



Final Program
June 6-7, 2024
University of Vermont Davis Center

June 6, 9:00 am- 3:25 PM EDT

- 9:00 am-9:10 am **Welcome** Co-Directors: Mary Cushman, MD MSc and Mark Nelson, PhD
Opening Remarks from Dean Page and Drs Cushman and Nelson
- 9:10 am-10:30 am **Population Cardiovascular and Brain Health** Moderators: Mary Cushman, MD MSc, Katharine Cheung, MD, PhD
Donald M Lloyd-Jones, MD, ScM, Chair, Department of Preventive Medicine, Eileen M Foell Professor of Medicine (Cardiology), and Pediatrics, Northwestern University
Presentation Title: *Defining the Life Course of Cardiovascular and Brain Health: Mechanisms and Outcomes*
Debra Kamin Mukaz, PhD, Assistant Professor of Medicine
Presentation Title: *Cardiovascular Health and Inflammation: Intersectional Impact of Structural Racism, Sexism and Classism*
Diego Adrianzen, MD, MSc, Assistant Professor of Medicine
Presentation Title: *Risk Prediction and Inflammatory Biomarkers of Cardiovascular Disease in Myelodysplastic Syndromes*
- 10:30 am-10:45 am **Coffee Break**
- 10:45 am-12:01 pm **Pipeline Investigator Flash Talks** Moderators: Diego Adrianzen, MD MSc, David Punihaole, PhD
Yangguang Ou, PhD, Assistant Professor of Chemistry
Presentation Title: *Measuring Reactive Oxygen Species from Cells Incubated with Different Fibril Polymorphs*
Ajit Singh, PhD, Postdoctoral Fellow, Pharmacology
Presentation Title: *PfBDP1: a Master Regulator of Red Blood Cell Invasion Genes*
Emily Belarmino, PhD, Assistant Professor of Nutrition and Food Sciences
Presentation Title: *Potential of Plant-based Diets to Improve Rural Heart Health*
David Coggin-Carr, MD, PhD, Assistant Professor of Obstetrics and Gynecology
Presentation Title: *Effects of Electroacupuncture on Skeletal Muscle Akt Expression in a Rat Model of Maternal Obesity*
Nicole Habel, MD, PhD, Clinical Cardiac Electrophysiology Fellow, Medicine
Presentation Title: *The Electrician's Approach to Heart Failure*
Karlyn Martin, MD, MS, Associate Professor of Medicine
Presentation Title: *Optimizing The Delivery of Treatment and Preventive Care for Venous Thromboembolism*
Chris Skinner, PhD, Assistant Professor of Nutrition and Food Sciences
Presentation Title: *Untangling the Intersection of Diet and Alcohol-Driven Liver Disease*
Maria Noterman-Soulinthavong, PhD, Postdoctoral Associate, Pharmacology
Presentation Title: *Protecting and Perturbing PIP₂ in Brain Capillary Endothelial Cells: Implications for Neurovascular Coupling*

12:01 pm-12:45 pm **Lunch Break**

12:45 pm-2:00 pm **Poster Session:** *Please enjoy poster displays and be sure to join the moderated poster session. Don't miss posters from our Research Cores in the COBRE Corner!*

1:00 pm: Moderated Posters: Basic Science

Moderator: Elizabeth M. C. Hillman, PhD

Wendy Memishian *Cerebral Blood Flow Autoregulation in Adult Offspring: Testing the Effects of Experimental Preeclampsia and Sevoflurane*

Gabe Speidel *High Cholesterol Model of Preeclampsia Does Not Demonstrate Changes in Postpartum Common Carotid Artery Structure*

Uma Nudurupati *Developing and Optimizing A Small, Rapid Cu(II)-Sensitive and Selective Biosensor for Elucidating the Role of Cu(II) in Amyloid-B Aggregation in Real Time*

Daniel Penados Richter *DCBLD Protein Family Regulates the Eye and Vascular Development of Zebrafish*

2:00 pm-3:20 pm **Fundamental Science to Improve Brain Health**

Moderator: Maria Noterman, PhD

Elizabeth M. C. Hillman, PhD, Professor of Biomedical Engineering & Radiology (Physics), Department of Biomedical Engineering, Columbia University

