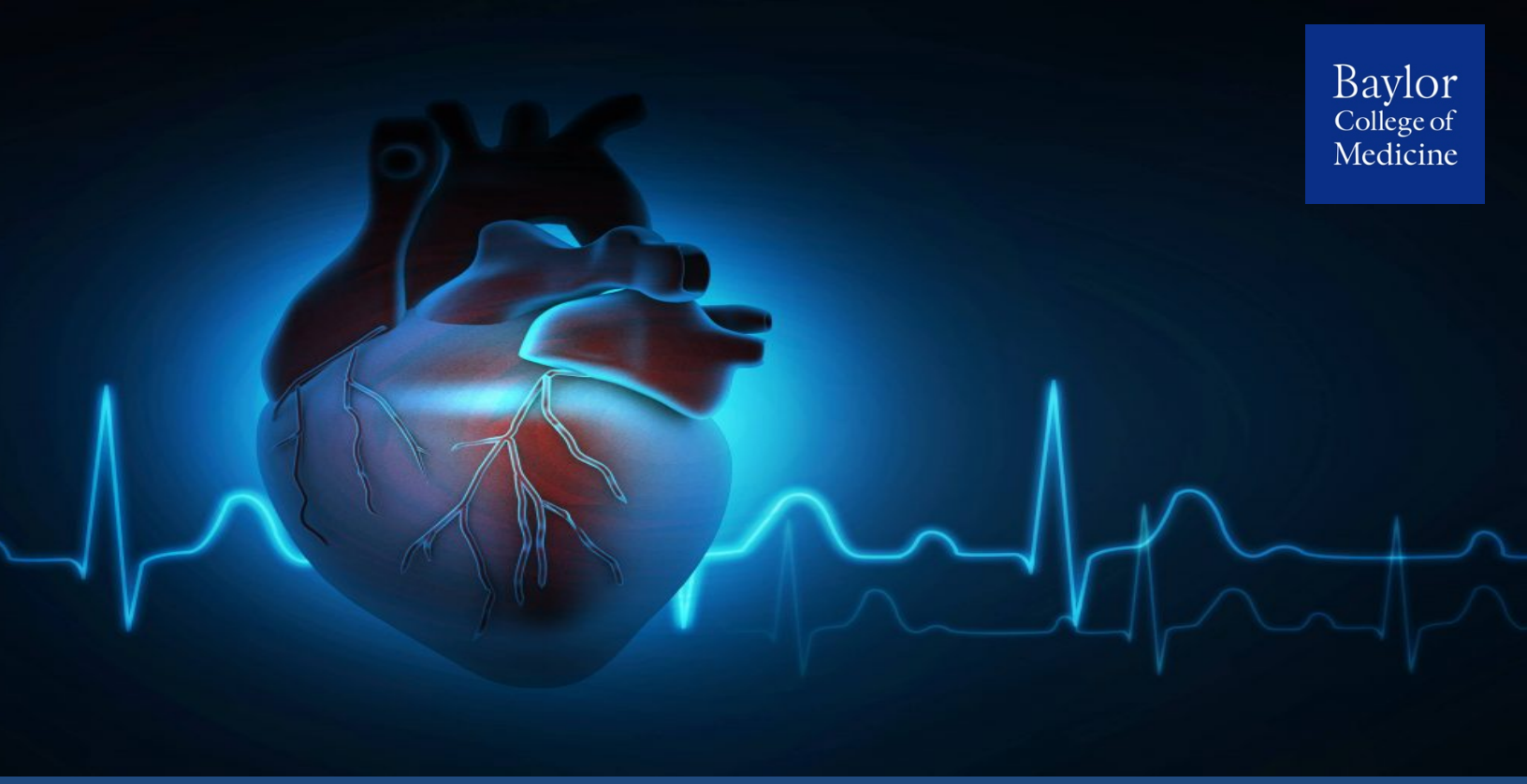

Cardiovascular Research Institute

Fall 2025 Newsletter

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cvri@bcm.edu

Dr. Biykem Bozkurt Receives the Laennec Clinician-Educator Award from the American Heart Association

On November 7th 2025, Biykem Bozkurt, M.D., Ph.D. received the 2025 Laennec Clinician-Education Award from the American Heart Association.

