

11th Annual IACS-NAS

Meeting of the North American Section of the
International Academy of Cardiovascular Sciences

September 19 - 21, 2024
HOUSTON, TEXAS

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Joseph G. Rogers, MD
The Texas Heart Institute

Ali J. Marian, MD
*The University of Texas
Health Science Center - Houston*

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UTHealth Houston

THE TEXAS HEART INSTITUTE®

11TH ANNUAL
IACS-NAS CONFERENCE
SEPTEMBER 19 - 21, 2024



AGENDA - Day 1: Thursday, September 19, 2024

James T. Willerson, MD Symposium

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|-----------------------|--|
| 2:00 pm | Registration - Day 1 |
| 4:00 – 4:15 pm | Welcome Comments <i>Ali J. Marian, MD, UTHealth; Joseph G. Rogers, MD, The Texas Heart Institute; and Jagat Narula, MD, PhD, UTHealth</i> |
| 4:15 – 4:25 pm | President's Address <i>Michael Czubryt, PhD, University of Manitoba</i> |
| 4:25 – 4:30 pm | Introduction of the Medal of Merit Award <i>Naranjan S. Dhalla, PhD, MD, DSc, University of Manitoba</i> |
| 4:30 – 5:00 pm | Medal of Merit Lecture Eats to Beat: The Essence of Cardiac Metabolism <i>Heinrich Taegtmeyer, MD, DPhil, FACC, FAHA, UTHealth</i> |
| 5:00 – 5:15 pm | A Tribute to James T. Willerson, MD <i>Slide Show</i> |
| | JAMES T. WILLERSON, MD SYMPOSIUM <i>Co-chairs: Drs. Naranjan S. Dhalla, Joseph G. Rogers, and Ali J. Marian</i> |
| 5:15 – 5:45 pm | Mesenchymal Precursor Cells: A New Approach to the Treatment of Heart Failure <i>Emerson Perin, MD, PhD, The Texas Heart Institute</i> |
| 5:45 – 6:15 pm | Hippo Signaling in Heart Regeneration <i>James F. Martin, MD, PhD, Baylor College of Medicine/The Texas Heart Institute</i> |
| 6:15 – 6:45 pm | Delivery of Therapeutic RNA to the Infarcted Heart <i>Robert J. Schwartz, PhD, University of Houston</i> |
| 6:45 – 9:00 pm | Reception and Dinner Buffet (Cooley Atrium) |

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AGENDA - Day 2: Friday, September 20, 2024

Session 1: Cooley Auditorium

ADVANCES IN CARDIOVASCULAR SCIENCE

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|-----------------|---|
| 7:00 am | Registration - Day 2 & Breakfast |
| 8:00 – 8:25 am | High Cardiac Fatty Acid Oxidation Rates Decrease Cardiac Efficiency in Heart Failure <i>Gary Lopaschuk, PhD, University of Alberta</i> |
| 8:25 – 8:50 am | Senescence Cardiomyopathy <i>Junichi Sadoshima, MD, PhD, Rutgers New Jersey Medical School</i> |
| 8:50 – 9:15 am | Cardiac cell Therapy: Cumulative Evidence and Emerging Approaches <i>Buddhadeb Dawn, MD, University of Nevada</i> |
| 9:15 – 9:40 am | Homocysteine and Related Compounds in Translational and Clinical Cardiovascular Research <i>Dragan M. Djuric, MD, MS, PhD, University of Belgrade</i> |
| 9:40 – 10:00 am | Coffee Break / Exhibitor Hall |

Session 2: THI Library

THE JCA SYMPOSIUM

| | |
|----------------|---|
| 8:00 – 8:25 am | Endothelial Senescence: Mechanisms, Consequences and Potential Therapeutics <i>Lisa Lesniewski, PhD, University of Utah</i> |
| 8:25 – 8:50 am | Epigenetic and Chromatin Regulation of Aging in Mammalian Stem Cells <i>Weiwei Dang, PhD, Baylor College of Medicine</i> |
| 8:50 – 9:15 am | Targeting the Circadian Clock in Disease and Aging <i>Zheng Chen, PhD, UTHealth</i> |
| 9:15 – 9:40 am | Treatment of Aging <i>Ronald DePinho, MD, The University of Texas MD Anderson Cancer Center</i> |
| 9:40– 10:00 am | Coffee Break / Exhibitor Hall |