Presentation Title: *Neurovascular Coupling in The Brain in Vivo*

Nicholas Klug, PhD, Assistant Professor of Pharmacology

Presentation Title: *Role of Brain Pericyte KATP Channels in Physiological Hypoxia Sensing and Deficient Blood Flow Regulation in Ischemic Small Vessel Disease*

David Punihaole, PhD, Assistant Professor of Chemistry

Presentation Title: *Determining How Amyloid- β Fibril Polymorphs Influence Cellular Toxicity*

3:20 pm-3:30 pm **Concluding Remarks / Announcements**

Mary Cushman, MD, MSc

5:30 pm-7:30 pm **Reception**

Echo, Leahy Center for Lake Champlain, 1 College Street, Burlington, VT 05401

- 9:00 am-9:10 am **Welcome** Mary Cushman, MD, MSc
- 9:10 am-10:10 am **Pilot Grant Awardee Presentations** Moderators: Peter Durda, PhD, Osama Harraz, PhD
Adam Sprouse-Blum, MD, Assistant Professor of Neurological Sciences
Presentation Title: *Dura Mater Pericytes as a Target for Vascular Dysfunction during Migraine*
Mansour Gergi, MD, Assistant Professor of Medicine
Presentation Title: *Cardiovascular Care Delivery and Bleeding in Individuals with Cancer*
Matthew Caporizzo, PhD, Assistant Professor of Molecular Physiology and Biophysics
Presentation Title: *The Molecular Underpinnings of Diastolic Dysfunction*
- 10:10 am-11:30 am **Poster Session:** Please enjoy poster displays and be sure to join the moderated poster session. Don't miss posters from our Research Cores!
- 10:30am : Moderated Posters: Population Science** Moderator: Donald Lloyd-Jones, MD, ScM
- Sarah Krumholz** Soluble Receptor for Advanced Glycation End Products and incident Hypertension: The REasons for Geographic and Racial Differences in Stroke (REGARDS) study
- Brittney Palermo** Soluble Receptor for Advanced Glycation End Products (sRAGE) and Diabetes in a Biracial Cohort: The REasons for Geographic and Racial Differences in Stroke
- Massoud Saleki** Association Between Earlier SGLT2i Initiation and 30-Day Heart Failure-Related Readmission Rates: A Retrospective Study
- Jiachen Chen** Circulating Immune Cell Phenotypes Are Associated with Inflammatory Biomarkers in Dementia-free Participants: Framingham Heart Study Offspring cohort
- Krystal Ramos Barrera** Structural Racism and Diabetes Prevalence among Black and White US Populations
- 11:30 am-12:10 pm **Diversity and Inclusion Keynote** Moderator: Debora Kamin Mukaz, PhD
- Nanette K. Wenger, MD**, Professor of Medicine (Cardiology) Emeritus, Emory University
Presentation Title: *Cardiovascular Disease in Woman: Epidemiology, Awareness, Access and Delivery of Equitable Healthcare*
- 12:10 pm-1:10 pm **Lunch Break**
- 1:10 pm-1:50 pm **Mid-Career & VCCBH Partner Investigator Flash Talks** Moderators: Julie Dumas, PhD, Ira Bernstein, MD
- Caitlin Howe, PhD**, Assistant Professor of Epidemiology, Dartmouth
Presentation Title: *Maternal Blood Pressure and Circulating miRNAs during Pregnancy*
Sherrie Khadanga, MD, Assistant Professor of Medicine, Director of Cardiac Rehabilitation, UVM
Presentation Title: *Optimizing Training Response in Cardiac Rehabilitation*
Hugo Pomares-Millan, MD, PhD, Postdoctoral Fellow, Dept of Epidemiology, Dartmouth
Presentation Title: *Modifiable risk Factors to Predict Susceptibility in Cardiometabolic Conditions*
- Nels Olson, PhD**, Assistant Professor of Pathology and Laboratory Medicine, UVM
Presentation Title: *Circulating Biomarkers of Cardiovascular and Neurocognitive Diseases*
Kalev Freeman, MD. PhD, Associate Professor of Surgery, UVM
Presentation Title: *Cardiovascular Sequelae of Traumatic Brain Injury*
- 1:50 pm-2:00 pm **Closing Remarks** Mary Cushman, MD, MSc and Mark Nelson, PhD