The Laennec Clinician/Educator Lecture was established in 1970 by the Laennec Society, a section of the Council on Clinical Cardiology, but was not presented consistently until 1978. The major aim of the Society is to promote the importance of bedside cardiology and the application of clinical research to the bedside.

Dr. Biykem Bozkurt is the Senior Dean of Faculty, the Mary and Gordon Cain Chair and Professor of Medicine; Director of the Winters Center of Heart Failure; and Associate Director of Cardiovascular Research Institute at Baylor College of Medicine in Houston, Texas.

Dr. Bozkurt is globally recognized for her work and leadership in heart failure. She served as President of the Heart Failure Society of America from 2019 to 2020, chaired the 2021 Universal Definition and Classification of Heart Failure, and served as Vice Chair of the 2022 AHA/ACC Heart Failure Guidelines. Dr. Bozkurt is actively engaged in clinical research, delivers heart failure care, presents at national and international scientific meetings, and is deeply committed to teaching and mentoring trainees and faculty. She is the current Editor-in-Chief of *JACC: Heart Failure*.

Throughout her career, Dr. Bozkurt has been recognized for excellence in clinical care, education and research. She was the recipient of the American College of Cardiology Proctor Harvey MD Young Teacher Award, American College of Cardiology Gifted Educator Award, Baylor College of Medicine presidential awards in Education, Lifetime Master Clinician, and Professionalism.

In 2024, she received the Distinguished Leadership Award of the Heart Failure Society of America and the American College of Cardiology 2024 Bahr Award of Excellence. In 2025, she was awarded the American College of Cardiology Distinguished Fellow Award. She has been listed in Clarivate World's Highly Cited Researchers (top 1% Web of Science) in 2018, 2019, 2020, 2023 and 2024.

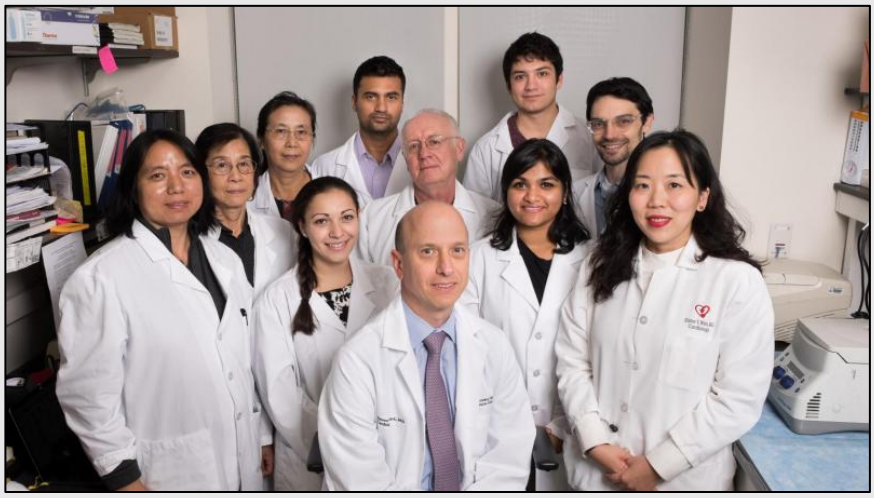
Congratulations to Dr. Bozkurt on such an outstanding honor!

Credit: American Heart Association Professional Heart Daily

The 2025 Mark L. Entman, MD, Distinguished Lecture in Cardiovascular Research

On November 19, 2025, the Cardiovascular Research Institute (CVRI) at Baylor College of Medicine was pleased to host Dr. Steven Marx as the visiting professor who delivered the 6th annual Mark L. Entman, MD, Distinguished Lecture in Cardiovascular Research. Since 2019, the CVRI has organized this annual lectureship in honor of Dr. Mark Entman, a distinguished emeritus Professor at Baylor who served as a visionary leader for over half a century.

