Reactive Oxygen Species
2018-present	Physiological Reports - American Physiological Society Journal
2018-2019	Guest Editor Anti-Cancer Therapy induced Cardiovascular Toxicity - American Journal of Physiology Heart and Circulatory Physiology
2019-present	American Journal of Physiology Heart and Circulatory Physiology
2020-present	Microcirculation
2020	Guest Editor Vascular Autophagy in Health and Disease – Cells, Multidisciplinary Digital Publishing Institute Journal
2021-present	*Journal of Gene Regulation* - Founding Associate Editor

Journal Review

2010-present	Hypertension
2011-present	Journals of American Physiological Society
2011-present	Circulation Research
2012-present	FASEB Journals

2012-present	American Journal of Nephrology
2012-present	Journal of the American Heart Association (JAHA)
2012-present	Arteriosclerosis, Thrombosis, and Vascular Biology
2012-present	Circulation
2012-present	Nature Publishing Group
2013-present	PLOSone
2014-present	Journal of Nephrology & Therapeutics
2015-present	Vascular Pharmacology
2016-present	Frontiers Journals (Physiology, Pharmacology)
2019-present	Journal of American College of Cardiology (JACC) – Cardio-Oncology)

Peer Review Committees

National

2015-2017	Study Section Member: Vascular Endothelial Biology 2, American Heart Association
2018	Ad Hoc Reviewers - Innovational Research Incentives Scheme The Netherlands Organization for Health Research and Development (ZonMw)
2018	Study Section Member: Fellowship Vascular Endothelial Biology Basic Science - American Heart Association
2018	Ad Hoc Reviewer for NIH/NHLBI Program Project Grant
2019	Ad Hoc Reviewers - Nebraska Collaboration Initiative
2019	Ad Hoc Reviewer – NIH/NCI Cancer Etiology (CE) study section
2020	Ad Hoc Reviewer for NIH/NHLBI Program Project Grant
2020	Study Section Member: Carrier Development Awards Vascular Endothelial Biology Basic Science - American Heart Association
2020	Ad hoc review for French National Research Agency (*ANR*)
2021 -	Co-Chair - American Heart Association - Peer Review Committee: Career development Awards Vascular Endothelial Biology Basic Science
2021	Ad-Hoc Reviewer - NHLBI Special Emphasis panel ZRG1 VH-N (91)

Local/Institutional

2016 – present	Cardiovascular Center Seed Grants
2019-2021	Children's Research Institute (CRI)
2019-2022	Research Affairs and Limited needs Pilot grants (Office of Research)
2020	Cancer Center/ Genomic Sciences and Precision Medicine Center (GSPMC) Seed grants
2020-2021	Advancing a Healthier Wisconsin (AHW)

LOCAL/REGIONAL APPOINTED LEADERSHIP AND COMMITTEE POSITIONS

2012-2018	Chair, Microvascular Affinity Group, Medical College of Wisconsin
2017-2018	Organizing Committee - Redox Biology Symposium
2020-	co-Director Cardio-Oncology, Basic and Translational Program

NATIONAL/INTERNATIONAL APPOINTED LEADERSHIP AND COMMITTEE POSITIONS

2012-2015	Member, Society Programs and Meetings Committee, The Microcirculatory Society
2014-2016	Member, Conference Committee, The American Physiological Society
2017-2019	Nomination Committee Chair, Translational Physiology Interest Group Steering Committee, The American Physiological Society
2017-2019	Member, International Committee, The American Physiological Society
2017-2019	Member, Cardiovascular Section Trainee Committee, The American Physiological Society
2017 – 2018	The American Physiological Society task force Refreshing the Strategic focus of the Society – APS conferences
2018 – 2021	Councilor for Microcirculatory Society
2018 – 2022	Programming Committee Microcirculatory Society
2020 - 2023	Member, Conference Committee, The American Physiological Society
2020-2023	Programming Committee Chair, Translational Physiology Interest Group Steering Committee, The American Physiological Society
2021-2024	Co-Chair Programming Committee Microcirculatory Society

MEETING PROGRAM CONTRIBUTIONS

2012	AHA Scientific Session Symposium Endothelial-Derived Microparticles, Endothelial Senescence and Premature Vascular Aging Organizer, Session Chair
2014	Experimental Biology – Microcirculation President Symposium Session Chair

2014	AHA Scientific Session Symposium - Novel Insights into Vasodilation in Health and Diseases, What Can Human Vasculature Teach Us, Organizer Session Chair
2015	APS Conference Physiological Bioenergetics – From Bench to Bedside Organizing committee, Session chair
2016	AHA Scientific Session Symposium Non-Conventional Roles of Mitochondria in Cardiovascular Health and Disease Organizer Session Chair
2017	Experimental Biology – Symposium Vasodilation in Human Microvessels, From Bed To Bench And Back Organizer
2017	APS Conference Cardiovascular Aging New Frontiers and Old Friends Conference Chair
2017	APS Conference Physiological Bioenergetics Mitochondria from Bench to Bedside Organizing Committee
2018	Experimental Biology – Symposium: Chemotherapy induced Vascular Toxicity – Do Small Things ` Matter. Organizer, Session Chair
2018	World Congress of Microcirculation A universe beyond ROS and ATP: Novel Mechanisms of Mitochondria as Secondary Messengers Organizer, Symposium Chair
2019	Experimental Biology – Symposium: Microcirculation`s Contribution to Organ Failure. Organizer, Symposium Chair
2019	Physiology, Aberdeen Scotland Contribution of microcirculation to development of chronic heart-failure. Organizer, Symposium Chair
2021	Virtual NAVBO Mini symposium Human Organoid Systems to Study Vascular Toxicity Chair/organizer
2022	12th World Congress of Microcirculation, Beijing, China Anti-cancer treatments and endothelial dysfunction: mechanisms and clinical implications Chair/organizer