Posters

Science Posters

There are no assigned spaces. Please note the moderated posters in the program

Jessica Badlam, MD	History of Adverse Pregnancy Outcomes in Women with Pulmonary Arterial Hypertension: A Single Center Pilot Study
Grace Bonson, PhD	Endothelial-specific Ablation of the Scramblase TMEM16f Reduces In Vivo Clot Formation in Mice
Matt Caporizzo, PhD	Isolating the Cellular and Extracellular Contributions To Diastolic Mechanics
Jade Cleary	Histone-Induced Calcium Events and Plasma Membrane Activation Do Not Require Store-Operated Calcium Entry
Andres Cordova, MD	Patent Foramen Ovale Closure vs Medical Therapy in Patients ≥ 60 Years of Age with Ischemic Stroke: A Retrospective Cohort Study
Caity Decara	Investigation of Capillary Density Changes during Chronic Hypertension as an Underlying Mechanism of Reduced Hippocampal Perfusion and Memory Dysfunction
Julie Dumas, PhD	Effects of Choline on Brain Functioning in Postmenopausal Women
Grace Ebner	TBD
Michael Forster, PhD	Empowering genomics with proteomics to improve understanding of common complex diseases
Mansour Gergi, MD	Antithrombotic use for cardiovascular disease after a cancer diagnosis
Nicole Habel, MD	Physiologic Accelerated Pacing as a Treatment for Heart Failure with Preserved Ejection Fraction
Maddy Hatch	<i>Towards Direct Assessment of Amyloid Fibril Structures in Brain Tissue</i>
Jenan Husain	Urinary Bladder Dysfunction in a Novel Model of Neuroendocrine Stress
Michael Ippolito	Vascular Interoception and Cerebral Blood Flow Control
David Jangraw, PhD	fMRI Inter-Subject Correlation Techniques Increase Sensitivity to Individual Differences in Narrative Processing
Wen Ma, PhD	Multiscale Models of Myosin Modulation: Insights for Treating Cardiomyopathy
Stephen Paige	Activatable MR Contrast Agent Sensitive to Oxidative Stress
Sophia Piffard	Overcoming Limitations of Fluorescent Intensity and Background Analysis of Confocal Microscopy Images by Differential Standard Deviation Analysis
Tim Plante, MD, MHS	Life's Essential 8 and Severe Covid-19 among Adults without Cardiovascular Disease in C4R
Clemens Probst	Characterization of Blood Flow Deficits in a Mouse Model of Cerebral Autosomal Dominant Arteriopathy with Subcortical Infarcts and Leukoencephalopathy (CADASIL)
Nicole Roode	Size-Specific Nanoparticles as Treatment for Vascular Disease
Adrian Sackheim	Mild Repetitive Blast Traumatic Brain Injury Causes Behavioral Spatial Accuracy Deficits in Mice
Anna Pace	Activation of mTOR Signaling in the Paraventricular Nucleus of the Hypothalamus (PVN) Contributes to Stress- and BDNF-induced Hypertensive Responses

COBRE Corner Posters

Owen Nadeau, PhD	Vermont Center for Cardiovascular and Brain Health
Todd Clason, MS	VCCBH Customized Physiology and Imaging Core
Peter Durda, PhD	VCCBH Study Design and Molecular Epidemiology Core
Margaret Karagas, PhD	Dartmouth Center on Molecular Epidemiology

GRATITUDE

Thank you to the VCCBH External Advisory Board!

Manuel F. Navedo, PhD
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Scott Earley, PhD
Sharon Rounds, MD

Professor of Pharmacology, University of Nevada, Reno
Professor of Medicine, Professor of Pathology and Laboratory Medicine, Brown University

Thank you to the Organizing Committee!

Ira Bernstein, MD; Julie Dumas, PhD; Peter Durda, PhD; Debora Kamin Mukaz, PhD; Nicholas Klug, PhD; Owen Nadeau, PhD; David Punihaole, PhD; Mary Cushman, MD, MSc

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