



American Heart Association®

# Basic Cardiovascular Sciences

2020 Scientific Sessions

Emerging Concepts in Cardiovascular Diseases

July 27-30, 2020

Virtual Event

Preliminary Program Agenda  
(All times in Central Daylight Time)

## MONDAY, July 27

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12:30 – 1:00 pm (CDT)

BCVS 2020 Scientific Sessions: Opening Welcome

12:30 Opening Remarks from the President of the American Heart Association  
Mitch Elkind, MD, AHA President, New York, New York

12:45 Welcome Remarks from the BCVS Council Chair  
Elizabeth McNally, MD, PHD, BCVS Council Chair, Chicago, Illinois

1:00–2:00 pm

Concurrent Session 1A

Beyond the Heart: Systemic Effects of Pathogenic Cardiac Remodeling

Moderator: Gregory Aubert, MD, Chicago, Illinois

1:00 TBD  
Deepak Srivastava, MD, San Francisco, California

1:15 TBD  
Hind Lal, PhD, Birmingham, Alabama

1:30 TBD  
Long-sheng Song, MD, Iowa City, Iowa

1:45 Q&A

1:00 – 2:00 pm

Concurrent Session 1B

Cutting-edge Approaches to Targeting Complex Cardiomyopathies

Moderator: Jil Tardiff, MD, PhD, Tucson, Arizona

1:00 Drugs and HCM mutations modulating myosin-binding protein C binding to actin identified by a high-throughput fluorescence lifetime-based assay

Brett Colson, PhD, Tucson, Arizona

1:15 TBD  
Sharlene Day, MD, Ann Arbor, Michigan

1:30 Visualizing metabolic flux remodeling in diseased hearts using stable isotope kinetics  
Andrew Carley, PhD, Columbus, Ohio

1:45 Q&A

2:00 – 3:00 pm

Moderated Poster Session 1A: Sarcomeric Function & Contractility

Poster Discussant: Danish Sayed, PhD, Newark, New Jersey

MP 100

Scalable Functional Classification Of Heart Failure-associated Genetic Variants In Cardiac Troponin T

Anthony M PETTINATO, Fera A Ladha, Univ of Connecticut, Farmington, CT; David Mellert, Nicholas Legere, Rachel Cohn, The Jackson Lab, Farmington, CT; Robert Romano, Univ of Connecticut, Farmington, CT; Ketan Thakar, Yu-Sheng Chen, The Jackson Lab, Farmington, CT; John Travis Hinson, Univ of Connecticut, Farmington, CT

MP 101

Functional Maintenance Of The Sarcomere Requires Bag3-dependent Autophagy

Thomas G Martin, Loyola Univ Chicago, Oak Park, IL; Arthur M Feldman, Temple Univ Sch of Medicine, Philadelphia, PA; Monte S Willis, Indiana Univ Sch of Medici, Indianapolis, IN; Jonathan A Kirk, Loyola Univ Chicago, Maywood, IL

MP 102

Skeletal Muscle Alpha Actin Acetylation Enhances Myosin Binding And Increases Calcium Sensitivity In Vitro

Samantha S Romanick, Allison Matsumura, Travis Stewart, Kianna Boc, Univ of Nevada Reno, Reno, NV; Jonathan Baker, Bradley S Ferguson, UNIVIVERSITY OF NEVADA RENO, Reno, NV

MP 103

Methylglyoxal Modifications On Myofilament Proteins Caused By Diabetes Block Heart Failure Drug Targets Through Changing Tropomyosin Position

Maria Papadaki, Theerachat Kampaengsri, LOYOLA UNIVERSITY CHICAGO, Maywood, IL; Samantha Barrick, Washington Univ, St Louis, MO; Stuart Campbell, Yale Univ, New Haven, CT; Michael Greenberg, Washington Univ, St Louis, MO; Jonathan A Kirk, Loyola Univ Chicago, Maywood, IL

MP 104

Phosphodiesterase 1 Modulates Sarcolemmal CAMP To Increase The L-type Calcium Channel Activity And Induce Cardiomyocyte Contraction

Grace K Muller, Johns Hopkins Sch of Med, Baltimore, MD; Joy Song, Johns Hopkins Univ, Baltimore, MD; Vivek Jani, Johns Hopkins Univ - MSTP, Baltimore, MD; Yuejin Wu, Johns Hopkins Univ - MSTP, Baltimore, MD, Baltimore, MD; Manuela Zaccolo, Univ of Oxford, Oxford; David Alan Kass, JOHNS HOPKINS MEDICAL INST, Baltimore, MD

MP 105

Python Post-prandial Cardiac Adaptation Is Supported By Enhanced Metabolism, Reduced Sarcomere Passive Tension, And Epigenetic Remodeling

Claudia Crocini, Univ of Colorado Boulder, Boulder, CO; Kc Woulfe, UNIVERSITY OF COLORADO, Aurora, CO; Cierra J Walker, Christopher D Ozeroff, Univ of Colorado Boulder, Boulder, CO; leslie A leinwand, Univ of Colorado, Boulder, CO

2:00 – 3:00 pm

Moderated Poster Session 1B: Ion Channels and Arrhythmias

Poster Discussant: Ravi Shah, MD, Boston, Massachusetts

MP110

Inhibition Of The Unfolded Protein Response Reduces Arrhythmic Risk After Myocardial Infarction

Man Liu, Univ of Minnesota, Minneapolis, MN; Hong Liu, UNIVERSITY OF MINNESOTA, Minneapolis, MN; Preethy Parthiban, Univ of Minnesota, Minneapolis, MN; Guangbin Shi, Rhode Island Hosp, Providence, RI; Gyeong-Jin Kang, Feng Feng, Univ of Minnesota, Minneapolis, MN; Anyu Zhou, Rhode Island Hosp, Providence, RI; Lianzhi Gu, Univ of Minnesota, Minneapolis, MN; Alena Talkachova, Univ of Minnesota, Minneapolis, MN, Minneapolis, MN; Samuel C Dudley Jr., Univ of Minnesota, Minneapolis, MN

