



Final Program

June 6 - 7, 2024

University of Vermont Davis Center

June 6th, 9:00 am- 3:30 pm EDT

DEBORA

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

OSAMA

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

NICK: Yangguang Ou, PhD, Assistant Professor of Chemistry

Measuring Reactive Oxygen Species from Cells Incubated with Different Fibril Polymorphs

MARY: Emily Belarmino, PhD, Assistant Professor of Nutrition and Food Sciences

Potential of Plant-based Diets to Improve Rural Heart Health

OSAMA: 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

DEBORA: Nicole Habel, MD, PhD, Clinical Cardiac Electrophysiology Fellow, Medicine

The Electrician's Approach to Heart Failure

MARY: Karlyn Martin, MD, MS, Associate Professor of Medicine

Optimizing The Delivery of Treatment and Preventive Care for Venous Thromboembolism

DEBORA: Chris Skinner, PhD, Assistant Professor of Nutrition and Food Sciences

Untangling the Intersection of Diet and Alcohol-Driven Liver Disease

NICK: Maria Noterman-Soulinthavong, PhD, Postdoctoral Associate, Pharmacology

Protecting and Perturbing PIP₂ in Brain Capillary Endothelial Cells: Implications for Neurovascular Coupling

12:01-12:45

Lunch Break

OSAMA AND NICK: PLEASE COVER THE MODERATED POSTER PRESENTATIONS. DEBORA WILL BE GIVING THE AWARD RIGHT AFTER SO PLEASE GET A PIC AND POST THAT. I WILL COVER OTHER POSTERS WITH A FEW POSTS

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

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

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

OSAMA: 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*

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

OSAMA

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 Punihale, PhD, Assistant Professor of Chemistry

Determining How Amyloid- β Fibril Polymorphs Influence Cellular Toxicity

DEBORA

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

I'LL PUT SOMETHING UP.

5:30-7:30 **Reception**
Echo, Leahy Center for Lake Champlain, 1 College Street, Burlington, VT 05401

June 7th, 9:00 am - 2:00 pm EDT

- 9:00-9:10 **Welcome** Mary Cushman, MD, MSc
- 9:10-10:10 **Pilot Grant Awardee Presentations** Moderators: Peter Durda, PhD, Osama Harraz, PhD
NICK: Adam Sprouse-Blum, MD, Assistant Professor of Neurological Sciences
Dura Mater Pericytes as a Target for Vascular Dysfunction during Migraine
MARY: Mansour Gergi, MD, Assistant Professor of Medicine
Cardiovascular Care Delivery and Bleeding in Individuals with Cancer
NICK: Matthew Caporizzo, PhD, Assistant Professor of Molecular Physiology and Biophysics
The Molecular Underpinnings of Diastolic Dysfunction
- DEBORA AND MARY COVER MODERATED POSTERS. OSAMA AND NICK COVER THE REST OF THE POSTERS**
- 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
- DEBORA: Sarah Krumholz** *Soluble Receptor for Advanced Glycation End Products and incident Hypertension: The REasons for Geographic and Racial Differences in Stroke (REGARDS) study*
- MARY: 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*
- DEBORA: Massoud Saleki** *Association Between Earlier SGLT2i Initiation and 30-Day Heart Failure-Related Readmission Rates: A Retrospective Study*
- MARY: Krystal Ramos Barrera** *Structural Racism and Diabetes Prevalence among Black and White US Populations*
- MARY POST THE SHOT OF THE WINNER**
- 11:30-12:10 **Diversity and Inclusion Keynote** Moderator: Debora Kamin Mukaz, PhD
MARY: 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
- DEBORA: Caitlin Howe, PhD**, Assistant Professor of Epidemiology, Dartmouth
Maternal Blood Pressure and Circulating miRNAs during Pregnancy
- OSAMA: Sherrie Khadanga, MD**, Assistant Professor of Medicine, Director of Cardiac Rehabilitation, UVM
Optimizing Training Response in Cardiac Rehabilitation
- MARY: Hugo Pomares-Millan, MD, PhD**, Postdoctoral Fellow, Dept of Epidemiology, Dartmouth
Modifiable risk Factors to Predict Susceptibility in Cardiometabolic Conditions
- DEBORA: Nels Olson, PhD**, Assistant Professor of Pathology and Laboratory Medicine, UVM
Circulating Biomarkers of Cardiovascular and Neurocognitive Diseases
- NICK: 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

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
Laura Gray	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
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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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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