Cardiovascular diseases and stroke affect people of all races, ethnicities, genders, religions, ages, sexual orientations, national origins and disabilities. The American Heart Association is committed to ensuring that our workforce and volunteers reflect the world’s diverse population. We know that such diversity will enrich us with the talent, energy, perspective and inspiration we need to achieve our mission: building healthier lives, free of cardiovascular diseases and stroke.

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Basic Cardiovascular Sciences
2018 Scientific Sessions:
Innovating in Cardiovascular Research

Final Program
July 30-August 2 | Grand Hyatt San Antonio | San Antonio, Texas

Abstracts are available online: http://professional.heart.org/bcvsessions

Sponsored and organized by the Council on Basic Cardiovascular Sciences.
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<th>Sunday July 29</th>
<th>Monday July 30</th>
<th>Tuesday July 31</th>
<th>Wednesday August 1</th>
<th>Thursday August 2</th>
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<tr>
<td>7:00 am</td>
<td>Women In Science Breakfast Ticket required to attend! Continental Breakfast/ Registration/Exhibits</td>
<td>7:00-8:00 am</td>
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<td>8:00 am</td>
<td>Registration/Exhibits</td>
<td>8:00-9:15 am</td>
<td>Concurrent Sessions 3A: Emerging Cardiac Therapeutic Strategies 3B: Excitation-Contraction Coupling</td>
<td>8:00-9:15 am</td>
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<td>9:00 am</td>
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<td>8:00-9:15 am</td>
<td>Concurrent Sessions 8A: Personalized Cell Models of Cardiovascular Disease 8B: Getting the Message – New Ways to Think About RNA</td>
<td>8:00-9:00 am</td>
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<tr>
<td>9:30 am</td>
<td>Early Career Pre-Conference Session Opening Welcome</td>
<td>8:45-9:45 am</td>
<td>8:00-9:15 am</td>
<td>8:00-9:00 am</td>
<td>9:00-9:30 am</td>
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<tr>
<td>10:00 am</td>
<td>10:00-11:15 am Early Career Pre-Conference Session 1</td>
<td>9:45-11:00 am</td>
<td>Concurrent Sessions 4A: Transcriptional Regulation and Epigenetics 4B: How to Build a New Heart One Cell at a Time</td>
<td>9:00-10:30 am</td>
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<tr>
<td>10:30 am</td>
<td>“Next Big Thing” in Cardiovascular Research</td>
<td>9:45-11:00 am</td>
<td>9:00-11:00 am</td>
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<tr>
<td>11:00 am</td>
<td>Early Career Pre-Conference Session 2 Featured Presentation</td>
<td>10:00-10:30 am</td>
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<tr>
<td>Noon-1:00 pm</td>
<td>Noon-1:30 pm Early Career Luncheon Speed Networking/Mentoring Round Tables OR Lunch on your own; Poster Viewing; Exhibits</td>
<td>11:00 AM-Noon General Session 5 Keynote Lecture</td>
<td>11:45 am-1:00 pm Lunch on your own; Poster Viewing; Exhibits</td>
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<td>1:00 pm</td>
<td>Noon-1:30 pm Early Career Luncheon Speed Networking/Mentoring Round Tables OR Lunch on your own; Poster Viewing; Exhibits</td>
<td>11:30-1:00 pm Opening Welcome</td>
<td>11:45 am-1:00 pm Lunch on your own; Poster Viewing; Exhibits</td>
<td>11:45 am-1:30 pm Lunch on your own; Poster Viewing; Exhibits</td>
<td>11:45 am Closing Remarks/ Adjourn</td>
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<tr>
<td>1:30 pm</td>
<td>1:00-2:35 pm Concurrent Sessions 1A: Cardiac Fibrosis – Changing the Landscape 1B: The On and Off of Redox</td>
<td>1:30-2:45 pm</td>
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<tr>
<td>2:00 pm</td>
<td>1:30-2:45 pm</td>
<td>Concurrent Sessions 4A: Transcriptional Regulation and Epigenetics 4B: How to Build a New Heart One Cell at a Time</td>
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<tr>
<td>2:30 pm</td>
<td>Refreshment Break/ Exhibits</td>
<td>2:45-3:15 pm</td>
<td>Concurrent Sessions 6A: The Resurgence of Cardiac Metabolism</td>
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<td>3:00 pm</td>
<td>Refreshment Break/ Exhibits</td>
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<td>3:30-4:40 pm</td>
<td>Concurrent Sessions 1A: Signaling Networks in Cardiac Myocytes 2B: Mitochondrial and Heart Failure</td>
<td>3:15-4:30 pm</td>
<td>Concurrent Sessions 7A: Functional Genomics and Pathogenicity Assessment 7B: Workshop 1 – Imaging in vitro and in vivo</td>
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<td>4:00 pm</td>
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<td>Concurrent Sessions 12A: Workshop 3 – Single and Multi-omics 12B: Cardiovascular Stress and Inflammation</td>
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<td>5:00 pm</td>
<td>4:00-7:00 pm Poster Session 1 and Reception</td>
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<tr>
<td>7:00 pm</td>
<td>Early Career Investigator Social Event</td>
<td>7:00-10:00 pm</td>
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Questions and Information