MP111

Loss Of Myosin Binding Protein H-like Causes Cardiac Conduction Abnormalities

David Y Barefield, Ibrahim Tahtah, Jordan Sell, Northwestern Univ, Chicago, IL; Michael Broman, Brigitte Laforest, Univ of Chicago, Chicago, IL; Sean Yamakawa, Megan Puckelwartz, Northwestern Univ, Chicago, IL; Andrew Wasserstrom, Northwestern Univ, Chicago, IL; Elizabeth M McNally, NORTHWESTERN UNIVERSITY, Chicago, IL

MP 112

Optogenetic Manipulation Of Macrophage Electrical Excitability Modulates Cardiac Rhythm In Developing Zebrafish

Shannon E Martin, Jessica Plavicki, Brown Univ, Providence, RI

MP 113

Protein Hyperacetylation Mediates Bradyarrhythmia In Mice With Mitochondrial Disease

Dao-Fu Dai, Univ of Iowa, Iowa City, IA; Yi Chu, Jin-Young Yoon, UNIVERSITY IOWA, Iowa City, IA

MP 114

Cardiotropic Adenovirus Increases Arrhythmia Susceptibility During Acute Infection  
Rachel L Padget, D. Ryan King, Virginia Tech, Blacksburg, VA; Michael D North, Mira N Tanenbaum, Virginia Tech Carilion Sch of Med, Roanoke, VA; Patrick J Calhoun, Virginia Tech, Blacksburg, VA; Gregory S Hoeker, Fralin Biomedical Res Inst at VTC, Roanoke, VA; Steven Poelzing, James W Smyth, Virginia Tech, Blacksburg, VA

MP 115

Transcriptional Patterning Of The Ventricular Cardiac Conduction System  
Ozanna Burnicka-Turek, Michael Broman, Jeffrey D Steimle, UNIVERSITY OF CHICAGO, Chicago, IL; Bastiaan Boukens, Biomedical Engineering, St Louis, MO; Nataliya B Petrenko, Univ of Pennsylvania, Philadelphia, PA; Kohta Ikegami, Xinan H Yang, UNIVERSITY OF CHICAGO, Chicago, IL; Marcelo A Nobrega, Chicago, IL; Michael J Rust, UNIVERSITY OF CHICAGO, Chicago, IL; Vickas V Patel, GlaxoSmithKline, Collegeville, PA; Igor Efimov, GlaxoSmithKline, Collegeville, PA, Washington, DC; Ivan P Moskowitz, UNIVERSITY OF CHICAGO, Chicago, IL

3:00 – 4:00 pm

Concurrent Session 2A

Cardiovascular Risk Factors-Nicotine Use, Diet and Physical Activities as Modulators  
Moderator: Loren Wold, PhD, Columbus Ohio

- 3:00            TBD  
                  Aruni Bhatnagar, PhD, Louisville, Kentucky
- 3:15            Cardiovascular Health Impact of Electronic Cigarettes  
                  Naomi Hamburg, MD, Boston, Massachusetts
- 3:30            Differential effects of chronically inhaled nicotine on the right and left heart  
                  Jason Gardner, PhD, New Orleans, Louisiana
- 3:45            Q&A

3:00– 4:00 pm

Concurrent Session 2B

Covid-19 and Cardiovascular Disease  
Moderator: Mina Chung, MD, Cleveland, Ohio

- 3:00            Panelists  
                  Eduardo Marban, MD, Los Angeles, California  
                  Sanjum Sethi, MD, New York, New York  
                  Michael T. Lu, MD, Boston, Massachusetts
- 3:45            Q&A

4:00 – 5:00 PM

ACS Japanese: Inflammation and Cardiac Remodeling in Heart Failure

Moderator: Junichi Sadoshima, MD, Newark, New Jersey

4:00 CaMK-NRSF-GNAO1 transcriptional circuits participates in the pathological cardiac remodeling  
Hideaki Inazumi, MD, Kyoto, Japan

4:15 Mechanosensation by Cardiac Macrophages Orchestrates Cardiac Homeostasis  
Jun Matsuda, MD, PhD, Tokyo, Japan

4:30 Elimination of cells expressing Senescence associated glycoprotein (SAGP) attenuates atherosclerotic diseases  
Masayoshi Suda, PhD, Nigata, Japan

4:45 Q&A

4:00 – 5:00 pm

ACS Korean: Cellular and Molecular Mechanisms of Heart Failure

Moderator: Young-sup Yoon, MD, Atlanta, Georgia

4:00 Adhesion GPCR, Latrophilin-2, induces cardiac differentiation through CDK5, contributing to repair after myocardial infarction  
Hyun-jai Cho, MD, Seoul, Korea

4:15 Nanovesicles derived from iron oxide nanoparticles–incorporated mesenchymal stem cells for cardiac repair  
Hun-jun Park, MD, Seoul, Korea

4:30 TBD  
Chulan Kwon, PhD, Baltimore, Maryland

4:45 Q&A

## TUESDAY, July 28

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10:00 – 11:00 AM (CDT)

### Concurrent Session 3A

Molecular Predictors & Markers of Heart Failure Progression

Moderator: Kristine DeLeon-Pennell, PhD, Charleston, South Carolina

10:00      Single-cell analysis to dissect heart failure biology  
Seitaro Nomura, MD, Tokyo, Japan

10:15      Top-down proteomics for understanding and diagnosis of heart diseases  
Ying Ge, MD, Madison, Wisconsin

10:30      Pathology-dependent protein-protein interactions as new therapeutic  
Targets of Heart Failure  
Motohiro Nishida, PhD, Fukuoka, Japan