2023 APS Conference Translational Physiology of Cardio-Oncology
Chair/organizer

RESEARCH GRANTS/AWARDS/CONTRACTS/PROJECTS

Active
Peer Review

Title: Pivotal Role of Mitochondrial Telomerase in Regulation of Vascular Tone and Redox Homeostasis
Source: NIH/NHLBI
Role: PI
PI: Beyer
Dates: 3/1/2017 – 2/28/2022
Project Total: $ 2,105,032
Major Goals: This grant proposed to differentiate the nuclear and mitochondrial contribution of telomerase to the development and progression of coronary artery disease

Title: Role of mitochondrial dysfunction in hyperoxia-induced Pulmonary vascular endothelial injury
Source: Department of Veterans Affairs
Role: Co-Investigator
PI: E. Jacobs
Dates: 4/1/2019 – 3/31/2024
Project Total: $ 2,361,667
Major Goals: The goal of the award is to define the role of hyperoxia induced mitochondrial damage to acute pulmonary injury.

Title: Novel role for placental endothelial mitochondria in preeclampsia endothelial injury
Source: NIH/NHLBI K08
Role: Mentor
PI: J. McIntosh
Dates: 1/1/2020 – 12/31/2024
Project Total: $ 754,350

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

Source: NIH/NHLBI
Role: Co-Investigator/PI (Transfer due to partial retirement of PI)
PI: Gutterman 2021/Beyer2022-2025
Dates: 8/1/2021 – 7/31/2025
Project Total: $ 2,667,095
Major Goals: To identify a role for mitochondrial fission as the mechanism of a change in the mediator of human arteriolar dilation to shear stress. To determine if hypoxic preconditioning can protect the microvasculature from stress-induced reduction in function, using hypertension and high glucose as stressors.
Additional Notes: R01 was essentially written as MPI grant (Gutterman/Beyer) but submitted as single PI in order to preserve Beyer`s NIH early established investigator (EEI) status that provides 5% for R01 for first R01 renewal (grant transfer dose not disqualify for EEI status). With Dr Gutterman moving into partial retirement (25%) grant was transferred to Beyer with Gutterman reduced effort (10%)

Title: Understanding and Addressing Cancer Therapy Induced Systemic Inflammation and Associated Endothelial Dysfunction
Source: American Heart Association Scientific Focused Research Network
Role: co-Center Director (Transfer due to partial retirement of PI)
Project PI -
Defining Differences in Endothelial Function and Response to CTx among a Diverse Population of Women with BC
Co-I - Impact of CTx and Exercise on Immune and Endothelial Cells-Comparative study of B/AA vs. white BC patients
PI: Stolley/Gutterman (2021)/Beyer (2022-2025) (MPI)
Dates: 07/01/2021 – 6/30/2025
Project Total: $ 2,900,000 Beyer Project: $926,158.00/4 years
Major Goals: Goal of this project is to evaluate impact of race as a contributing factor chemotherapy induced cardiovascular pathology in breast cancer patients.
Additional Notes: This project was initiated, and collaborative team assembled by Beyer. Due to the competitive nature of these SFRNs awards it was decided more senior leadership (Stolley/Gutterman) would be more favorable for application. Beyer moved into co-center director Gutterman in Partial retirement. Beyer retained project lead of clinical project (equivalate to NIH R01)

Non-Peer Review

Title: Bridging the Gap in Translational Vascular Research
Source: Advancing a Healthier Wisconsin Endowment (AHW)
Role: co-I
PD/PI: Freed
Dates: 05/01/2021 – 04/30/2023
Project Total: $250,000

Major Goals: The goal of this project is to improve workflow for the retrieval of discarded surgical specimens for vascular research, to increase collection of important background data on patients whose tissue was received and foster a collaborative research environment between Froedtert Hospital and the Medical College of Wisconsin.

Title: Testing of an ADRA2B Antagonist on Human Microvessels
Source: Bayer AG (Germany)
PD/PI: Beyer
Dates: 08/24/2020 – 08/23/2025
Project Total: $102,540
Major Goals: Establish efficacy and understand mechanism of novel alpha2b-adrenergic receptor antagonist in human coronary microcirculation

Title: Understanding pathological effects of Chemotherapy on endothelial function and Biomarkers and their use for risk prediction
Source: Abbott Laboratories
PD/PI: Beyer
Dates: 07/05/2021 – 07/07/2024
Project Total: $148,854
Major Goals: The goal of this proposal is to define the predictive value of current clinically used biomarkers for adverse cardiovascular events in cancer patients undergoing cardiotoxic chemotherapy and how they connect with ex vivo chemotherapy induced vascular defects.