Dr. Steven Marx is a faculty member at the Columbia University School of Medicine, where he is the Herbert and Florence Irving Professor of Cardiology, and Professor of Pharmacology and Physiology. Dr. Marx also directs the Cardiovascular Fellowship Program and is a co-program director of an NHLBI-funded T32 training program for physician-scientists at Columbia University.



The Marx Lab studies how ion channels, key proteins that control cardiac and blood vessel function, are regulated by large protein complexes. Their research has revealed how these channels are controlled in both healthy and diseased hearts, shedding new light on the causes of arrhythmias, heart failure, and blood pressure regulation. In collaboration with the Wan Lab and Morrow Lab, they are developing new methods to diagnose and treat life-threatening arrhythmias. Their work focuses on two main areas: the heart, exploring how ion channel function affects rhythm and contraction, and the vasculature, studying how molecular changes influence blood vessel function. Together, their mission is to advance cardiovascular research and develop new therapies to improve heart and blood vessel health and prevent premature death.

Dr. Marx' lecture at Baylor, *"Unraveling the Mechanisms of Fight or Flight: How the Heart Responds to Adrenergic Signals,"* provided a fascinating look into the molecular underpinnings of cardiac function. He explained how proximity proteomics can be used to identify molecular neighborhoods within the heart muscle cells, allowing researchers to better understand the complex interactions that regulate cardiac activity. Dr. Marx also highlighted the molecular mechanisms by which the heart increases its beating rate and contractility in response to adrenergic signals, providing a clear link between these cellular processes and physiological outcomes.

Pictured: Dr. Steven Marx

Additionally, he discussed how commonly used adrenergic agonists enhance cardiac function, shedding light on their clinical relevance and impact on patient care.

A key focus of Dr. Marx' work is the regulation of the L-type calcium channels (Cav1.2) by RGK family GTPases. In 2006, Marx co-authored a study in the American Journal of Physiology showing that the alpha-subunit and protein kinase inhibitors modulate Rem-mediated inhibition of L-type channel currents, revealing Rem's role in blocking channel activity through interactions that arrest channels in low open-probability states. His 2020 Nature paper (Nature, 577:695–700) used proximity proteomics to elucidate the mechanism of β-adrenergic stimulation of CaV1.2, demonstrating that Rad's dissociation upon phosphorylation enables enhanced channel activity during fight-or-flight responses. This work, cited over 270 times, advances understanding of sympathetic regulation of cardiac contraction. Attendees came away with a deeper appreciation for both the intricacy of cardiac signaling and the ways in which these discoveries can inform future therapies.

Dr. Marx's lecture was a valuable addition to the seminar series, bringing new insights and fostering engaging discussions, all while honoring Dr. Mark L. Entman's legacy.

Pictured (L to R): Drs. Xander Wehrens and Steven Marx

Pictured: Dr. Heinrich Taegtmeyer

Pictured (L to R): Jose Alberto Navarro Garcia, Satadru Lahiri, and Callum Quinn

Pictured: Dr. Susan Hamilton and Steven Marx

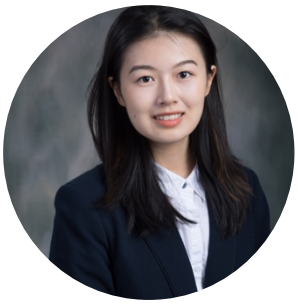
T32 Training Program in Cardiovascular Research and Drug Discovery

The Baylor College of Medicine Research Training Program in Cardiovascular Research and Drug Development is designed to prepare PhD students for a research career in cardiovascular research in academia or the pharmaceutical industry. Our innovative program includes interactive didactic courses, individualized training plans, formal training of research mentors, mentor training of the trainees, and an exceptional research infrastructure within the largest medical center in the world. The program emphasizes the highest standards of rigor and reproducibility, equity, and ethics, while incorporating strong translational and clinical components to allow our trainees to bridge critically important gaps in basic and translational cardiovascular research to develop future therapeutic interventions.

Funded by a T32 grant from the National Heart, Lung and Blood Institute (NHLBI), our program is led by program directors Xander Wehrens, MD, PhD Director of the Cardiovascular Research Institute, and Damian Young, PhD, Director of the Center for Drug Development.