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AGENDA - Day 2: Friday, September 20, 2024

Session 3: Cooley Auditorium

NOVEL THERAPIES FOR CARDIOVASCULAR DISEASES

- 10:00 - 10:25 am** **The Promise of RNA Therapeutics for Cardiovascular Diseases**
John P. Cooke, MD, PhD, Houston Methodist Hospital
- 10:25- 10:50 am** **Update on Development of Genetically Identified Targets for the Treatment of Lipids and Atherosclerosis**
Christie Ballantyne, MD, Baylor College of Medicine
- 10:50 - 11:15 am** **Gene Editing for Lipid and Vascular Diseases**
William Lagor, PhD, Baylor College of Medicine
- 11:15– 11:40 am** **Integrins as Therapeutic Targets in Cardiovascular Disease**
Darren Woodside, PhD, The Texas Heart Institute
- 11:40 – 1:00 pm** **Lunch & Exhibitor Hall**

Session 4: THI Library

CELL AND GENE THERAPY FOR HEART FAILURE

- 10:00 - 10:25 am** **Cell Therapy for Heart Failure**
Roberto Bolli, MD, DSc (Hon), University of Louisville
- 10:25- 10:50 am** **Drawing the Roadmap for Forced Cell Cycle Induction in Cardiomyocytes**
Tamer Mahmoud Abdelfattah Mohamed, PhD, MSc, Baylor College of Medicine
- 10:50 - 11:15 am** **Mechanisms of Action Underlying Therapeutic Effects of Cell-based Therapy**
Joshua M. Hare, MD, FACC, FAHA
- 11:15– 11:40 am** **The Role of Endoglin in Cardiac Regeneration**
Jop van Berlo, MD, PhD, University of Minnesota
- 11:40 – 1:00 pm** **Lunch & Exhibitor Hall**

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AGENDA - Day 2: Friday, September 20, 2024

Session 5: Cooley Auditorium

GENETICS AND GENOMICS

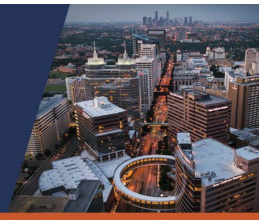
- 1:00 – 1:25 pm** **Mechanistic Insights of RNA Toxicity and Disrupted RNA Processing from Modeling Myotonic Dystrophy in Mice**
Thomas Cooper, MD, Baylor College of Medicine
- 1:25 – 1:50 pm** **The Role of the KDM5 Family of Histone Demethylases in the Heart**
Priyatansh Gurha, PhD, UTHealth
- 1:50 – 2:15 pm** **Short-chain Fatty Acids in the Gut-heart Axis: Writing the Histone Code**
Maha Abdeltalif, MD, PhD, Rutgers Health, New Jersey Medical School
- 2:15 – 2:40 pm** **RYR2 Mutations and CPVT**
Martin Morad, PhD, Medical University of South Carolina
- 2:40 – 3:00 pm** **Coffee Break / Exhibitor Hall**

Session 6: THI Library

WOMEN'S HEART HEALTH

- 1:00 – 1:25 pm** **The Rise in Non-Atherosclerotic Vascular Conditions: Time to Consider FMD & SCAD**
Stephanie Coulter, MD, The Texas Heart Institute
- 1:25 – 1:50 pm** **Adverse Effects of Shift Work on Cardiovascular Health During Pregnancy and Fetal Development**
Inna Rabinovich-Nikitin, PhD, University of Manitoba
- 1:50 – 2:15 pm** **Women's Heart Health: The Canary in the Coalmine of Women's Health**
Colleen Norris, PhD, MSc, BScN, RN, GNP, University of Alberta
- 2:15 – 2:40 pm** **The Role of Paracardial Adipose Tissue in Age-Associated Cardiac Diastolic Dysfunction**
Wanling Xuan, PhD, USFHealth
- 2:40 – 3:00 pm** **Coffee Break / Exhibitor Hall**

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AGENDA - Day 2: Friday, September 20, 2024