Pending

Title: R01 Anticancer Therapy-Induced Microvascular Dysfunction
Source: NIH/NHLBI/NCI
Role: PI
PI: Beyer
Dates: 09/01/2022 - 8/31/2026
Project Total: $355,321/ year

Title: R35 – Role of Microvascular Function and Mitochondrial Integrity in systems biology - Focus on Cardiovascular disease and Cardio-Oncology
Source: NIH/NHLBI
Role: PI
PI: Beyer
Dates: 09/01/2022 - 8/31/2029
Project Total: $700,000/ year

Prior

Title: Differentiation of mitochondrial vs. nuclear function of telomerase

Source: MCW – Research Affairs Committee
Role: PI
PI: Beyer
Dates: 1/1/2013 – 12/31/2013
Project Total: $ 25,000

Title: Differentiation of mitochondrial vs. nuclear function of telomerase
Source: MCW – Redox Biology Program
Role: PI
PI: Beyer
Dates: 1/1/2014 – 12/31/2014
Project Total: $ 5000

Title: Differentiation of mitochondrial vs. nuclear function of telomerase
Source: NIH/Office of Director
Role: PI
PI: Beyer
Dates: 8/1/2014 – 7/31/2016
Project Total: $ 414,998

Title: Differential role of mitochondrial and nuclear telomerase activity
In regulation of mitochondria and cardiovascular function
Source: AHA
Role: Mentor
PI: Ait-Aissa
Dates: 1/1/2016 – 12/31/2018
Project Total: $ 102,676

Title: Mechanism of Flow-Induced Dilation in the Human Microcirculation
Source: NIH/NHLBI
Role: Co-Investigator
PI: Gutterman
Dates: 2/1/2013 – 1/31/2017
Project Total: $ 1,670,795

Title: Development of a Nature-Based Outdoor Activity Intervention to Improve Breast Cancer Survivorship: A Community Engaged Research Approach
Source: MCW Patient Centered Outcomes Research Center
Role: co-PI
PI: Beyer, K
Dates: 01/2017 – 12/2017
Project Total: $25,000

Title: Harnessing Telomerase

Source: Therapeutic Accelerator Grant (TAP)
Role: PI
PI: Beyer
Dates: 9/1/2017 – 8/31/2018
Project Total: $100,000

Title: Mitochondrial function disparities contributing to cardiovascular toxicity from radiation therapy.
Source: Cardiovascular Center Pre-PPG grant
Role: multi-PI and Project leader
PI: Medora/Beyer
Dates: 7/1/2017 – 6/30/2019
Project Total: $ 200,000

Title: Role of Extra-Nuclear Telomerase in Protection for Chemotherapy Induced Vascular Defects
Source: AHW - Redox Biology Program Award
Role: PI
PI: Beyer
Dates: 9/1/2016 – 6/30/2019
Project Total: $300,000

Title: Mitochondrial Telomerase as Regulator of Mitochondrial Damage and Secondary Messengers in Chemotherapy Induced Microvascular Dysfunction
Source: We Care Foundation
Role: PI
PI: Kong/Beyer
Dates: 9/1/2017 – 8/31/2021
Project Total: $ 100,000

Title: Novel Regulatory Mechanisms in the Human Microcirculation
Source: NIH/NHLBI
Role: Co-Investigator
PI: Gutterman
Dates: 12/12/2016 – 11/30/2020
Project Total: $ 1,726,564

Title: Novel Role for Autophagy in Determining Microvascular Flow-Mediated Dilation
Source: American Heart Association Postdoctoral Fellow
Role: Mentor
PI: Hughes
Dates: 1/1/2020 – 12/31/2022

Non-Peer Review

Title: *Effects of TEVA Compound on Human Vascular Reactivity*
Source: Teva Pharmaceuticals
Role: PI (multi-PI grant)
PI: Gutterman/Beyer
Dates: 2/23/2017 – 2/23/2019
Project Total: $ 25,853

INVITED LECTURES/WORKSHOPS/PRESENTATIONS:

National/International

1. Mitcondrial Telomerase, mtDNA damage and secondary signaling Cardiovascular Pathophysiology, Distinguished Scientist Series - University of South Alabama Department of Pharmacology March 2022
2. Endothelial function, Hypertension and Cardiovascular Diseases. New Advances in Cardiovascular disease, Virtual Symposium American University of Beirut, Keynote Speaker Nov 2021
3. Coronary Artery Disease to Cardio-Oncology - a Journey There and Back Again. Department of Physiology Augusta University May 2021
4. The Traveled road of Microcirculation – From Coronary Disease to Cardio-Oncology and back again. Molecular Medicine Seminar Series at Tufts Medical Center March 2021
5. Effect of Anti-Cancer Therapy on Human Microvascular Function –Experimental Biology April 2021
6. Mechanisms of Microvascular Toxicity of BCR-Able TKI in CMLs - what are the clinical implication of long-term exposure – Chicago Citywide Cardio-Oncology consortium. September 2020
7. A New Approach in Cardiac Oncology: Lessons Learned from Coronary Artery Disease - Virtual NAVBO Mini symposium on Cardiovascular Health and Disease. May 2020
8. Anti-Cancer Therapy Induced Microvascular Dysfunction – Role of Mitochondrial DNA damage - Vasculata 2019
9. Chemotherapy-Induced Cardiotoxicity Large Problem with Small Origins Invited Seminar University of Iowa Department of Health and Human Physiology Iowa City January 2019
10. Harnessing Telomerase - Challenges in Cardiac Oncology, Invited Seminar University of Hannover Medical School Hannover Germany June 2018