10:45      Q&A

10:00 – 11:00 am

### Concurrent Session 3B

Cardiac Effects of Oxidation and Inflammation

Moderator: Ameen Ismahil, PhD, Birmingham, Alabama

10:00      TBD  
Pilar Alcaide, MS, Boston, Massachusetts

10:15      Extracellular vesicles from ischemic cardiomyocytes signal bone marrow  
cells  
Gangjian Qin, MD, Birmingham, Alabama

10:30      TBD  
Dian Cao, MD, Dallas, TX

10:45      Q&A

11:00 am – Noon

### Concurrent Session 4A

Apoptosis, Necrosis and Autophagy in Heart Disease

Moderator: Asa Gustafsson, PhD, La Jolla, California

11:00      CaMKII-dependent ryanodine receptor phosphorylation mediates sepsis-  
induced cardiomyocyte apoptosis and contractile dysfunction  
Martin Petroff, PhD, La Plata, Argentina

11:15 The role of mitochondrial calcium in activating the permeability transition pore  
Elizabeth Murphy, PhD, Bethesda, Maryland

11:30 TBD  
Chrisan Ramachandra, PhD, Singapore

11:45 Q&A

11:00 am – Noon

Concurrent Session 4B

Novel Pathogenic Pathways in Cardiac Remodeling: Early vs. Late

Moderator: John Calvert, PhD, Suwanee, Georgia

11:00 Molecular mechanisms of myocardial reverse remodeling after myocarditis  
Yasushi Fujio, MD, Suita, Japan

11:15 TBD  
Ronglih Liao, PhD, Palo Alto, California

11:30 Tsg101 facilitates p62-dependent Keap1 sequestration in cardiomyocytes to protect hearts against oxidative damage  
Guo-chang Fan, PhD, Cincinnati, Ohio

11:45 Q&A

Noon – 1:00 PM

General Session 5: Keynote Lecture

Moderator: Ivor Benjamin, MD, Milwaukee, Wisconsin

Noon All is in Flux: Cardiac Metabolism in Transition  
Heinrich Taegtmeyer, MD, Houston, Texas

12:45 Q&A

1:00 – 1:30 pm

Break

1:30 – 2:30 PM

Early Career Session

Amplify the Signal, Not the Noise

Moderator: Priscila Sato, PhD, Philadelphia, Pennsylvania

1:30 Panelists  
Gary Keller, Chicago, Illinois

Michael Kennedy, PhD, Chicago, Illinois

2:15 Q&A

1:30 – 2:30 PM

ACS SAHA: Research Advances to Treat Heart Failure

Moderator: Sathyamangla Naga Prasad, PhD, Cleveland, Ohio

1:30 Caveolin in cardiovascular disease  
Hemal Patel, PhD, San Diego, California

1:45 Breaking Down Cell-Cell Connections To Unravel New Mechanisms In Heart Disease  
Farah Sheikh, PhD, La Jolla, California

2:00 TBD  
Saumya Das, MD, PhD, Boston, Massachusetts

2:15 Q&A

2:30-3:30 PM

Moderated Poster Session 2A: Myocardial Ischemia, Oxidative Stress, and Cardioprotection

Poster Discussant: Jean Bopassa, PhD, UTHealth, San Antonio, Texas

MP120

Ryanodine Receptor 2 Prevents Endoplasmic Reticulum Stress-induced Defects In Cardiomyocyte Maturation

Yuxuan Guo, Blake Jardin, Boston Children's Hosp, Boston, MA; Silvia Guatimosim, UNIVERSIDADE FEDERAL DE MINAS GERAIS, Belo Horizonte, Brazil; William T Pu, Boston Children's Hosp, Boston, MA

MP121

Deleting The 2-oxoglutarate- And Iron-dependent Prolyl Hydroxylase Ogfod1 Alters Purine Nucleotide Regulation And Is Cardioprotective

LESLIE KENNEDY, NIH: NHLBI, Bethesda, MD; Junhui Sun, NHLBI, NIH, Bethesda, MD; Michael Harris, NHLBI, Bethesda, MD; Matthew Cockman, Francis Crick Inst, London, United Kingdom; Peter Ratcliffe, Francis Crick Inst, Univ of Oxford, London, Oxford, United Kingdom; Elizabeth Murphy, NHLBI, Bethesda, MD

MP122

Effects Of Cardiac Beta3-Adrenoceptors On The Inhibition Of G Protein-coupled Receptor Kinase 2 Via S-nitrosylation

Gizem Kayki Mutlu, Ankara Univ Faculty of Pharmacy, Ankara, Turkey; Kimberly Ferrero, Rajika Roy, Anna Maria Lucchese, Erhe Gao, Walter J Koch, Temple Univ Lewis Katz Sch of Med, Philadelphia, PA



MP123

The Fate And Role Of Pericytes In Repair And Remodeling Of The Infarcted Heart  
Linda Alex, Ya Su, Albert Einstein Coll of Med, NYC, NY; Nikolaos G Frangogiannis,  
ALBERT EINSTEIN COLLEGE OF MEDICINE, Bronx, NY

MP124

De-palmitoylation Of Cysteine 202 Of Cyclophilin-D By Calcium Is Important For The  
Activation Of The Permeability Transition Pore  
Georgios Amanakis, Natl Insts of Health, Bethesda, MD; Junhui Sun, NHLBI, NIH,  
Bethesda, MD; Maria Fergusson, NIH, Bethesda, MD; Chengyu Liu, Natl Insts of Health,  
Bethesda, MD; Jeff D Molkentin, CHILDRENS HOSPITAL MED CTR, Cincinnati, OH;  
Elizabeth Murphy, NHLBI, Bethesda, MD

MP125

Branched-chain Keto Acids, Not Branched-chain Amino Acids, Impairs Cardiac Insulin  
Sensitivity By Disrupting Insulin Signaling In The Mitochondria  
Qutuba Karwi, Golam Mezbah Uddin, Univ of Alberta, Edmonton, AB, Canada; Cory  
Shamus Wagg, Univ of Alberta, Edmonton Ab, AB, Canada; Gary D Lopaschuk,  
UNIVERSITY ALBERTA, Edmonton, AB, Canada