Questions
If you have questions after reading this program, contact the American Heart Association National Center:

Telephone: 888.242.2453 (inside the United States)
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Fax: 214.373.3406
Email: scientificconferences@heart.org
Website: professional.heart.org

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• If you have additional questions, please email us at scientificconferences@heart.org or call toll-free 888.242.2453
Letter From the Chairs

Dear Colleague,

On behalf of the American Heart Association and the Scientific Council on Basic Cardiovascular Sciences, welcome to the Basic Cardiovascular Sciences 2018 Scientific Sessions: Innovating in Cardiovascular Research.

The conference is considered by many to be the premier basic and translational cardiovascular research meeting in the world and attracts our field’s best and brightest from across the globe.

Our primary goal is to provide a forum for timely discussion of the latest findings from leaders in the field of cardiovascular sciences. As a result, we hope the conference will foster new ideas and collaborations to accelerate translation.

We’re pleased to announce some new programming this year, including the Early Career Pre-conference Session on Monday morning, concurrent sessions throughout the meeting to expand your educational experience, workshops and early career sessions.

Attendees will hear state-of-the-art presentations on a broad array of topics, including cardiac fibrosis – changing the landscape, the on and off of redox, signaling networks in cardiac myocytes, mitochondrion and heart failure, transcriptional regulation and epigenetics, ion channels and arrhythmias, functional genomics and pathogenicity assessment, personalized cell models of arrhythmia, new ways to think about RNA, the architecture of contraction, cell death and cardiomyopathy, and may others. Workshop topics include imaging in vitro and in vivo, toward single cell analysis, and single and multi-omics. Invited speakers represent institutions from the United States, Australia, Asia, Canada, Europe and Israel as we further broaden our international scope and partnerships.

In addition to the Early Career Pre-conference session on Monday morning, we will have the Outstanding Early Career Investigator Award competition, oral presentations of selected abstracts, three lively poster sessions, and two early career workshops. The Tuesday lunch workshop (ticket required to attend) will feature speed networking with senior faculty panelists, and the Wednesday morning workshop on finding success and happiness with a PhD will feature presentations by faculty in all stages of their careers.

As your hosts, we hope you will find the conference an educational experience and a great opportunity to network with scientists from around the world who are dedicated to building healthier lives, free of cardiovascular diseases and stroke. Let us know if we can do anything to enrich your stay in Portland and thank you for sharing your insight and expertise. We look forward to meeting you.

