

Vermont Center for Cardiovascular and Brain Health

The Vermont Center for Cardiovascular and Brain Health (VCCBH) is a $12 million NIH-funded Center of Biomedical Research Excellence (COBRE) that is Co-led by Mary Cushman, M.D., M.Sc., University of Vermont Professor of Medicine, and Mark Nelson, Ph.D., University Distinguished Professor and Chair of Pharmacology. The Center's mission is to develop sustainable programs to elucidate pathophysiological mechanisms underlying cardiovascular disease, stroke, and cognitive impairment.

VERMONT CENTER FOR CARDIOVASCULAR & BRAIN HEALTH

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Impact of VCCBH FY23-24

The VCCBH brings scientific and clinical advances in cardiovascular and neurovascular diseases to Vermonters and the nation, to ultimately reduce their incidence.

- Cardiovascular diseases and stroke are leading causes of death in Vermont and around the world.
- There is increasing recognition of connections between vascular health and brain health, including dementia and other cognitive disorders.
- 78 million worldwide will be living with dementia by 2030
- Vermont is aging more rapidly than other states, ranking 4th in the US for proportion aged over 65 years (19.4%, predicted to increase to 28% by 2030); so the impact of cardiovascular disease, stroke and dementia is disproportionately large.
- From 2018-20, the death rate in Vermont for cardiovascular diseases was 304 per 100,000; we rank 20th in the U.S. for heart disease death, and 42nd for stroke.
- There are ~13,000 Vermonters living with Alzheimer's Disease (and 30,000 caregivers caring for them). It is our 4th leading cause of death (the 13th highest rate in the US).

Program Overview

VCCBH support from the National Institute of General Medical Sciences at the National Institutes of Health (NIH) reflects UVM Larner College of Medicine's internationally recognized cardiovascular, vascular and neurovascular expertise and contributions to the field. The Center comprises:

- over 50 Jr and Sr faculty,
- 2 research cores,
- 1 administrative core,
- a communications committee maintaining a website, Twitter feed and news updates to facilitate outreach to state, national and international partners.

Success Stories

Selected Research Accomplishments:

- Six Project Directors, Drs Katharine Cheung, Matthew Caporizzo, Osama Harraz, Masayo Koide, Denise Peters, David Punihaole; and our Pilot Grant Leaders published 25 articles in high impact medical journals and received $8,933,698 in NIH funding.
- Drs Caporizzo and Harraz received R01 funding, and Dr Harraz was awarded an R21 and a $700K Team Science Supplement from NIGMS.
- Pilot Grant leader, Emmett Whitaker, MD, was awarded an R35 and a $312K Woman's Health supplement from NIGMS.
- Incoming Project Director Dr Debora Kamin Mukaz was recognized by the United Negro College Fund Ernest E. Just Life Sciences Society at the National Museum of African American History and Culture in Washington, D.C., for her work with Black in Cardio
- Dr. Cheung was advanced to Interim Director of UVM's Center on Aging.





Center and Career Building Highlights

- Expanded use of our 2 research cores: ***Study Design and Molecular Epidemiology*** and ***Customized Physiology and Imaging*** that provide UVM researchers support for experimental design & biostatistics, translate basic research findings to human populations, deliver state-of-the-art capabilities for fixed and live cell and in vivo imaging, device fabrication and image analysis.
- Awarded 4 Pilot Grants of $200K to Jr Faculty on topics including dura matter pericytes as a target for vascular dysfunction in migraine, cardiovascular care in cancer patients, and modeling exercise intolerance in human cardiac slice preparations.
- Annual Scientific Symposium on campus each June
- Monthly conference including visiting professors
- Innovative peer mentoring programs for early-career faculty

NIGMS Funding received by the VCCBH FY23-24

Program/Grant Name	Type / Institution	FY	Cong District	Amount
Vermont Center for Cardiovascular and Brain Health (VCCBH), COBRE, Phase I (MPIs: Mary Cushman, MD, MSc; Mark Nelson, PhD Award #P20GM135007)	COBRE Phase-1 / Lead Institution: UVM	2023	VT	$2,318,833
Team Science Supplement	COBRE Phase-1 / Lead Institution: UVM	2023	VT	$660,479
Woman's Health Supplement	COBRE Phase-1 / Lead Institution: UVM	2023	VT	$311,950
			Total Funds	**$3,291,262**