2:30-3:30 PM

Moderated Poster Session 2B: Signal Transduction Pathways  
Poster Discussant: Joan Heller Brown, PhD, La Jolla, California

MP130

Molecular Signaling In Inherited Cardiomyopathy Analyzed With A Human Model Of  
Cas9-edited iPSC-derived Cardiac Cells  
Yuanyuan Dai, Amenov Asset, Nadezda Ignatyeva, Hang Xu, Univ Goettingen,  
Goettingen, Germany; Wolfgang A Linke, UNIVERSITY OF MUENSTER, Muenster;  
Manuela Zaccolo, Univ of Oxford, Oxford; Gerd P Hasenfuss, UNIVERSITATSMEDIZIN  
GOTTINGEN, Goettingen; Wolfram H Zimmermann, UNIVERSITY MED CTR  
GOETTINGEN, Goettingen; Antje Ebert, Univ Goettingen, Goettingen, Germany

MP131

The CDK2-FOXO1 Axis Mediates Doxorubicin-induced Cardiomyocyte Apoptosis And  
Atrophy  
Peng Xia, Jingrui Chen, Yuening Liu, Washington State Univ, Spokane, WA; Maya  
Fletcher, Gonzaga Univ, Spokane, WA; Brian C. Jensen, Univ of North Carolina, Chapel  
Hill, NC; Zhaokang Cheng, Washington State Univ, Spokane, WA

MP132

Mutation In Fbxo32 Causes Dilated Cardiomyopathy By Er-stress Mediated  
Upregulation Of Chop  
Nadya Al-Yacoub, Dilek Colak, Salma M Awad, Mohammed Kunhi, Olfat Al-Harazi,  
Abdallah Assiri, Jehad Al-Buraiki, King Faisal Specialist Hosp & Res Ctr, Riyadh, Saudi

Arabia; Waleed Al-Habib, King Saud Univ, Riyadh, Saudi Arabia; Coralie I Poizat, Masonic Medical Res Inst, Utica, NY

MP133

Development Of  $\beta$ -arrestin-biased Positive Allosteric Modulators For The  $\beta_1$  Adrenergic Receptor

Jialu Wang, Ilhan Gokhan, Xinyu Xiong, Alem W Kahsai, Haoran Jiang, Conrad T Pfeiffer, William Tian, Biswaranjan Pani, Seungkirl Ahn, Robert J Lefkowitz, Howard A Rockman, Duke Univ Medical Ctr, Durham, NC

MP134

The Atf6-inducible Selenoprotein, VimP, Regulates Proteostasis And Pressure Overload-induced Heart Failure

Erik Blackwood, Donna Thuerauf, Lauren MacDonnell, SAN DIEGO STATE UNIVERSITY, San Diego, CA; Alina Susana Bilal, San Diego State Univ, San Diego, CA; Chris C Glembotski, SAN DIEGO STATE UNIVERSITY, San Diego, CA

MP135

Cardiac Sarcoplasmic Reticulum Calcium Cycling Is Regulated By Kinase Independent Function Of Pi3kgamma

Maradumane L Mohan, Conner P Witherow, Robert S Papay, Sathyamangla V Naga Prasad, CLEVELAND CLINIC FOUNDATION, Cleveland, OH

3:30 – 4:30 PM

Concurrent Session 6A

Harnessing Precision Medicine to Treat Cardiovascular Disease

Moderator: Renzhi Han, PhD, Columbus, Ohio

3:30 TBD

Lior Zangi, PhD, New York, New York

3:45 TBD

Barbara Casadei, MD, Oxford, England

4:00 TBD

Jennifer Davis, PhD, Seattle, Washington

4:15 Q&A

3:30 – 4:30 PM

Concurrent Session 6B

Novel Animal Models and Translational Insights

Moderator: Maria Kontaridis, PhD, Utica, New York

3:30 Defining immune mechanisms of HFpEF using a mouse model

Meena Madhur, MD, Nashville, Tennessee

- 3:45 Disparate roles for phagocytes in HFrEF vs HFpEF  
Edward Thorp, PhD, Chicago, Illinois
- 4:00 Translational aspects of cardiovascular risk factors for novel therapies  
Rabea Hinkel, DVM, Munich, Germany
- 4:15 Q&A

## WEDNESDAY, July 29

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10:00 – 11:00 AM (CDT)

Concurrent Session 7A

HfpEF in Metabolic Diseases

Moderator: Jonathan Kirk, Maywood, Illinois

10:00        Role of iron in cardiovascular disease  
                 Hossein Ardehali, MD, Chicago, Illinois

10:15        TBD  
                 Yajing Wang, MD, PhD, Philadelphia, Pennsylvania

10:30        Role of sarcolipin in dystrophic cardiomyopathy  
                 Gopal Babu, PhD, Newark, New Jersey

10:45        Q&A

10:00 – 11:00 AM

Concurrent Session 7B

Cardiotoxicity of Cancer Therapeutics: Mechanisms and Potential Therapies

Moderator: Richard Becker, MD, Cincinnati, Ohio

10:00        Mechanistic Biologic and Imaging Markers of Cancer Therapy  
                 Cardiotoxicity  
                 Bonnie Ky, MD, Philadelphia, Pennsylvania

10:15        Can cardiomyocyte proliferation impact anthracycline cardiotoxicity?  
                 Loren Field, PhD, Indianapolis, Indiana

10:30        Clinical Spectrum of Cardio-Oncology – Mechanism Matters  
                 Carrie Lenneman, MD, Birmingham, Alabama

10:45        Q&A

11:00 AM – Noon

General Session 8

Molecular Mechanisms of Cardiac Hypertrophy (BCVS-HFA Joint Session)