Zaniqua Bullock, Graduate Student
Mentor: William Decker, PhD
Graduate Program: Chemical, Physical & Structural Biology

Jorie Fleischmann, Graduate Student
Mentor: Christine Beeton, PhD
Graduate Program: Development, Disease Models & Therapeutics



Zian Liao, Graduate Student
Mentor: Martin Matzuk, MD, PhD
Graduate Program: Genetics and Genomics

Inioluwa Ojediran, Graduate Student
Mentor: Jane Grande-Allen, PhD
Graduate Program: Rice Bioengineering

Jessica Wang, Graduate Student in the MSTP
Mentor: Jane Grande-Allen, PhD
Graduate Program: Rice Bioengineering

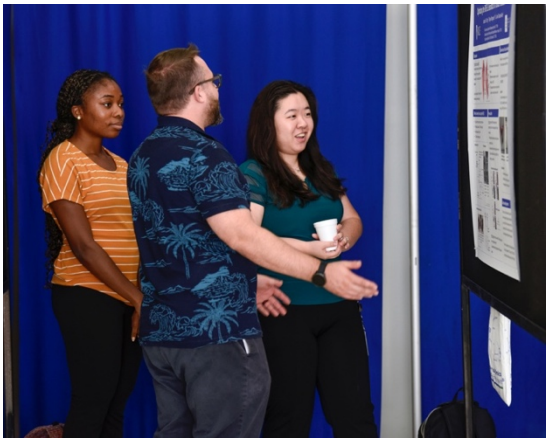
T32 Program Updates

We are pleased to welcome our newest trainee in our T32 Grant, Marque Villareal! Marque is a second-year graduate student in the Drug Development and Disease Models graduate program, working in Dr. Jason Karch's lab. She is broadly interested in how mitochondrial regulation influences cardiomyocyte survival and heart disease progression.

Her work focuses on understanding the molecular mechanisms that control mitochondrial integrity and cell death in the heart during stress conditions such as ischemia-reperfusion injury and heart failure. She is particularly interested in how mitochondrial dynamics and Bcl-2 family proteins coordinate to determine cell fate, with the goal of uncovering new pathways that promote cardio-protection and identify potential therapeutic targets for cardiovascular disease.

Please join us in welcoming Marque to our T32 Training Program!

T32 Students Present their Research at the Third Annual Nancy Chang, Ph.D. Research Symposium



Pictured: Inioluwa Ojediran and Jessica Wang

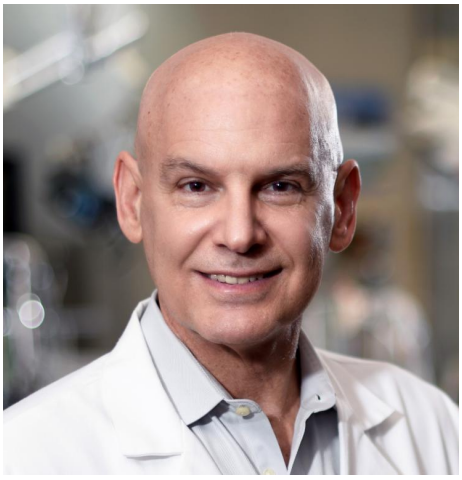
T32 Trainees; Inioluwa Ojediran and Jessica Wang presented their work at the Third Annual Nancy Chang, Ph.D. Research Symposium on October 3, 2025. They keynote speaker of this event was Dr. John M. Rice, Partner Emeritus at CincyTech.

Inioluwa (Ini) presented her research on "Investigating Fibriotic Remodeling in Functional Miral Regurgitation (FMR)"

Jessica presented her research on "Biomechanics of Functional Mitral Regurgitation: Optimizing the RUFLs Bioreactor for Better Disease Modeling."

Pictured: Nancy Chang, PhD

Dr. Christie Ballantyne Receives the 2025 Distinguished Scientist Award from the American Heart Association



Dr. Christie M. Ballantyne, Director of the Center for Cardiometabolic Disease Prevention at Baylor College of Medicine, has been named a 2025 Distinguished Scientist by the American Heart Association (AHA).