11. Regulation of Mitochondrial Integrity in the Development of Coronary Artery Disease University of Iowa Center for Hypertension Research - Invited Seminar Iowa City February 2018
12. A New Approach in Cardiac Oncology Lessons Learned from Coronary Artery Disease - Harnessing Telomerase, Tulane University - Invited Seminar New Orleans December 2017
13. Cardiovascular Aging, New Frontiers and old Friends, APS Conference, Westminster CO August 2017
14. Basic Cellular Mechanisms Involved Regulation of Microvascular Function and Redox Environment. University of New Mexico Unusual Suspects – Invited Seminar Albuquerque NM April 2017
15. Autophagy is a Novel Regulatory Mechanism in the Human Microcirculation, Experimental Biology Chicago April 2017
16. Role of Telomerase in the Vascular Mitochondria – Implications in Human Heart Disease. AHA Scientific Session New Orleans November 2016
17. Non-Canonical Role of Telomerase in the Human Heart – Implications for the Therapy of Cardiovascular Disease and Cancer University of Essen; July 2016
18. Extra-nuclear Telomerase Activity: Novel Role and Contribution to the Development Of Coronary Heart Disease, University of Calgary April 2015
19. Regulation of Coronary Blood Flow in Health and Disease: Vascular adaption to Acute and chronic stress, University of Western Ontario London ON March 2015
20. Mitochondrial Telomerase and Vasodilation APS Conference on Physiological Bioenergetics: From Bench to Bedside Tampa Bay August 2015
21. Novel insights into Vasodilation in Health and Diseases, What can Human Vasculature Teach us AHA Scientific Session Chicago November 2014
22. Mitochondrial telomerase regulates flow mediated dilation by suppressing Mitochondrial derived free radical production, Experimental Biology San Diego, CA April 2014
23. Activation of PPARy Converts the Mechanism of Flow-Mediated Dilation in Human Microvessels from H_20_2 to NO by a Telomerase Dependent Mechanism AHA Scientific Session Los Angeles November 2012

Regional/Local

1. Novel Role of Telomerase in regulation of Mitochondrial Reactive Oxygen Species and Influence on Vasodilation, Cardiovascular Redox Signaling Symposium, Medical College of Wisconsin, Milwaukee, WI

COMMITTEE SERVICE:
Medical College of Wisconsin

2013-2016	Member, Diversity and Inclusion Committee, Medical College of Wisconsin
2017-2018	Organizing Committee - Redox Biology Symposium
2018-2021	Member, Institutional Animal Care and Use Committee Medical College of Wisconsin
2019-2021	Member, Research Affairs Committee Medical College of Wisconsin
2021 - 2024	Member, Department of Medicine Research Committee

MEDICAL COLLEGE TEACHING ACTIVITIES

2012- present Mentor for Summer research programs

- Research Opportunity for Academic Development in Science (ROADS)
- Summer Program for Undergraduate Research (SPUR)
- Medical Student Summer Research Program (MSSRP)
- Diversity Summer Health-Related Research Education Program (DSHREP)

2016 - 2020 Molecules to Cells CBD Classes - Medium-chain Acyl-CoA Dehydrogenase deficiency (3 Lecture hours)

2021 - Current Concepts in Cardiovascular Biology (3.0 credit hours CRN: 14657) Section Leader - Current Topics in Cardiovascular Science

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

* Refer to appendix for additional detail on Mentees and achievements

High School Students

2012-2014	Isabell Gil	Research Mentor (not affiliated with any program)
2015-2018	Nabeel Quryshi	Research Mentor (not affiliated with any program)
2019	Blessed Ikuobolati	ROADS Mentor
2020	Cameron Stockwell	Mentor (Student Intern, not affiliated with any Program)

Undergraduate Students

2014	Peter Schuman	SPUR Mentor
2015	Jakayla Dills	DSHREP Mentor
2018-2019	Lukas Brand	Mentor (Student Intern, not affiliated with any Program)
2019	Courtney Stephens	SPUR Mentor
2018-2022	Micaela Young	Mentor - minority research supplement

Medical Students

2013	Jack Trellborn	MSSRP Mentor
2015	Katie Car	MSSRP Mentor
2016-2018	Scott C. Blaszak	MSSRP Mentor, Advisor honors in research
2017-2019	Matthew Rappelt	MSSRP Mentor, Advisor honors in research
2018-2021	Luis Paniagua	MSSRP Mentor, Advisor honors in research

Graduate Students

PhD Thesis Committees

2012-2016 **Johnathan Daniel Ebben**
Primary Mentor Ming You Department of Pharmacology, MCW
Development and Strategic Use of Novel Peptides to Address Chronic Disease: A Role in Immunoprevention of Cancer and Management of Endothelial Dysfunction

2020 - **Nnamdi Uche**
Primary Mentor Ivor Benjamin *Department of Medicine MCW*
Doxorubicin Induced Changes in Cardiomyocyte Acetylome.

2020 - **Evan Paul Tracy,**
Amanda Leblanc University of Louisville
Role of Mitochondrial damage in vascular aging.

2021 - **Jean Bikomeye**
Primary Mentor Kirsten Beyer, Institute for Health and Equity, MCW
Cardiovascular Health Benefits of Nature Exposure.

2021 - **Amanda Marks**
Primary Mentor Alison Kregel, Department of Physiology, MCW
Cardiovascular Pathology of Cardio-Renal syndrome

2021 - **Adaysha Williams**
Primary Mentor Alison Kregel, Department of Physiology, MCW
Genetic Determinants Cardiovascular Pathology

SOC Committees

2016-2019 **Sheraden Seward**
Assessment of impaired angiogenesis in bronchopulmonary dysplasia

2018-2017 **Rose Doolittle**
Impact of Persistent Pulmonary Hypertension of the Newborn on endothelial cell mitochondrial function

PhD Students Advised

2014-2019 **Dawid Chabowski, Department of Pharmacology** (*Co-Mentor*),
Contribution of LPA signaling to Development of CAD,

2014-2018 **Andrew O Kadlec Department of Medical Scientist Training Program/Physiology** (*Co-Mentor*),
Role of PGc1α in Regulation of Microvascular Tone

2020-present **Cristhian Gutierrez Huerta**, **Medical Scientist Training Program/Physiology** (Primary *Mentor*)

Critical role of Mitochondrial Fission/Fusion in Regulation of Microvascular Endothelial Function