Moderator: Rebekah Gundry, PhD, Omaha, Nebraska

11:00        TBD  
                 John Ralphe, MD, Madison, Wisconsin

11:15        Developmental mechanisms of cardiac hypertrophic growth  
                 Katherine Yutzey, PhD, Cincinnati, Ohio

- 11:30            Atrial cardiomyopathy in patients with heart failure  
Niels Voigt, MD, Gottingen, Germany
- 11:45            Q&A
- 11:00 AM – Noon  
Workshop 1  
Nailing Your Statistics: Rigorous Analysis for Grants & Papers  
(*hosted by Circulation Research*)  
Moderator: Jane Freedman, MD, Worcester, Massachusetts
- 11:00            Panelists  
Jennifer Below, PhD, Nashville, Tennessee  
Glenn Dillon, PhD, Dallas, Texas
- 11:45            Q&A
- Noon – 12:30 PM  
Break
- 12:30 – 1:30 PM  
General Session 9A  
Outstanding Early Career Investigator Award Competition  
Moderator: Hesham Sadek, MD, PhD, Dallas, Texas
- 12:30            Novel Inhibitors For Temporal Modulation Of T-lymphocytes During  
Chronic Heart Failure  
Shyam S Bansal, The Ohio State Univ, Columbus, OH; Rachel Rosenzweig,  
Ohio State Univ, Columbus, OH; SARITA NEHRA, Ohio State Univ,  
Columbus, OH, COLUMBUS, OH; Oscar Bermeo Blanco, The Ohio State  
Univ, Columbus, OH; Matthew Stratton, Ohio State Univ, Columbus, OH;  
Richard J Gumina, Chad Bennett, Christopher Coss, The Ohio State Univ,  
Columbus, OH
- 12:45            Sympathetic Innervation Negatively Regulates Postnatal Cardiomyocyte  
Proliferation Through Circadian Genes  
Emmanouil Tampakakis, Sean Murphy, Harshi Gangrade, JOHN HOPKINS  
UNIVERSITY HOSP, Baltimore, MD; William Kowalski, Yosuke Mukoyama,  
NIH, Bethesda, MD; Chulan Kwon, John Hopkins Univ, Baltimore, MD
- 1:00            TBX20 Activates Cardiac Maturation Gene Programs Promoting Direct  
Human Cardiac Reprogramming  
Yang Zhou, Yawen Tang, Univ of Alabama at Birmingham, Birmingham, AL;  
Vladimir G. Fast, UNIVERSITY ALABAMA BIRMINGHAM, Birmingham, AL;

Lianzhong Zhao, Rui Lu, Univ of Alabama at Birmingham, Birmingham, AL;  
Jianyi Zhang, UNIVERSITY OF ALABAMA AT BIRMINGHAM, Birmingham, AL

1:15 Q&A

12:30 – 1:30 PM

General Session 9B

Metabolism and Redox Mechanisms in Heart Failure

Moderator: Mahesh Gupta, PHD, Chicago, Illinois

12:30 TBD

Rajasekaran Namakkal-Soorappan, PhD, Birmingham, Alabama

12:45 Myoglobin regulates cardiomyocyte differentiation

Sruti Shiva, PhD, Pittsburgh, Pennsylvania

1:00 The gut microbiota modulates cardiac repair and metabolism after  
infarction

Patrick Hsieh, MD, PhD, Taipei City, Taiwan

1:15 Q&A

1:30 – 2:30 PM

General Session 10

Women in Science: Go for It

Moderator: Rong Tian, MD, Seattle, Washington

1:30 Lee Ann Piano, Leadership and Empowerment Speaker, Chicago, Illinois

2:15 Q&A

1:30 – 2:30 PM

ACS ACRE

Critical Signaling Pathways in Heart Failure

Moderator: Faqian Li, MD, Minneapolis, Minnesota

1:30 Molecular signatures from hearts of deceased COVID19 patients

Jeff Molkentin, PhD, Cincinnati, Ohio

1:45 Developmental signaling pathways in cardiac repair and regeneration

Sean Wu, PhD, Stanford, California

2:00 Exploring informatics approaches to better understand pathogenic  
pathways underlying COVID-19

Peipei Ping, PhD, Los Angeles, California

2:15 Q&A

2:30 – 3:30 PM

Moderated Poster Session 3A: Systems Approach to Cardiovascular Biology

Poster Discussant: Young-sup Yoon, MD, Atlanta, Georgia

MP140

Epigenetic Silencing Of SERCA2a By Long Noncoding RNA Lnc-SYNPO Contributes To Impaired Ca<sup>2+</sup> Homeostasis And Contractility In The Failing Heart

Min-Yi You, Natl Taiwan Univeristy, Taipei, Taiwan; PEI-JIN HO, Natl Taiwan Univ, Taipei, Taiwan; Hui-Chun Ku, Fu Jen Catholic Univ, New Taipei city, Taiwan; Shu-Ping Wang, Academia Sinica, Taipei, Taiwan; Kai-chien YANG, Natl Taiwan Univ, Taipei, Taiwan

MP141

Role Of Cryptochrome In Angiogenesis

Kazuhito Tsuzuki, Nagoya Univ Graduate Sch of Med, Nagoya Aichi, Japan; Yuuki Shimizu, Nagoya Univ, Nagoya, Japan; Zhongyue Pu, Nagoya university, Nagoya, Japan; Jyunya Suzuki, Nagoya Univ Graduate Sch of Med, Nagoya Aichi, Japan; Toyooki Murohara, Cardiology, NAGOYA UNIVERSITY, Nagoya, Japan

MP142

Genome-wide Studies Reveal The Essential And Opposite Roles Of Arid1a In Controlling Human Cardiogenesis And Neurogenesis From Pluripotent Stem Cells

Juli Liu, Sheng Liu, Hongyu Gao, Lei Han, Xiaona Chu, INDIANA UNIVERSITY, Indianapolis, IN; Yi Sheng, UNIVERSITY of Pittsburgh, Pittsburgh, PA; Yue Wang, Yunlong Liu, Jun Wan, Lei YANG, INDIANA UNIVERSITY, Indianapolis, IN