Session 7: Cooley Auditorium

METABOLIC REGULATION OF HEART FAILURE

- 3:00 – 3:25 pm** **Mitochondrial Quality Control in the Heart**
Åsa Gustafsson, PhD, University of California - San Diego
- 3:25 – 3:50 pm** **The ANT Family Contributes to mPTP-Dependent Necrosis I/R Injury**
Jason M. Karch, PhD, Baylor College of Medicine
- 3:50 – 4:15 pm** **Innate Signaling Pathways in Doxorubicin Cardiomyopathy**
Lorrie Kirshenbaum, PhD, OM, University of Manitoba
- 4:15 – 5:40 pm** **Circadian Control of Cardiac Physiology & Pathophysiology**
Martin E. Young, PhD, DPhil, UAB

Session 8: THI Library

WOMEN'S HEART HEALTH

CARDIAC ARRHYTHMIAS (ATRIAL FIBRILLATION)

- 3:00 – 3:25 pm** **Development and Regulation of Cardiac Dyads**
William Pu, MD, Boston Children's Hospital
- 3:25 – 3:50 pm** **Inflammatory Signaling and Atrial Arrhythmogenesis**
Na Li, PhD, Baylor College of Medicine
- 3:50 – 4:15 pm** **Role of Macrophages in Postoperative Atrial Fibrillation**
Xander Wehrens, MD, PhD, Baylor College of Medicine
- 4:15 – 5:40 pm** **To Beat or Not to Beat: A Hippo in the Sinoatrial Node**
Jun Wang, PhD, UTHealth

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AGENDA - Day 2: Friday, September 20, 2024

Poster Session: Location To Be Determined

5:45 – 7:00 pm

Poster Viewing/Competition for Awards

Cooley Building Foyer - Level 1

Morris Karmazyn Best Poster Award & Margaret Moffat Awards for Best Poster

(Winners will be announced on Saturday's Gala Night)

7:00 - 9:00 pm

Reception and Dinner Buffet

Ansary Atrium - Cooley Building

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AGENDA - Day 3: Saturday, September 21, 2024

Session 9: Cooley Auditorium

ADVANCES IN CARDIOVASCULAR SCIENCE

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|----------------|--|
| 7:30 am | Registration - Day 3 & Breakfast |
| 8:00 – 8:25 am | Vascular Aging and Redox Biology in Health and Disease <i>Rhian M. Touyz, MBBCh, MSc, PhD, McGill University</i> |
| 8:25 – 8:50 am | Cellular and Molecular Mechanisms of Cardiac Fibrosis <i>Nikolaos G. Frangogiannis, MD, Albert Einstein College of Medicine</i> |
| 8:50 – 9:15 am | Residual Cardiovascular Risk Post Weight Loss – Is There Room for Improvement? <i>Philipp E. Scherer, PhD, The University of Texas Southwestern Medical Center</i> |
| 9:15 – 9:40 am | Cardiac Stem Cell Therapy: Do The Benefits Outnumber Risks <i>Sanjiv Dhingra, PhD, University of Manitoba</i> |
| 9:40– 10:00 am | Coffee Break / Exhibitor Hall |

Session 10: THI Library

VASCULAR BIOLOGY

| | |
|-----------------|--|
| 8:00 – 8:25 am | Genetic and Molecular Triggers of Acute Aortic Dissections <i>Dianna M. Milewicz, MD, PhD, UTHealth</i> |
| 8:25 – 8:50 am | Aortic Disease Progression: Shifting from Compensatory Aneurysm to Decompensated Dissection <i>Ying H. Shen, MD, PhD, Baylor College of Medicine</i> |
| 8:50 – 9:15 am | Exercise Mimicking Therapeutic Targets for Peripheral Arterial Disease <i>Vihang A. Narkar, PhD, UTHealth</i> |
| 9:15 – 9:40 am | Novel Strategies to Reduce Plaque Burden & Enhance Plaque Stability in Carotid Artery <i>Devendra K. Agrawal, PhD, Western University of Health Sciences</i> |
| 9:40 – 10:00 am | Coffee Break / Exhibitor Hall |

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AGENDA - Day 3: Saturday, September 21, 2024