2021-present **Lukas Brand, Department of Physiology** (Primary *Mentor*)
Contribution of Telomerase activity to Anticancer Therapy-Induced Microvascular Dysfunction

Postdoctoral Fellows

2015-2018 **Karima Ait-Aissa** (Primary *Mentor*),
Role of Telomerase as regulator of Mitochondrial Metabolism and Implications in Cardiovascular diseases

2018-present **William Hughes** (Primary *Mentor*)
Novel Role for Autophagy in Determining Microvascular Flow-Mediated Dilation

2020-present **Janee Terwoord** (Primary *Mentor*)
Role of cf-mtDNA secondary signaling in chemotherapy induced cardiovascular toxicity

2022-present **Marry Hidde** (*Co-Mentor*)

Efficacy of exercise intervention and evaluation of disparities in cardiovascular outcomes in Black and White breast cancer patients undergoing treatment

Faculty

2012-present **Matt D. Durand** (co-Mentor/collaborator)
MCW Assistant/Associate Professor Department of Physical Medicine and Rehabilitation *Mentor/Collaborator*

2016-present **Jennifer J. McIntosh** (co-Mentor/collaborator)
MCW Assistant/Associate Professor Department of Obstetrics & Gynecology *Mentor/Collaborator*

2017-present **Julie K. Freed** (co-Mentor/collaborator)
MCW Assistant/Associate Professor Department of Anesthesiology

Faculty (ongoing relationship/collaboration)

BIBLIOGRAPHY

Refereed Journal Publications/Original Papers

https://www.ncbi.nlm.nih.gov/myncbi/andreas.beyer.1/bibliography/public/

* co or primary Correspondent/Senior Author
& highlighted by editorial or similar

1. Keen HL, Ryan MJ, **Beyer AM**, Mathur S, Scheetz TE, Gackle BD, Faraci FM, Casavant TL, Sigmund CD. Gene expression profiling of potential PPARgamma target genes in mouse aorta. Physiol Genomics 2004. 18(1): 33-42

2. **Beyer AM,** Baumbach GL, Halabi CM, Modrick ML, Lynch CM, Gerhold TD, Ghoneim SM, de Lange WJ, Keen HL, Tsai YS, Maeda N, Sigmund CD, Faraci FM. Interference with PPARgamma signaling causes cerebral vascular dysfunction,hypertrophy, and remodeling. Hypertension 2008 Apr;51(4): 867-71. PMCID: PMC2408877
3. Halabi, CM, **Beyer AM,** de Lange WJ, Keen HL, Baumbach GL, Faraci FM, Sigmund D. Interference with PPAR gamma function in smooth muscle causes vascular dysfunction and hypertension. Cell Metab 2008 Mar 7(3):215-26. PMCID: PMC2275166
4. De Lange WJ, Halabi CM, **Beyer AM,** Sigmund CD. Germ line activation of the Tie2 and SMMHC promoters causes noncell-specific deletion of floxed alleles. Physiol Genomics. 2008 Sep 17;35(1):1-4. PMCID: PMC2574738
5. **Beyer AM**, de Lange WJ, Halabi CM, Modrick ML, Keen HL, Faraci FM, Sigmund CD. Endothelium-Specific Interference with Peroxisome Proliferator Activated Receptor Gamma Causes Cerebral Vascular Dysfunction in Response to a High-Fat Diet. Circ Res 2008 Sep 12;103(6):654-61. PMCID: PMC2583077
6. Keen HL, Halabi CM, **Beyer AM**, de Lange WJ, Liu X, Maeda N, Faraci FM, Casavant TL, Sigmund CD. Bioinformatic Analysis of Gene Sets Regulated by Ligand-Activated and Dominant-Negative Peroxisome Proliferator-Activated Receptor {gamma} in Mouse Aorta. Arterioscler Thromb Vasc Biol. 2010;

   30(3):518-25. PMCID: PMC2850258
7. **Beyer AM,** Guo DF, et al. (2010). "Contrasting vascular effects caused by loss of Bardet-Biedl syndrome genes." Am J Physiol Heart Circ Physiol, 2010 Dec;299(6):

   H1902-7. PMCID: PMC3006278
8. Guo DF, **Beyer AM**, Yang B, Nishimura DY, Sheffield VC, Rahmouni K. Inactivation of Bardet-Biedl Syndrome genes cause kidney defect. Am J Physiol Renal Physiol, 2011 Feb;300(2): F574-80. PMCID: PMC3043995
9. **Beyer AM***, Raffai G. Weinberg B, Fredrich K, Lombard JH. Dahl salt-sensitive rats are protected against vascular defects related to diet-induced obesity. Hypertension. 2012 Aug;60(2):404-10. PMCID: PMC344144
10. **Beyer AM**, Guo DF, Rahmouni K. Prolonged treatment with Angiotensin 1-7 improves endothelial function in diet-induced obesity. J Hypertens. 2013 Apr;31(4):730-8
11. Peng Y, Yu D, Gregorich Z, Chen X, **Beyer AM,** Gutterman DD, Ge Y. In-depth proteomic analysis of human tropomyosin by top-down mass spectrometry. J Muscle Res Cell Motil. 2013 Aug;34(3-4):199-210. PMCID: PMC3849107
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61. Hughes WE, **Beyer AM**, Gutterman DD Integrative Effects of Autophagy and Telomerase on Microvascular Flow-Mediated Dilation in Health and Coronary Artery Disease. The FASEB Journal Experimental Biology 2019.

