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

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

9:00 - 9:10  Welcome  Co-Directors: Mary Cushman, MD MSc and Mark Nelson, PhD
Opening Remarks from Dean Page and Drs Cushman and Nelson

9:10 - 10:30  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
Defining the Life Course of Cardiovascular and Brain Health: Mechanisms and Outcomes
Debora Kamin Mukaz, PhD, Assistant Professor of Medicine
Cardiovascular Health and Inflammation: Intersectional Impact of Structural Racism, Sexism and Classism
Diego Adrianzen, MD, MSc, Assistant Professor of Medicine
Risk Prediction and Inflammatory Biomarkers of Cardiovascular Disease in Myelodysplastic Syndromes

10:30 - 10:45  Coffee Break

10:45 - 12:01  Pipeline Investigator Flash Talks  Moderators: Diego Adrianzen, MD MSc, David Punihaole, PhD
Yangguang Ou, PhD, Assistant Professor of Chemistry
Measuring Reactive Oxygen Species from Cells Incubated with Different Fibril Polymorphs
Ajit Singh, PhD, Postdoctoral Fellow, Pharmacology
PfBDP1: a Master Regulator of Red Blood Cell Invasion Genes
Emily Belarmino, PhD, Assistant Professor of Nutrition and Food Sciences
Potential of Plant-based Diets to Improve Rural Heart Health
David Coggin-Carr, MD, PhD, Assistant Professor of Obstetrics and Gynecology
Effects of Electroacupuncture on Skeletal Muscle Akt Expression in a Rat Model of Maternal Obesity
Nicole Habel, MD, PhD, Clinical Cardiac Electrophysiology Fellow, Medicine
The Electrician’s Approach to Heart Failure
Karlyn Martin, MD, MS, Associate Professor of Medicine
Optimizing The Delivery of Treatment and Preventive Care for Venous Thromboembolism
Chris Skinner, PhD, Assistant Professor of Nutrition and Food Sciences
Untangling the Intersection of Diet and Alcohol-Driven Liver Disease
Maria Noterman-Soulinthavong, PhD, Postdoctoral Associate, Pharmacology
Protecting and Perturbing PIP2 in Brain Capillary Endothelial Cells: Implications for Neurovascular Coupling

12:01 - 12:15  Lunch Break

12:45 - 2:00  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:  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*

2:00-3:20  
**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  
*Neurovascular Coupling in The Brain in Vivo*

Nicholas Klug, PhD, Assistant Professor of Pharmacology  
*Role of Brain Pericyte KATP Channels in Physiological Hypoxia Sensing and Deficient Blood Flow Regulation in Ischemic Small Vessel Disease*

David Puniahaole, PhD, Assistant Professor of Chemistry  
*Determining How Amyloid-B Fibril Polymorphs Influence Cellular Toxicity*

3:20-3:30  
**Concluding Remarks / Announcements**  
**Moderator:** Mary Cushman, MD, MSc

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

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

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**June 7, 9:00am-2:40 PM EDT**

9:00-9:10  
**Welcome**  
**Moderator:** Mary Cushman, MD, MSc

9:10-10:10  
**Pilot Grant Awardee Presentations**  
**Moderators:** Peter Durda, PhD, Osama Harraz, PhD

Adam Sprouse-Blum, MD, Assistant Professor of Neurological Sciences  
*Dura Mater Pericytes as a Target for Vascular Dysfunction during Migraine*

Mansour Gergi, MD, Assistant Professor of Medicine  
*Cardiovascular Care Delivery and Bleeding in Individuals with Cancer*

Matthew Caporizzo, PhD, Assistant Professor of Molecular Physiology and Biophysics  
*The Molecular Underpinnings of Diastolic Dysfunction*

10:10-11:30  
**Poster Session:** Please enjoy poster displays and be sure to join the moderated poster session. Don’t miss posters from our Research Cores!

**10:30: Moderated Posters: Population Science**  
**Moderator:** Donald Lloyd-Jones, MD, ScM

Sarah Krumholtz  
*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*

11:30-12:00  
**Diversity and Inclusion Keynote**  
**Moderator:** Debora Kamin Mukaz, PhD

Nanette K. Wenger, MD, Professor of Medicine (Cardiology) Emeritus, Emory University  
*Cardiovascular Disease in Woman: Epidemiology, Awareness, Access and Delivery of Equitable Healthcare*

12:10-1:10  
**Lunch Break**
1:10-1:50  **Mid-Career & VCCBH Partner Investigator Flash Talks**  
Moderators: Julie Dumas, PhD, Ira Bernstein, MD  
- **Caitlin Howe, PhD**, Assistant Professor of Epidemiology, Dartmouth  
  *Maternal Blood Pressure and Circulating miRNAs during Pregnancy*  
- **Sherrie Khadanga, MD**, Assistant Professor of Medicine, Director of Cardiac Rehabilitation, UVM  
  *Optimizing Training Response in Cardiac Rehabilitation*  
- **Hugo Pomares-Millan, MD, PhD**, Postdoctoral Fellow, Dept of Epidemiology, Dartmouth  
  *Modifiable risk Factors to Predict Susceptibility in Cardiometabolic Conditions*  
- **Nels Olson, PhD**, Assistant Professor of Pathology and Laboratory Medicine, UVM  
  *Circulating Biomarkers of Cardiovascular and Neurocognitive Diseases*  
- **Kalev Freeman, MD, PhD**, Associate Professor of Surgery, UVM  
  *Cardiovascular Sequelae of Traumatic Brain Injury*

1:50-2:00  **Closing Remarks**  
Mary Cushman, MD, MSc and Mark Nelson, PhD

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**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**  
  *Towards Direct Assessment of Amyloid Fibril Structures in Brain Tissue*

- **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 Professor of Pharmacology, University of California, Davis
Suzanne Judd, PhD MPH Professor of Biostatistics, Director: Lister Hill Center for Health Policy, University of Alabama, Birmingham
Scott Earley, PhD Professor of Pharmacology, University of Nevada, Reno
Sharon Rounds, MD 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 Puniaole, PhD; Mary Cushman, MD, MSc

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