Sincerely,

Michael S. Kapiloff, MD, PhD, FAHA
Program Co-Chair, BCVS 2018

Jennifer Van Eyk, PhD, FAHA
Program Co-Chair, BCVS 2018

Rong Tian, MD, PhD, FAHA
Program Co-Chair, BCVS 2018
The American Heart Association would like to thank the following for their support of BCVS 2018 Scientific Sessions:

The Academy of Cardiovascular Research Excellence (ACRE)
American Physiological Society
National Heart, Lung, and Blood Institute

Special thanks to the individual BCVS Council Members who provided funding to support this meeting and to the following for their continued work in support of this meeting:

Junichi Sadoshima, MD, PhD, FAHA, Rutgers New Jersey Medical School
Mitsuru Ohishi, MD, PhD, Cardiovascular Medicine and Hypertension, Graduate School of Medicine, Kagoshima University
Wataru Shimizu, MD, PhD, Department of Cardiovascular Medicine, Nippon Medical School
Yoshiyuki Ikeda MD, PhD, Cardiovascular Medicine and Hypertension, Graduate School of Medicine, Kagoshima University
Akihiro Shirakabe MD, PhD, Department of Cardiovascular Medicine, Nippon Medical School
Kuniya Asai MD, PhD, Department of Cardiovascular Medicine, Nippon Medical School

The American Heart Association is grateful to the members of the Program Committee for their dedication and leadership in planning the program.

Basic Cardiovascular Sciences 2018 Program Committee

Michael S. Kapiloff, MD, PhD, FAHA, Co-Chair, Stanford University, Stanford, California
Jennifer Van Eyk, PhD, FAHA, Co-Chair, Cedars Sinai Medical Center, Los Angeles, California
Rong Tian, MD, PhD, FAHA, Co-Chair, University of Washington, Seattle, Washington
Ju Chen, PhD, University of California San Diego School of Medicine, La Jolla, California
Raj Kishore, PhD, FAHA, Temple University School of Medicine, Philadelphia, Pennsylvania
Maria Kontaridis, PhD, FAHA, Beth Israel Deaconess Medical Center, Boston, Massachusetts
Ronglih Liao, PhD, FAHA, Stanford University, Stanford, California
Xin Ma, MD, PhD, FAHA, Thomas Jefferson University, Philadelphia, Pennsylvania
Junichi Sadoshima, MD, PhD, FAHA, UMDNJ New Jersey Medical School, Newark, New Jersey
Sakthivel Sadayappan, PhD, MBA, University of Cincinnati College of Medicine, Cincinnati, Ohio
Jil C. Tardiff, MD, PhD, FAHA, University of Arizona, Tucson, Arizona
Loren E. Wold, PhD, FAHA, Ohio State University, Columbus, Ohio
Joseph C. Wu, MD, PhD, FAHA, Stanford University School of Medicine, Stanford, California
Jianyi “Jay” Zhang, MD, PhD, FAHA, University of Alabama at Birmingham, Birmingham, Alabama
Wolfram-Hubertus Zimmermann, PhD, FAHA, Georg-August-University Göttingen, Göttingen, Germany
Invited Presenters and Panelists