62. Norwood Toro LE, S. Hader SN, Kong A, Rui H, and **Beyer AM** Adverse effects of Chemotherapy on Human Microvascular Function. The FASEB Journal Experimental Biology 2019.
63. Gutterman DD, Zhang D, **Beyer AM**, Durand M, Freed JK Endothelium-dependent vasodilation in the human microcirculation: A switch in mechanism with disease or stress. APS Conference on Interface of Mathematical Models and Experimental Biology: Role of the Microvasculature Conference, AZ 2019
64. Hader S, Norwood Toro LE, Derayunan A, Kong A, Rui H, McIntosh J, and **Beyer AM** Chemotoxicity Effects on Microvascular Function Vasculata 2019, Milwaukee WI
65. Hughes WE, Gutterman DD, **Beyer AM** Activation of Autophagy Maintains Nitric Oxide as the Primary Mechanism of Flow-Mediated Dilation in the Absence of Telomerase Reverse Transcriptase Activity Vasculata 2019, Milwaukee WI - Travel Award
66. Gao F, Narayanan J, Fish B, Gasperetti T, Scholler D, Chitambar CR, de Choudens SO, Jacobs ER **Beyer AM**, Medhora M. Genetic regulation of mitochondrial function in immune cells after radiation to rat lung and heart Radiation Research Society 2019 San Diego CA
67. McIntosh JJ, Rappelt M, **Beyer AM**, Norwood Toro, L, Gutterman DD. A Novel Mechanism for the Pathogenesis of Preeclampsia: Cell-free Mitochondrial DNA mediated Toll Like Receptor 9 activation, 2019 NHLBI Mitochondrial Biology Symposium
68. **Beyer AM,** Norwood Toro LE, Durand MJ. Doxorubicin Promotes Mitochondrial Fission And mtDNA Damage in Vascular Endothelium 2019 NHLBI Mitochondrial Biology Symposium
69. Gao F, Narayanan J, Fish BL, Gasperetti T, Scholler D, Chitambar CR, Ortiz de Choudens S, Jacobs ER, **Beyer AM**, Medhora M Genetic regulation of mitochondrial function in immune cells after radiation to rat lung and heart. **65**th Annual Meeting of the Radiation Research Society, San Diego, CA (2019).
70. McIntosh JJ, Derayunan A, Hader SN, **Beyer AM**, Gutterman DD Impaired Microvascular Endothelial Function in Preeclampsiac The FASEB Journal Experimental Biology 2020
71. Tracy EP, Rowe G, Toro LN, **Beyer AM**, LeBlanc AJ Telomerase Reverse Transcriptase Mediates Restoration of Functional Vasodilation in Isolated Coronary Microvessels of Aged Female Rats. The FASEB Journal Experimental Biology 2020
72. Hughes WE, Gutterman DD **Beyer AM**, Activation of Autophagy Restores Nitric Oxide as the Primary Mechanism of Flow-Mediated Dilation in the Absence of Telomerase Reverse Transcriptase Activity. The FASEB Journal Experimental Biology 2020.
73. Norwood Toro LE, Hader SN, Kong A, and **Beyer AM** Effects of Anti-Cancer Therapy on Human Microvascular Function - a Longitudinal Study The FASEB Journal Experimental Biology 2020

74. Ibrahim ESH, Norberg A, Hader SN, **Beyer AM** Chronological quantification of regional cardiac function with anti-cancer therapy Society for Cardiovascular Magnetic Resonance (SCMR) Virtual Scientific Sessions 2021
75. Yoshinori N., Hader SN., Zhang D.X., Gutterman D.D., **Beyer A.M**. Prolonged Endothelial Dysfunction in Human Arterioles with SARS-CoV-2 The FASEB Journal Experimental Biology 2021
76. Hughes W.E., **Beyer A.M**, Gutterman D.D. Type 2 Diabetes Mellitus and Ex Vivo High Glucose Exposure Induce a Switch in the Mechanism of Microvascular Dilation That is Rescued by Activation of Autophagy, The FASEB Journal Experimental Biology 2021
77. Terwoord J.D., Norwood Toro L.E., Hader S.N., Gutterman D.D., **Beyer A.M**. Anti-Cancer Therapy Provokes Human Microvascular Endothelial Dysfunction via Circulating Mitochondrial DNA and TLR9 Activation, The FASEB Journal Experimental Biology 2021
78. Norwood Toro LE, Hader SN, Terwoord JD, Didier D, Kong A, and **Beyer AM** Chemotherapy, Microvascular Function, and Angiogenesis - a Longitudinal Study The FASEB Journal Experimental Biology 2022
79. Terwoord JD, Hader SN, Norwood Toro LE. Hader SN, Gutterman DD, & **Beyer AM** Circulating Factors Provoke Endothelial Dysfunction in the Human Microcirculation Following Doxorubicin Chemotherapy, The FASEB Journal Experimental Biology 2022
80. Nishijima Y, Hader SN, Zhang D, Gutterman DD, **Beyer AM**, The Role of Angiotensin 1-7 in Isolated Human Arterioles with SARS-CoV-2 The FASEB Journal Experimental Biology 2022
81. Gutierrez-Huerta CA, Hader SN, Beare JE, Tracy E, Astbury K, Jacobs ER. LeBlanc AJ, Gutterman DD, **Beyer AM** Examining the role of Drp1 in age-dependent microvascular dysfunction The FASEB Journal Experimental Biology 2022
82. Hader SN, Terwoord JD, Hader SN., Gutterman DD and **Beyer AM** Stratification of Race Reveals Disparate Responses to Anti-Cancer Therapies. The FASEB Journal Experimental Biology 2022
83. Brandt L, Hader SH, **Beyer AM** Mitochondrial Telomerase Prevents Chemotherapy-Induced Cardiovascular Toxicity Experimental Biology 2022