Session 11: Cooley Auditorium

MYOCARDIAL FIBROSIS

- 10:00 – 10:25 am** **Insights into the Role of Fibroblasts in Cardiac Remodeling After Myocardial Infarction**
Bradford Hill, PhD, University of Louisville
- 10:25 – 10:50 am** **Targeting Scleraxis to Attenuate Cardiac Fibrosis and Heart Failure**
Michael Czubyrt, PhD, University of Manitoba
- 10:50 – 11:15 am** **Development of Perivascular Fibrosis After Myocardial Injury**
Reza Ardehali, MD, PhD, Baylor College of Medicine
- 11:15 – 11:40 am** **Cell-specific roles for RAGE in myocardial ischemia-reperfusion injury**
Ravichandran Ramasamy, Ph.D. NYU Langone
- 11:40– 1:00 pm** **Lunch / Exhibitor Hall**

Session 12: THI Library

NEW APPROACHES AND THERAPEUTIC TARGETS IN HEART FAILURE

- 10:00 – 10:25 am** **Circadian Regulation of Cardiac Remodeling**
Lilei Zhang, MD, PhD, Baylor College of Medicine
- 10:25 – 10:50 am** **Interoceptive Inhibition of ADAMTS1 by Exercise-exosome for Attenuation HFrEF**
Suresh C. Tyagi, PhD, University of Louisville
- 10:50 – 11:15 am** **Reframing Cardiovascular Bioengineering: Innovative Solutions for End-Stage Heart Failure**
Camila Hochman-Mendez, PhD, The Texas Heart Institute
- 11:15 – 11:40 am** **Cardioprotective Signaling in Cancer Chemotherapy**
Rakesh C. Kukreja, Ph.D, Virginia Commonwealth University
- 11:40 – 1:00 pm** **Lunch / Exhibitor Hall**

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Session 13: Cooley Auditorium

ADVANCES IN THE DIAGNOSIS AND TREATMENT OF HEART FAILURE

- 1:00 – 1:25 pm** **Cardiac Imaging in the Evaluation of HFpEF Patients**
Sherif Nagueh, MD, Houston Methodist Hospital
- 1:25 – 1:50 pm** **GLP-1agonists and Heart Failure: is it all about the weight loss?**
Anita Deswal, MD, MPH, MBBS, The University of Texas MD Anderson Cancer Center
- 1:50 – 2:15 pm** **The Remarkable Story of SGLT2 Inhibitors for Heart Failure**
Mark Drazner, MD, The University of Texas Southwestern Medical Center
- 2:15 – 2:40 pm** **Myocardial Remission: The Audacity of Hope**
Douglas L. Mann, MD, Washington University School of Medicine in St. Louis
- 2:40 – 3:00 pm** **Lunch / Exhibitor Hall**

Session 14: THI Library

INTERVENTIONS IN CARDIOVASCULAR MEDICINE

- 1:00 – 1:25 pm** **Lecture 1: To Be Determined**
Neal S. Kleiman, MD, Houston Methodist Hospital
- 1:25 – 1:50 pm** **Lecture 2: To Be Determined**
Mehdi Razavi, MD, Baylor College of Medicine and The Texas Heart Institute
- 1:50 – 2:15 pm** **Development updates for a pediatric left ventricular assist device with miniature maglev system**
Yaxin Wang, PhD, The Texas Heart Institute
- 2:15 – 2:40 pm** **Impact of Cardiogenic Shock on Plasma Lipidome**
Amir Ravandi MD, PhD, University of Manitoba
- 2:40 – 3:00 pm** **Coffee Break / Exhibitor Hall**

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AGENDA - Day 3: Saturday, September 21, 2024

Session 15: Cooley Auditorium

ROBERTO BOLLI, MD YOUNG INVESTIGATOR AWARD

*Judges: Gary Lopaschuk, PhD, University of Alberta and
Sai Sudha Koka, PhD, RPh, Texas A&M University School of Pharmacy
Srinivas Tipparaju, PhD, University of Southern Florida
Leila Rouhi, MD, PhD, UTHealth*