E. Dale Abel, MD, PhD, University of Iowa, Roy J. and Lucille A. Carver College of Medicine, Iowa City, Iowa
Beth Andersen, Arkitek Scientific, Paso Robles, California
Peggi Angel, PhD, Medical University of South Carolina, Charleston, South Carolina
Zoltan P. Arany, MD, PhD, University of Pennsylvania, Philadelphia, Pennsylvania
Adrian Arrieta, MS, San Diego State University, San Diego, California
Aparna Baxi, University of Maryland, College Park, Maryland
Ivor J. Benjamin, MD, FACC, FAHA, Medical College of Wisconsin, Milwaukee, Wisconsin and
President, American Heart Association
Burns Blaxall, PhD, FAHA, Cincinnati Children’s Hospital, Cincinnati, Ohio
Amy Bradshaw, PhD, Medical University of South Carolina, Charleston, South Carolina
Joan Heller Brown, PhD, University of California, San Diego, La Jolla, California
Ju Chen, PhD, University of California San Diego, La Jolla, California
Charles Cunningham, PhD, University of Toronto, Toronto, Ontario, Canada
Diego De Stefani, PhD, University of Padova, Padova, Italy
Federica del Monte, MD, PhD, Medical University of South Carolina, Charleston, South Carolina
Dominic Del Re, PhD, Rutgers New Jersey Medical School, Newark, New Jersey
Stefanie Dimmeler, PhD, Institute of Cardiovascular Regeneration, Goethe University, Frankfurt, Germany
Kimberly Dodge-Kafka, PhD, University of Connecticut Health Center, Farmington, Connecticut
John W. Elrod, PhD, Temple University, Philadelphia, Pennsylvania
Stefan Engelhardt, MD, PhD, TU Munich, Munich, Germany
Irina Epstein, PhD, UCSF Gladstone Institute, San Francisco, California
Christian Faul, PhD, The University of Alabama at Birmingham, Birmingham, Alabama
Justyna P. Fert-Bober, PhD, Cedars-Sinai Medical Center, Los Angeles, California
Gemma Figtree, MBBS, PhD, Kolling Institute, University of Sydney, St. Leonards, Australia
Roger S. Foo, MD, PhD, University of Singapore, Singapore
D. Brian Foster, PhD, Johns Hopkins School of Medicine, Baltimore, Maryland
Ying Ge, PhD, University of Wisconsin, Madison, Wisconsin
Lior Gepstein, MD, PhD, Technion, Haifa, Israel
Mauro Giaccia, MD, PhD, International Centre for Genetic Engineering and Biotechnology, Trieste, Italy
Chris C. Glembocki, PhD, San Diego State University, San Diego, California
Joshua I. Goldhaber, MD, Cedars-Sinai Medical Center, Los Angeles, California
Asa Gustafsson, PhD, FAHA, University of California, San Diego, La Jolla, California
Roger Hajjar, MD, Mount Sinai School of Medicine, New York, New York
Taben M. Hale, PhD, University of Arizona, Phoenix, Arizona
Joshua Hare, MD, FAHA, University of Miami, Miami, Florida
Bradford G. Hill, PhD, University of Louisville, Louisville, Kentucky
Joseph Hill, MD, PhD, FAHA, UT Southwestern Medical School, Dallas, Texas
Liviu Hool, PhD, University of Western Australia, Crawley, Australia
Steven Houser, PhD, FAHA, Temple University, Philadelphia, Pennsylvania
Thomas Hund, PhD, Ohio State University, Columbus, Ohio
Ahmed G. Ibrahim, PhD, MPH, Cedars-Sinai Medical Center, Los Angeles, California
Ioannis Karakikes, PhD, Stanford University, Palo Alto, California
Neil Kelleher, PhD, Northwestern University, Chicago, Illinois
Daniel P. Kelly, MD, University of Pennsylvania, Philadelphia, Pennsylvania
Lonnie Kirshenbaum, PhD, University of Manitoba, Winnipeg, Manitoba, Canada
Bjorn C. Knollmann, MD, PhD, Vanderbilt University, Nashville, Tennessee
Maria Kontaridis, PhD, FAHA, Beth Israel Deaconess Medical Center, Boston, Massachusetts
David J. Lefer, PhD, Louisiana State University, New Orleans, Louisiana
Leslie Leinwand, PhD, University of Colorado, Boulder, Colorado
Ronglih Liao, PhD, FAHA, Stanford University School of Medicine, Stanford, California
Merry L. Lindsey, PhD, FAHA, University of Mississippi Medical Center, Jackson, Mississippi
Joseph Loscalzo, MD, PhD, FAHA, Harvard Medical School, Boston, Massachusetts
Christoph Maack, MD, University Clinic Würzburg, Wurtzberg, Germany
Catherine A. Makarewitz, PhD, UT Southwestern Medical Center, Dallas, Texas

(continued on next page)
Invited Presenters and Panelists (continued)