Patents

1. Ebben JD, **Beyer AM**. Peptide inhibitors of telomerase translocation and therapeutic uses thereof. U.S. Patent No. 10,858,397
   Nationalized application in Australia, Canada, China, Europe, Japan and the USA pending

Supplemental Table: Detailed information on training record and trainee accomplishments

Name, Role, Dates	Mentor Role	Project Name	Work Products and/or Awards	Present/last known Occupation
Durand, Matt D Post Doc& Associate Professor 2012-	co-mentor Post-doc; Collaborato r as faculty	Post Doc - Role of Telomerase in regulation of human microvascular function	• Clinical & Translational Science Institute of Southeastern Wisconsin Training Program (KL2) • Pilot and Collaborative Clinical and Translational Research Grants Program • AHA Mentored Clinical and translational award (declined due to overlap with KL2) • NIH/ NINDS R21 - Impaired Blood Flow and Neuromuscular Fatigue Post Stroke • NIH/NIA R21 – Pre-habilitation Of Frail Surgical Cancer Patients Using Remote Ischemic Preconditioning • NIH/NICHD R01 Ischemic Conditioning and Improved Motor Function Post Stroke • Multiple Presentation at national meetings including Experimental biology and American Heart Association Scientific Session • Publications PMID – 26837746, 30476208, 32395853, 28533333, 26699654, 27079876, 25260615	Associate Professor, MCW Department of Physical Medicine and Rehabilitation
Trellborn, Jack Medical student 2013	Preceptor for summer research project	Sphingolipids and telomerase: novel regulators of flow-mediated dilation in the microvasculatur e	• CTSI Medical Student Summer Research Award	Unknown
Kadlec, Andrew O MSTP student, 2014-2018	Co-Mentor Ph.D Thesis research project	Mitochondrial signaling in the vascular endothelium: beyond reactive oxygen species	• AHA pre-doctoral grant • Caroline tum Suden/Frances A. Hellebrandt • • APS-CVS out staining trainee award • Professional Opportunity Awards • Multiple Presentation at national meetings including Experimental biology and American Heart Association Scientific Session • Publications - PMID: 30153326, 29351466, 28533333, 27394166, 26837746	Venture Investors Associate, Madison, WI, Research-Realted
Ait-Aissa, Karima Post-Doctoral Fellow	Primary Mentor	Critical role of telomerase in regulation of cellular redox environment	• APS minority travel award 2014, 2018 • Caroline tum Suden/Frances A. Hellebrandt	Research Assistant Professor University of Iowa

2015-2018			• Finalist for International Society of Hypertension Young Investigator award • APS CV section – Outstanding Trainee Award • AHA BCVS - New Investigator Travel Award • Multiple Presentation at national meetings including Experimental biology and American Heart Association Scientific Sessions, International Society of Hypertension • Publications PMID 33232201, 31110224, 31001540, 30476208, 30153326, 29534446, 29351466, 28533333, 27394166, 26992928)	
Dills, Jakayla Undergraduate student, 2015	Preceptor DSHREP Program	Mitochondrial Defects in Cardiovascular pathology		Tuskegee University
Quryshi, Nabeel High School Researcher 2015-2018	Primary Mentor Research project		• Intel International Science and Engineering Fair Finalist (ISEF): 2016 • Siemens Competition in Math, Science, and Technology National Semi-Finalist: 2016 • Junior Science and Humanities Symposium National Finalist: 2017 • Presidential Scholar Award (National semifinalist (pending finalist status)): 2017 • Best of Fair (1st Place): University School of Milwaukee ISEF Regional Fair • Badger State Science and Engineering Fair 1st Place in Medicine/Behavioral Sciences • SPIE-International Society for Optics and Photonics Prize • Yale Science and Engineering Award • The Society for In Vitro Biology Prize • Intel International Science and Engineering Fair Finalist (ISEF): 2017 • North American Vascular Biology Travel Award Vasculata 2017 • 2018 Coca-Cola Scholar • 2018 U.S. Presidential Scholar • 2018 Dudley R. Hershbach SIYSS award presented during the Nobel prize ceremony Stockholm Sweden • Wisconsin-25-under-25 2018	Undergraduate student Harvard

			• Publications PMID: 29534446	
Carr, Katherine Medical student 2015	Preceptor for summer research project	Importance of mitochondrial health in the regulation of flow mediated dilation in human coronary vessels	• CTSI Medical Student Summer Research Award	Resident Physician, Vanderbilt University
Chabowski, Dawid Graduate student 2015 – 2018	Co-Mentor Ph.D Thesis research project	Modulation of Flow-Induced Dilation by Lysophosphatidic Acid in the Human Microcirculation	• AHA – pre-doctoral grant 2016-2018 • Dep. of Med. Poster award • Caroline tum Suden/Frances A. Hellebrandt • Multiple Presentation at national meetings including Experimental biology and American Heart Association Scientific Sessions • Publications PMID: 33232201, 30153326, 28533333, 26837746	Science and Operations Manager I Science and Medical Translator Warsaw, Mazowieckie, Poland
Blaszak, Scott C Medical student 2016 -2018	Preceptor for summer research, pathway and honors in research project	Mitochondrial Oxidative Phosphorylation defect in the Heart of Subjects with Coronary Artery Disease	• CTSI Medical Student Summer Research Award • Honors in Research • APS Travel award for medical students • Presentation at Experimental Biology 2018 • Publications PMID: 31110224	Residence University of Chicago,