The Distinguished Scientist designation recognizes AHA professional members whose sustained, original scientific contributions have materially advanced cardiovascular and stroke research.

Ballantyne is internationally recognized for his research on lipids, inflammation and atherosclerosis. He directs multiple clinical and research programs focused on cardiometabolic disease prevention and has been continuously funded by the National Institutes of Health since 1988. With over 1,000 publications on atherosclerosis, lipids, genetics and inflammation, he also serves on the editorial boards for Circulation and the Journal of the American College of Cardiology (JACC).

Ballantyne's many accomplishments have included being elected as Fellow of the American Association for the Advancement of Science, the American Society of Clinical Investigation, and the Association of American Physicians. In 2012 he received the American College of Cardiology Distinguished Scientist Award (Basic Domain).

In 2014 and 2015, Thomson Reuters recognized Ballantyne as one of "The World's Most Influential Scientific Minds." Clarivate Analytics, Web of Science, named him as a "Highly Cited Researcher" 2017-2025 in the top 1% of most cited researchers. In 2019, Ballantyne was awarded the Baylor College of Medicine Michael E. DeBakey, MD, Excellence in Research Award. His research in biomarkers has led to the U.S. Food and Drug Administration (FDA) approval of two biomarkers for cardiovascular risk prediction, and he has played a prominent role in the development and FDA approval of new therapies for treatment of lipids and atherosclerosis.

To read the full article please click here.

Texas Heart Institute at Baylor College of Medicine holds reception for Dr. Christie Ballantyne in honor of receiving the AHA Distinguished Scientist Award.

On December 4th 2025, the Texas Heart Institute held a reception for Dr. Christie M. Ballantyne, MD, in honor of receiving the 2025 Distinguished Scientist Award from the American Heart Association. Please see the photos below from the event. (photo credit: Ramon Bernal; THI)

Dr. Joseph Rogers highlighting the extraordinary accomplishments of Dr. Ballantyne.

Dr. James McDeavitt (Executive Vice President and Dean of Clinical Affairs) highlighting Dr. Ballantyne's impact of patients with heart disease.

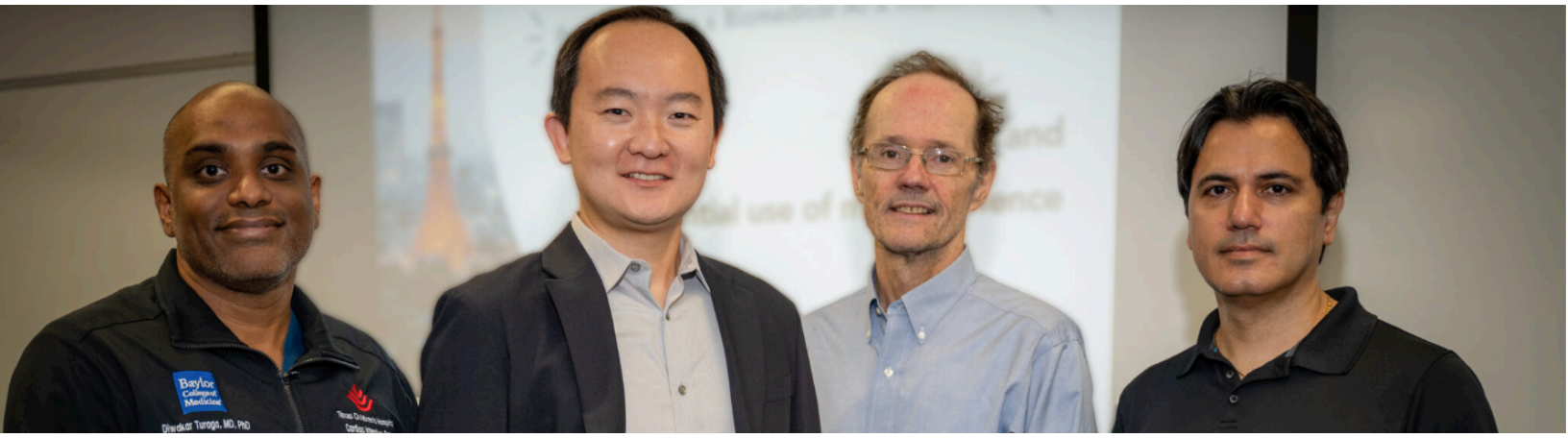
Dr. Ballantyne's reflection on his career at a Baylor College of Medicine since 1988.