- 3:00 – 3:15 pm** **Role of Histone Lysine Demethylase KDM5A in LMNA-Associated Dilated Cardiomyopathy**
Manisha Deogharia, PhD, UTHealth
- 3:15 – 3:30 pm** **Generation of Chamber-Specific Cardiomyocytes: A Safe and Effective Strategy to Address Arrhythmia in Cell-Based Therapy**
Arash Pezhouman, MD, Baylor College of Medicine
- 3:30 – 3:45 pm** **Targeting RAGE to Modulate ECM Remodeling in Atherosclerosis**
Vinitha Deepu, PhD, Western University
- 3:45 – 4:00 pm** **Targeting Glutamine Metabolism in the Pathogenesis of HF**
Andrew A. Gibb, PhD, University of Louisville
- 4:00 – 4:15 pm** **Coffee Break / Exhibitor Hall**

Session 16: THI Library

GARY LOPASCHUK GRADUATE STUDENT AWARD

*Judges: Ravichandran Ramasamy, PhD, New York University;
Gary Lopaschuk, PhD, University of Alberta;
Benjamin Cathcart, PhD, UTHealth; and
Grant Pierce, PhD, University of Manitoba*

- 3:00 – 3:15 pm** **Lecture 1: To Be Determined**
Speaker: Graduate student to be chosen from the abstracts submitted
- 3:15 – 3:30 pm** **Lecture 2: To Be Determined**
Speaker: Graduate student to be chosen from the abstracts submitted
- 3:30 – 3:45 pm** **Lecture 3: To Be Determined**
Speaker: Graduate student to be chosen from the abstracts submitted
- 3:45 – 4:00 pm** **Lecture 4: To Be Determined**
Speaker: Graduate student to be chosen from the abstracts submitted
- 4:00 – 4:15 pm** **Coffee Break / Exhibitor Hall**

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AGENDA - Day 3: Saturday, September 21, 2024

Session 17: Cooley Auditorium

BUDDHADEB DAWN, MD EARLY CAREER AWARDS

*Judges: Michael Czubryt, PhD, BSc (Hons), University of Manitoba;
Suresh C. Tyagi, PhD, University of Louisville; and
Buddhadeb Dawn, MD, University of Nevada
Weiyue Wang, PhD, UTHealth*

- 4:15 – 4:35 pm** **DAMPs as Novel Molecular Targets to Attenuate Plaque Vulnerability**
Vikrant Rai, MBBS, MS, PhD, Western University of Health Sciences
- 4:35 – 4:55 pm** **The Secret Messages Between the Heart and Skeletal Muscle During Heart Failure**
Samarjit Das, PhD, Johns Hopkins Medicine
- 4:55 – 5:15 pm** **The Mitochondrial LonP1 is Indispensable for Cardiac Maturation and Function**
Venkatesh Sundararajan, MPharm, PhD, West Virginia University
- 5:15 – 5:35 pm** **The Role of Cardiac Fibroblasts in the Pathogenesis of LMNA Dilated Cardiomyopathies**
Leila Rouhi, MD, PhD, UTHealth
- 6:00 pm** **Adjourn/Closing Ceremony**
- 6:30pm** **Gala Awards/Dinner**
Westin Hotel Medical Center

Session 18: THI Library

REGULATION OF CARDIAC METABOLISM

- 4:15 – 4:35 pm** **Urolithin A, a Gut Microbiota Metabolite, Attenuates Isoprenaline-induced Acute Myocardial Injury in Rats**
Ranko Skrbic, MD, PhD, MSc, University of Banja Luka, Bosnia & Herzegovina
- 4:35 – 4:55 pm** **Nampt activation for protecting the Diabetic Heart**
Srinivas Tipparaju, PhD, USFHealth
- 4:55 – 5:15 pm** **The Role of Combined Administration of AT1 Receptor Antagonist & Nephylisin Inhibitor in the Promotion of Browning in an Experimental Model of Metabolic Syndrome**
Vladimir Jakovljevic, MD, PhD, University of Kragujevac, Serbia
- 5:15 – 5:35 pm** **The crossroads of transcriptional regulation and metabolism**
Kedryn Baskin, Ph.D. The Ohio State University
- 6:00 pm** **Adjourn/Closing Ceremony**
- 6:30pm** **Gala Awards/Dinner**
Westin Hotel Medical Center