MP143

Harnessing Glycomics To Understand Cardiac Biology And Disease

Christopher Ashwood, Linda Berg Luecke, Rebekah L Gundry, Univ of Nebraska Medical Ctr, Omaha, NE

MP144

Identification Of Epigenetic Regulators Of Cardiac Hypertrophy By An Epigenome-wide Association Study In Mice

Christoph D Rau, Univ of North Carolina at Chapel Hill, Chapel Hill, NC; Milagros Romy, Uni. of California - Los Angeles, Los Angeles, CA; Eleanor Wong, Wilson Tan, Genome Inst of Singapore, Singapore, Singapore; Aldons J Lysis, UNIV OF CALI LOS ANGELES, Los Angeles, CA; Roger Foo, Cardiovascular Res Inst, Singapore; Yibin Wang, UCLA, Encino, CA

MP145

Potential Functions Of The Nuclear Basket Associated With Dilated Cardiomyopathy

Claudia C Preston, Ryan D Burdine, Emily C Storm, Claudia S Preston, Sanford Res, Sioux Falls, SD

2:30 – 3:30 PM

Moderated Poster Session 3B: Inflammation and the Cardiovascular System

Poster Discussant: Beata Wolska, PhD, Chicago, Illinois

MP150

**Inositol 1,4,5-trisphosphate Receptors Selectively Regulate Detrimental Cardiac Fibrosis By Modulating ER-phagy**

**Gaetano Santulli**, Einstein Coll of Med, New York, NY; Marco Morelli, Albert Einstein Coll of Med, New York, NY; Xujun Wang, AECOM, NY, NY; John Ferrante, Albert Einstein Coll of Med - Montefiore Univ Hosp, New York, NY; JESSICA Gambardella, Einstein Coll of Med - ITME, New York, NY

MP151

**Cardiomyocyte HIPK2 Is A Critical Regulator Of Purinergic Signaling Regulated Myocardial Inflammation**

**Tousif Sultan**, UAB, Birmingham, AL; Anand Prakash Singh, Univ of Alabama at Birmingham, Birmingham, AL; Prachi Umbarkar, UAB Sch of Med, Birmingham, AL; QinKun Zhang, Hind Lal, UAB, Birmingham, AL

MP152

**Smad1 Activation In Infarct Macrophages Restrains Angiogenesis And Accentuates Adverse Remodeling Of The Infarcted Myocardium**

**Bijun Chen**, Ya Su, Nikolaos G Frangogiannis, ALBERT EINSTEIN COLLEGE OF MEDICINE, Bronx, NY

MP153

**TET2 Regulates Type I Interferon Signaling In The Hematopoietic Response To Myocardial Infarction**

**Claire Zhang**, David M Calcagno, Avinash Toomu, Kenneth M Huang, Zhenxing Fu, Kevin R King, Univ of California San Diego, La Jolla, CA

MP154

**Deletion Of The Duffy Antigen Receptor For Chemokines (DARC) Confers Protection Against Abdominal Aortic Aneurysm (AAA) Formation**

**Tyler W Benson**, Augusta Univ, Augusta, GA; Tetsuo Horimatsu, Medical Coll of Gerogia, Augusta, GA; Mourad Ogbi, Augusta Univ, Augusta, GA; Ha Won W Kim, MEDICAL COLLEGE OF GEORGIA, Augusta, GA; Neal L Weintraub, AUGUSTA UNIVERSITY, Augusta, GA

MP155

**Oxidized Lipids Diet Causes Pulmonary Hypertension Through T-cell Dependent Endothelial Cell Apoptosis**

**Gregoire Ruffenach**, Ellen O'connor, UNIVERSITY OF CALIFORNIA, Los Angeles, CA; Mylene Vaillancourt, JASON HONG, Victor R. Grijalva Sr., Christine M Cunningham, UCLA, Los Angeles,



CA; shuchita tiwari, UNIVERSITY OF CALIFORNIA, davis, CA; Frederic Perros, INSERM U999, Le Plessis Robinson, France; Xia YANG, UCLA, Los Angeles, CA; Aldrin V Gomes, UNIVERSITY OF CALIFORNIA DAVIS, Davis, CA; Srinivasa T Reddy II, DAVID GEFKEN SCH OF MED AT UCLA, Los Angeles, CA; Mansoureh Eghbali, UCLA, Los Angeles, CA

3:30 – 4:30 PM

Concurrent Session 11A

Molecular & Cellular Therapy for Heart Failure

Moderator: Li Qian, PhD, Chapel Hill, North Carolina

3:30 TBD

Jianyi Zhang, MD, Birmingham, Alabama

3:45 Injectable biomaterials for treating myocardial infarction and heart failure  
Karen Christman, PhD, La Jolla, California

4:00 Molecular control of heart regeneration: insights from platypus, armadillos,  
bats and whales  
Guo Huang, PhD, San Francisco, California

4:15 Q&A

3:30 – 4:30 PM

Concurrent Session 11B

Diastolic & Contractile Dysfunction in Heart Failure

Moderator: John Ralphe, MD, Madison, Wisconsin

3:30 Stunning and Hibernating Myocardium: Where are we nearly 4 decades  
later?  
Robert Kloner, MD, PhD, Pasadena, California

3:45 TBD

Julian Stelzer, MSc, Cleveland, Ohio

4:00 Contribution of sarcomere phosphorylation to progressive cardiac  
dysfunction  
Margaret Westfall, PhD, Ann Arbor, Michigan

4:15 Q&A

4:30 – 5:30 PM

General Session 12

Genomic, Genetic and Epigenetic Mechanism of Heart Failure

Moderator: Susan Cheng, MD, Los Angeles, California

- 4:30 TBD  
Ke Cheng, MD, Raleigh, North Carolina
- 4:45 TBD  
Megan Puckelwartz, PhD, Chicago, Illinois
- 5:00 Pathogenic role of senescence in age-related disorders  
Ippei Shimizu, MD, Niigata, Japan
- 5:15 Q&A