Dr. Ballantyne pictured with CVRI Associate Director and Senior Dean of the Faculty, Dr. Biykem Bozkurt.

Dr. Ballantyne delivering his speech in front of his family and colleagues.

Dr. Ballantyne pictured with his wife and one of his daughters.

Texas Heart Institute at Baylor College of Medicine Awarded NIH Grant to Explore Immune Cell Role in Heart Failure



The Texas Heart Institute at Baylor College of Medicine's Gene Editing Lab has been awarded a highly competitive NIH R01 grant from the National Heart, Lung, and Blood Institute (NHLBI). The prestigious award will fund groundbreaking research into how changes in the heart's immune system contribute to the progression of heart failure.

Heart failure remains a leading cause of death and disability worldwide, affecting more than six million Americans. While current treatments help many patients, they cannot fully prevent the heart's gradual decline. To address this challenge, researchers are turning their attention to a previously overlooked factor: specialized immune cells in the heart known as macrophages.

At the forefront of this effort is Dr. Xiao Li, Assistant Professor and Principal Investigator of the project. Dr. Li's laboratory has led pioneering studies demonstrating how diseased macrophages drive the progression of heart failure. The newly awarded NIH R01 grant recognizes his innovative work and will provide critical support to advance his research on developing immune-based therapies for heart failure.

Working alongside Dr. Li is a distinguished team of co-investigators from the Center and Texas Children's Hospital, including Dr. James Martin, Dr. Arash Pezhouman, and Dr. Diwakar Turaga, whose combined expertise spans molecular medicine, cardiovascular biology, and critical care medicine. The project further benefits from collaborators at Northwestern University, including world-leading immunologist Dr. Edward Thorp, establishing a strong, multidisciplinary partnership.

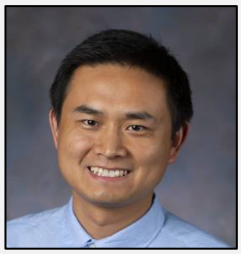
To read the full article please click here

Spring 2026 James T. Willerson, MD Cardiovascular Sciences Seminar Series

The James T. Willerson, MD Cardiovascular Sciences Seminar Series continues in Spring 2026. In collaboration with Texas Heart Institute, these seminars are in-person and held at Baylor College of Medicine on **select Wednesdays at noon**. CME credit is available to eligible attendees. Email **CVRI@bcm.edu** for further details.

January 7, 2026
Ketan Ghaghada, PhD
Associate Professor
Department of Radiology
Baylor College of Medicine
Texas Children's Hospital

Seminar Location: McMillian Auditorium

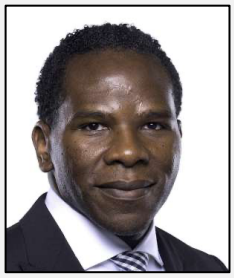


January 21, 2026
Mingtao Zhao, PhD
Associate Professor
Department of Pediatrics
The Ohio State University
Nationwide Children's Hospital

Seminar Location: McMillian Auditorium

February 11, 2026
Wenbo Li, PhD
Associate Professor
Department of Biochemistry and Molecular Biology
McGovern Medical School
UT Health

Seminar Location: McMillian Auditorium



February 25, 2026
Olujimi Ajijola, MD, PhD
Professor
Department of Medicine
Co-Director UCLA-Caltech Medical Scientist Training Program (MSTP)

Seminar Location: McMillian Auditorium

March 4, 2026
Guizhen Zhao, PhD
Associate Professor
Department of Pharmacological and Pharmaceutical Sciences
College of Pharmacy
University of Houston

Seminar Location: McMillian Auditorium

April 29, 2026
Sandhya Thomas, MD
Associate Professor
Department of Medicine-Nephrology
Baylor College of Medicine