Ichiro Manabe, MD, PhD, Chiba University Graduate School of Medicine, Chiba, Japan
Manuel Mayr, MD, Kings College, London, United Kingdom
Timothy A. McKinsey, PhD, University of Colorado, Aurora, Colorado
Donald Menick, PhD, Medical University of South Carolina, Charleston, South Carolina
Tohru Minamino, MD, PhD, FAHA, Niigata University Graduate School of Medical and Dental Sciences, Niigata, Japan
Jeffrey D. Molkentin, PhD, Children’s Hospital Medical Center, Cincinnati, Ohio
Deborah Muoio, PhD, Duke University, Durham, North Carolina
Elizabeth (Beth) McNally, MD, PhD, Northwestern University, Chicago, Illinois
Elizabeth (Tish) Murphy, PhD, FAHA, NHLBI, Bethesda, Maryland
Kiran Musunuru, MD, PhD, University of Pennsylvania, Philadelphia, Pennsylvania
Nathan Paipant, PhD, University of Queensland Institute for Molecular Bioscience, St. Lucia, Queensland, Australia
Peipei Ping, PhD, FAHA, David Geffen School of Medicine at UCLA, Los Angeles, California
Enzo R. Porello, PhD, Murdoch Children’s Research Institute, Parkville, Australia
Nicole H. Purcell, PhD, University of California San Diego, La Jolla, California
Li Qian, PhD, University of North Carolina, Chapel Hill, North Carolina
Sakthivel Sadayappan, PhD, MBA, University of Cincinnati College of Medicine, Cincinnati, Ohio
Junichi Sadoshima, MD, FAHA, Rutgers New Jersey Medical School, Newark, New Jersey
Svati H. Shah, MD, FAHA, Duke University Medical Center, Durham, North Carolina
Michael P. Snyder, PhD, Stanford University, Stanford, California
Jonathan S. Stamler, MD, FAHA, Case Western Reserve University, Cleveland, Ohio
Susan Steinberg, MD, FAHA, Columbia University Medical Center, New York, New York
Jennifer L. Strande, MD, Medical College of Wisconsin, Milwaukee, Wisconsin
Mark Sussman, PhD, FAHA, San Diego State University, San Diego, California
Jil Tardiff, MD PhD, FAHA, University of Arizona, Tucson, Arizona
Rong Tian, MD, PhD, FAHA, University of Washington, Seattle, Washington
Baljit Ubhi, PhD, SCIEX, Redwood City, California
Jennifer Van Eyk, PhD, FAHA, Cedars-Sinai Medical Center, Los Angeles, California
Tom M. Vondriska, PhD, FAHA, University of California Los Angeles, Los Angeles, California
Xander Wehrens, MD, PhD, FAHA, Baylor College of Medicine, Houston, Texas
Quinn S. Wells, MD, Vanderbilt University Medical Center, Nashville, Tennessee
Loren E. Wold, PhD, FAHA, Ohio State University, Columbus, Ohio
Beata M. Wolska, PhD, University of Illinois, Chicago, Illinois
Joseph C. Wu, MD, PhD, FAHA, Stanford University School of Medicine, Stanford, California
Sean Wu, PhD, Stanford University, Stanford, California
Yi Yang, PhD, East China University of Science and Technology, Shanghai, China
John R. Yates, III, PhD, The Scripps Research Institute, La Jolla, California
Manuela Zaccolo, MD, PhD, Oxford Balliol College, Oxford, United Kingdom
Jianyi (Jay) Zhang, MD, PhD, FAHA, University of Alabama at Birmingham, Birmingham, Alabama
Invited Moderators