McIntosh, Jennifer J Assistant Professor 2016-	co-mentor and collaborator on research projects	Novel role for placental endothelial mitochondria in preeclampsia	• Clinical & Translational Science Institute of Southeastern Wisconsin Traditional Pilot Award - Effects of Preeclampsia and Preterm Birth on Maternal Endothelial Function • NIH/NHLBI K08 - Novel role for placental endothelial mitochondria in preeclampsia • Multiple Presentation at national meetings	Associate Professor MCW, Department of Obstetrics & Gynecology
Freed, Julie K, Assistant Professor 2017-	co-mentor and collaborator on research projects	Novel Role of Sphingolipids In Maintaining Vascular Homeostasis	• Foundation for Anesthesia and Education Research Mentored Research Training Grant - Novel Role of Sphingolipids in Maintaining Vascular Homeostasis • 2018 Steve Cullen Healthy Heart Scholar • NIH/NIA R21 – Pre-habilitation Of Frail Surgical Cancer Patients Using Remote Ischemic Preconditioning • NIH/NHLBI K08 - Novel Role of Sphingolipids In Maintaining Vascular Homeostasis • Multiple Presentation at national meetings including Experimental Biology and American Heart Association Scientific Session • Publications PMID – 32939881, 31397169, 28533333, 26837746, 26699654, 24920698	Associate Professor MCW, Department of Anesthesiology
Hughes, William Post-doctoral fellow, 2018 -	Primary Mentor Post-Doctoral Research	Crosstalk Between Autophagy and Telomerase within the Context of Microvascular Function in CAD	• T32 Fellow NIH Training grant • The Microcirculatory Society Pappenheimer Postdoctoral Travel Award • MCW Office of Postdoctoral Education Post-doc travel award • Vasculata Abstract Award • NIH/NHLBI F32 Novel Role for Autophagy in Determining Microvascular Flow-Mediated Dilation – Declined in Favor or American Heart Association award • Postdoctoral Fellowship American Heart Association - Novel Role for Autophagy in Determining Microvascular Flow-Mediated Dilation 2020-2022 • The American Physiological Society Post-Doctoral Fellowship - Novel Role for Autophagy in Determining Microvascular Flow-Mediated Dilation – Declined in Favor or American Heart Association award	N/A

			• Caroline tum Suden/Frances Hellebrandt Professional Opportunity Awards • Finalist - American Physiological Society-Cardiovascular Section Outstanding Trainee Awards 2021 • Multiple Presentation at national meetings including Experimental Biology and American Heart Association Scientific Session • Publications PMID 33587335, 34559580, 34714691, 30412440, 34559580, 32506214, 30412440	
Brand, Lukas Research Intern, 2018-2019	Advisor for honors project in research required for completion of degree at University of Koblenz, Germany	Adipose specific loss of Procollagen C-endopeptidase enhancer 2 Impairs Mitochondrial Function and Promotes Endothelial Dysfunction	• Honors Project for Bachelor of Science • Abstract presentation at Experimental Biology 2019 and Vascular Discoveries 2019	Physiology graduate student MCW
Rappelt, Matthew Medical student 2018-2021	Co-Preceptor for summer research, pathway and honors in research project	Mitochondrial defects in pre-eclampsia	• Medical Student Summer Research Fellowship via T35 training grant • Presented work at AHA scientific sessions 2019 • Contributed to Manuscript (pending) • Honors in Research	Resident Aurora Health Care, Wisconsin
Paniagua, Luis Medical student, 2018-2020	Co-Preceptor for summer research, pathway and honors in research project	Chemotherapy induced gene expression changes in endothlial cells	• Medical Student Summer Research Fellowship via T35 training grant • Honors in Research • contribution to publication (pending)	Resident University of California system
Ikuobolati, Blessed ROADS student 2019	Co-Preceptor for ROADS program	Microvascular fibrosis hearts in in patients CAD and CHF		Completing Undergraduat e education
Stephens, Courtney, Undergraduate Student 2019	Preceptor SPUR program	Role of Autophagy in Coronary Artery disease		Unknown

Gutierrez Huerta, Cristhian MSTP student 2020 -	Primary Mentor Ph.D Thesis research project	Role of mitcondrial fission and fusion in microvascular vascular disease pathology of CAD	• National Medical Fellowships - United Health Foundation Diverse Medical Scholars Program • Martin Frank Diversity travel Award from the APS • Presentation at Experimental Biology 2022	N/A
Terwoord, Janee Post-Doctoral Fellow 2020-	Primary Mentor Post-Doctoral Research	Impact of Anti-Cancer Therapy on Mitochondrial Integrity within the Microvascular Endothelium	• Cardiovascular Center Medical College of Wisconsin T32 postdoctoral Fellow • Best poster award 2021 Department of Medicine research retreat • MCS pappenheimer postdoctoral award 2021 • Experimental Biology 2021, 2022 • Publications PMID – 35063569, 34196687	N/A
Young, Micaela Predoctoral Trainee 2020-2022	Research Technician I/Post-Bachelor training	Exploration of β-del TERT as a negative regulator of mitochondrial integrity	• NIH Diversity supplement Publications PMID: 34559580 + one Pending	Data Analyst I Flagship Biosciences
Brand, Lukas Graduate student 2021 -	Primary Mentor Ph.D Thesis research project	Contribution of Telomerase activity to Anticancer Therapy-Induced Microvascular Dysfunction	• Zweifach Student Travel Awards 2022 • Presentation at Experimental Biology 2022 • Publications PMID: 34196687	N/A
Hidde, Mary Post-Doctoral Fellow 2022 -	co-mentor post-Doctoral research	Efficacy of exercise intervention to mitigate Cardiovascular toxicity in Breast cancer patients		N/A