4:30 – 5:30 PM

Workshop 2

The Practice of Biomedical Research: Honesty Transparency and Early Career Funding Opportunities

Moderator: Leslie Leinwand, PhD, Boulder, Colorado

- 4:30 Panelists  
Jane Freedman, MD, Worcester, Massachusetts  
Susan Garfinkel, PhD, Columbus, Ohio  
Joseph Hill, MD, PhD, Dallas, Texas
- 5:00 Q&A

## THURSDAY, July 30

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10:00 – 11:00 AM

### Concurrent Session 13A

Extracellular Matrix; Fibroblasts & More

Moderator: Onur Kanisicak, PhD, Cincinnati, Ohio

10:00      Fibroblast-controlled contractile performance of heart muscle  
Wolfram Zimmerman, MD, Göttingen, Germany

10:15      Fibroblasts in cardiac homeostasis and disease  
Michelle Talquist, PhD, Honolulu, Hawaii

10:30      TBD  
Rongxue Wu, MD, PhD, Chicago, Illinois

10:45      Q&A

10:00 – 11:00 AM

### Concurrent Session 13B

Regulation of Small RNAs in Heart Failure

Moderator: Jaunian Chen, PhD, Los Angeles, California

10:00      MyomiR-499 and endothelial dysfunction in diabetes  
Raj Kishore, PhD, Philadelphia, Pennsylvania

10:15      Activation of endogenous cardiomyocyte proliferation for heart repair  
Yi-gang Wang, MD, PhD, Cincinnati, Ohio

10:30      The Molecular Basis of Exosomal microRNA packaging and action in Cardiac  
Protection  
W. Keith Jones, PhD, Maywood, Illinois

10:45      Q&A

11:00 – Noon

### Concurrent Session 14A

Cardiac Arrhythmias: from Basic Mechanisms to Precision Medicine

Moderator: Steven Houser, PhD, Philadelphia, Pennsylvania

11:00      Insights into arrhythmia mechanisms and therapies from cardiac reprogramming  
Stacey Rentschler, MD, St Louis, Missouri

11:15      Novel pathways for regulation of cardiac fibrosis and inflammation  
Thomas Hund, PhD, Columbus, Ohio

11:30      TBD

Francesca Stillitano, PhD, New York, New York

11:45 Q&A

11:00 – Noon

Concurrent Session 14B

Systems Approaches to Cardiac Disease: Novel Mechanisms

Moderator: Chengxue Qin, PhD, Melbourne, Australia

11:00 Apolipoprotein C3 in complications of diabetes  
Jenny Kanter, PhD, Seattle, Washington

11:15 TBD  
Brian O'Rourke, Baltimore, Maryland

11:30 Developing Novel Microproteins as Heart Failure Therapeutics  
Catherine Makarewich, PhD, Cincinnati, Ohio

11:45 Q&A

Noon – 1:00 pm

Moderated Poster Session 4A: Clinical/Translational Research

Poster Discussant: Glenn Rowe, PhD, Birmingham, Alabama

MP160

**A Transgenic Approach Using Dual Orthologous DNA Recombinases To Quantify Subpopulations Of Cycling Cardiomyocytes *In Vivo***

**Matthew J. Wolf**, Leigh A. Bradley, Alexander Young, Hongbin Li, Helen O. Billcheck, Univ of Virginia, Charlottesville, VA

MP161

**A Calcineurin-hoxb13 Axis Regulates Growth Mode Of Mammalian Cardiomyocytes**

**Ngoc Uyen Nhi Nguyen**, Diana C Canseco, Feng Xiao, UT Southwestern Medical Ctr, Dallas, TX; Yuji Nakada, Univ of Alabama at Birmingham, Birmingham, AL; Shujuan Li, Nicholas T Lam, Shalini Muralidhar, Jainy J Savla, UT Southwestern Medical Ctr, Dallas, TX; Joseph A Hill, UNIVERSITY TX SOUTHWESTERN MED, Dallas, TX; Zhaoning Wang, UT Southwestern Medical Ctr, Dallas, TX; Mahmoud Salama Ahmed, UT Southwestern Medical Ctr, Dallas, TX, Dallas, TX; Maimon Hubbi, Ivan Menendez-Montes, Jesung Moon, Shah R Ali, Elisa Villalobos, Waleed M Elhelaly, Suwannee Thet, UT Southwestern Medical Ctr, Dallas, TX; Wilson Lek Wen Tan, Chukwuemeka George Anene-Nzelu, Natl Univ of Singapore, Singapore, Singapore; Roger Foo, Cardiovascular Res Inst, Singapore; Roy Jagoree, Stanford Univ, Stanford, CA; Martha S Cyert, STANFORD UNIVERSITY, Stanford, CA; Beverly A Rothermel, UNIVERSITY OF SOUTHWESTERN MED, Dallas, TX; Hesham A Sadek, UTSOUTHWESTERN MEDICAL CENTER, Dallas, TX

MP166

**PRKAR1A Deficiency Abrogates Cardiac Hypertrophy Through Inhibition Of Mitochondrial Fission**

**Yuening Liu**, Peng Xia, Jingrui Chen, Washington State Univ, Spokane, WA; Patricia W. Bandettini, Natl Heart, Lung, and Blood Inst, Natl Insts of Health, Bethesda, MD; Lawrence S Kirschner, The Ohio State Univ, Columbus, OH; Constantine A Stratakis, Section on Endocrinology and Genetics, Eunice Kennedy Shriver Natl Inst of Child Health and Human Development, Natl Insts of Health, Bethesda, MD; Zhaokang Cheng, Washington State Univ, Spokane, WA