Seminar Location: McMillian Auditorium

May 13, 2026
Jennifer Davis, PhD
Assistant Professor
Department of Pathology and Bioengineering (Joint)
University of Washington

Seminar Location: McMillian Auditorium

May 27, 2026
Na Li, PhD
Professor
Department of Medicine
Baylor College of Medicine

Seminar Location: McMillian Auditorium

Baylor College of Medicine

SAVE THE DATE

Cardiovascular Research Institute (CVRI)

13TH ANNUAL SYMPOSIUM

WEDNESDAY APRIL 8, 2026

KEYNOTE SPEAKER

Alfred L. George, Jr., MD
Professor and Chair
Department of Pharmacology
Director, Center for Phramacogenomics
Northwestern University Feinberg School of Medicine

ONE BAYLOR PLAZA
Cullen Auditorium

www.bcm.edu/cvri

Baylor College of Medicine
CARDIOVASCULAR RESEARCH INSTITUTE

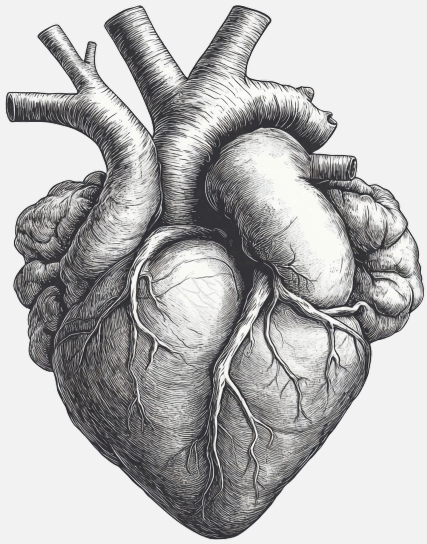
Term 4

Registration: February 16 - 27, 2026

GS-DD-6305: Advanced Topics in Vascular Pathophysiology & Disease

March 16-May 15, 2026
Tuesdays, Wednesdays, & Thursdays
9-10am
3 credits

Course description: This course emphasizes cardiovascular disease pathology with a focus on vascular disorders and atherosclerosis. Lectures will cover all components of the normal system, inherited forms of disease, and the pathogenesis of acquired types of disease. Topics include vascular diseases, lipid disorders, atherosclerosis, hemostasis and bleeding disorders, microcirculation disorders, stroke, hypertension, and peripheral artery disease. The course will also discuss the cutting-edge research approaches used in cardiovascular research. The course will be taught by a combination of clinicians, basic scientists, and physician-scientists from throughout the Texas Medical Center.



Course directors:
Xander Wehrens, MD, PhD
David Durgan, PhD

For more information:
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Select Publications

Share your work! Increase your impact!
Email cvri@bcm.edu with your latest publications and we will share it with our CV community on social media.

Hartig SM, Herman MA. Advancing de novo lipogenesis: Genetic and metabolic insights. Cell Metab. 2025 Jan 7;37(1):3-4. doi: 10.1016/j.cmet.2024.12.001. PMID: 39778518.

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Keefe JA, Aguilar-Sanchez Y, Navarro-Garcia JA, Ong I, Li L, Paasche A, Abu-Taha I, Tekook MA, Bruns F, Zhao S, Kamler M, Shen YH, Chelu MG, Li N, Dobrev D, Wehrens XH. Macrophage-mediated IL-6 signaling drives ryanodine receptor-2 calcium leak in postoperative atrial fibrillation. J Clin Invest. 2025 Mar 6;135(9):e187711. doi: 10.1172/JCI187711. PMID: 40048254; PMCID: PMC12043083.

Yuan Y, Martsch P, Chen X, Martinez E, Li L, Song J, Poppenborg T, Bruns F, Kim JH, Kamler M, Martin JF, Abu-Taha I, Dobrev D, Li N. Atrial cardiomyocyte-restricted cleavage of gasdermin D promotes atrial arrhythmogenesis. Eur Heart J. 2025 Apr 1;46(13):1250-1262. doi: 10.1093/eurheartj/ehaf024. PMID: 39927987; PMCID: PMC11959185.

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