MP163

**Renal Sympathetic Denervation (RDN) Improves Exercise Performance And Vascular Function In The Setting Of Cardiometabolic HFpEF**

**Hunter Hidalgo**, LSU Health Science Ctr, New Orleans, LA; Juan Gao, LSU HEALTH SCIENCE CENTER, New Orleans, LA; Zhen Li, LSU Health Sciences Ctr - NO, New Orleans, LA; Thomas E Sharp III, LSU Health Science Ctr, New Orleans, LA; Huijing Xia, LOUISIANA STATE UNIVERSITY, New Orleans, LA; Daniel R Kapusta, LSU HEALTH SCIENCES CENTER, New Orleans, LA; Traci T Goodchild, LSUHSC - NEW ORLEANS, New Orleans, LA; David J Lefer, LSU HEALTH SCIENCES CENTER NO, New Orleans, LA

MP164

**Electrophysiologic Conservation Of Epicardial Conduction Dynamics After Myocardial Infarction In Newborn Piglets**

**Hanjay Wang**, Terrence Pong, Haley Lucian, Joy Aparicio-Valenzuela, Stanford Univ, Stanford, CA; Yuko Tada, STANFORD UNIVERSITY SCHOOL OF MEDIC, Stanford, CA; Sasank Sakhamuri, Sam W Baker, Nicholas A Tran, Stanford Univ, Stanford, CA; Michael J Paulsen, Stanford Univ, Los Altos, CA; Yuanjia Zhu, Stanford Univ, Stanford, CA; Anson M LEE, STANFORD UNIVERSITY, Stanford, CA; Y. Joseph Woo, Stanford Univ, Stanford, CA

MP165

**Exosome-mediated Encapsulation Alters AAV Antigenicity And Infectivity: Implications For Gene Delivery In The Heart**

**Marta Adamiak**, Yaxuan Liang, Cherrie Sherman, Shweta Lodha, Erik Kohlbrenner, Dongtak Jeong, Delaine K Ceholski, Cardiovascular Res Ctr, Icahn Sch of Med, Mount Sinai, New York, NY; Navneet Dogra, Dept of Genetics and Genomic Sciences, Dept of Pathology, Icahn Sch of Med, Mount Sinai, New York, NY; Nicole Dubois, Dept of Developmental and Regenerative Biology, Mindich Child Health and Development Inst, Black Family Stem Cell Inst, Icahn Sch of Med, Mount Sinai, New York, NY; Roger Joseph Hajjar, Susmita SAHOO, Cardiovascular Res Ctr, Icahn Sch of Med, Mount Sinai, New York, NY

12:00 pm – 1:00 pm

Moderated Poster Session 4B: Genetics and Genomics of Cardiovascular Disease

Poster Discussant: Sarah Schumacher, PhD, Cleveland, Ohio

MP170

**Increased  $G_{\alpha}$  Expression Regulated By NRSF Plays A Key Role In The Development Of Heart Failure Through The Impairment Of  $Ca^{2+}$  Homeostasis**

**Hideaki Inazumi**, KYOTO UNIVERSITY, Kyoto, Japan; Yasuaki Nakagawa, KYOTO GRADUATE SCHOOL MEDICINE, Kyoto, Japan; Kenji Moriuchi, KYOTO UNIVERSITY HOSPITAL, Kyoto City, Japan; Koichiro Kuwahara, SHINSHU UNIVERSITY, Matsumoto Nagano, Japan

MP171

**Transcription Start Site Profiling Defines Promoter And Enhancer Regions For Cardiomyopathy Genes**

**Anthony M Gacita**, Lisa Dellefave-Castillo, Patrick GT Page, David Y Barefield, Andrew Wasserstrom, Megan Puckelwartz, Northwestern Univ Feinberg Sch of Med, Chicago, IL; Marcelo A Nobrega, The Univ of Chicago, Chicago, IL; Elizabeth M McNally, Northwestern Univ Feinberg Sch of Med, Chicago, IL

MP172

**Y-chromosome Gene, Uty, Confers Male Protection Against Pulmonary Hypertension By Mediating Pro-inflammatory Chemokine Effects**

**Christine Marie Cunningham**, Soban Umar, UCLA, Los Angeles, CA; Min Li, Mitali Doshi, Los Angeles, CA; Gregoire Ruffenach, JASON HONG, UNIVERSITY OF CALIFORNIA, Los Angeles, CA; Haley Hrcir, Arthur Arnold, Mansoureh Eghbali, UCLA, Los Angeles, CA

MP173

**Loss Of DCHS1 Promotes Mitral Valve Prolapse Through Cytoskeleton Destabilization**

**Reece Moore**, Medical Univ of South Carolina, Charleston, SC; Kelsey Moore, Rebecca Stairley, Medical Univ of South Carolin, Charleston, SC; Diana Bridget Fulmer, Medical Univ of SC, Charleston, SC; Lilong Guo, Medical Univ of SC, Charleston, SC, Mt Pleasant, SC; Russell A Norris, MEDICAL UNIV OF SOUTH CAROLINA, Charleston, SC

MP174

**Cardiomyocyte-specific Deletion Of Parathyroid Hormone Receptor 1 During Development Leads To Left Ventricular Hypoplasia**

**Desiree Leach**, Ryan Jorgensen, Feinberg Sch of Med, Chicago, IL; Jayne Wolfe, Medical Coll of Wisconsin, Wauwatosa, WI; Lisa D Wilsbacher, NORTHWESTERN UNIVERSITY, Chicago, IL

MP175

**Disruption Of The Genome Architecture At The *PRRX1* Locus Is Associated With The Pathogenesis Of *LMNA*-related Dilated Cardiomyopathy**

**Yuan Zhang**, Mohamed Ameen, Isaac Perea Gil, Jennifer Arthur, Alexandra A. Gavidia, Nike Bharucha, Kevin C. Wang, Ioannis Karakikes, Stanford Univ Sch of Med, Stanford, CA

1:00

Conference Adjourns