Frederica Accornero, PhD, Ohio State University, Columbus, Ohio
Maegen Ackerman, PhD, Ohio State University, Columbus, Ohio
Allen Andres, PhD, Cedars-Sinai Medical Center, Los Angeles, California
D. Kent Arrell, PhD, Mayo Clinic, Rochester, Minnesota
Donald M. Bers, PhD, FAHA, University of California at Davis, Davis, California
Burns Blaxall, PhD, FAHA, Cincinnati Children’s Hospital, Cincinnati, Ohio
Jean C. Bopassa, PhD, University of Texas Health Science Center, San Antonio, Texas
Lauren A. Cowart, PhD, Virginia Commonwealth University, Richmond, Virginia
Jennifer Davis, PhD, University of Washington, Seattle, Washington
Antje D. Ebert, PhD, Goettingen University, Goettingen, Germany
Sarah Franklin, PhD, University of Utah, Salt Lake City, Utah
Roberta A. Gottlieb, MD, Cedars-Sinai Medical Center, Los Angeles, California
Michael Greenberg, PhD, Washington University, St. Louis, Missouri
Rebekah L. Gundry, PhD, Medical College of Wisconsin, Milwaukee, Wisconsin
Joshua Hare, MD, FAHA, University of Miami, Miami, Florida
Nirmala Hariharan, PhD, University of California at Davis, Davis, California
Shijun Hu, PhD, Soochow University, Suzhou, China
Anja Karlstaedt, MD, PhD, McGovern Medical School at UT Health, Houston, Texas
Mohsin Khan, PhD, Temple University, Philadelphia, Pennsylvania
Richard N. Kitsis, MD, FAHA, Albert Einstein College of Medicine, Bronx, New York
Maria Kontaridis, PhD, FAHA, Beth Israel Deaconess Medical Center, Boston, Massachusetts
Piu Yu (Maggie) Lam, PhD, University of Colorado, Denver, Colorado
Edward Lau, PhD, Stanford University, Palo Alto, California
Rebecca Levit, MD, Emory University, Atlanta, Georgia
Ronglih Liao, PhD, FAHA, Stanford University, Stanford, California
Merry L. Lindsey, PhD, FAHA, University of Mississippi Medical Center, Jackson, Mississippi
Gary D. Lopaschuk, PhD, University of Alberta, Edmonton, Alberta, Canada
James F. Martin, MD, PhD, Baylor College of Medicine, Houston, Texas
Farid Moussavi-Harami, MD, University of Washington, Seattle, Washington
Nikhil Munshi, MD, PhD, UT Southwestern Medical Center, Dallas, Texas
Brian O’Rourke, PhD, Johns Hopkins University, Baltimore, Maryland
Liming Pei, PhD, Children’s Hospital of Philadelphia, Philadelphia, Pennsylvania
Geoffrey S. Pitt, MD, PhD, Weill Cornell Medical College, New York, New York
Julia Ritterhoff, PhD, University of Washington, Seattle, Washington
Susmita Sahoo, PhD, Mount Sinai School of Medicine, New York, New York
Fadi N. Salloum, PhD, Virginia Commonwealth University, Richmond, Virginia
Sarah M. Schumacher, PhD, Cleveland Clinic, Cleveland, Ohio
Dan Shao, PhD, University of Washington, Seattle, Washington
Ashley J. Smuder, PhD, University of South Carolina, Columbia, South Carolina
Kristin I. Stanford, PhD, Ohio State University, Columbus, Ohio
Susan F. Steinberg, MD, FAHA, Columbia University, New York, New York
Henry M. Sucov, PhD, University of Southern California at Los Angeles, California
Michael Tranter, PhD, University of Cincinnati, Cincinnati, Ohio
Yibin Wang, PhD, FAHA, University of California at Los Angeles, Los Angeles, California
Wang Wang, MD, University of Washington, Seattle, Washington
Adam R. Wende, PhD, University of Alabama at Birmingham, Birmingham, Alabama
Melanie Y. White, PhD, University of Sydney, Sydney, NSW, Australia
Joseph C. Wu, MD, PhD, FAHA, Stanford University, Stanford, California
Sean Wu, PhD, Stanford University, Stanford, California
Haodong Xu, MD, University of Washington, Seattle, Washington
Lilei Zhang, MD, Baylor College of Medicine, Houston, Texas

Next year’s conference: July 29–August 1, 2019. Visit professional.heart.org/bcvssessions for more information.
Abstract Reviewers

The conference organizers gratefully acknowledge the following individuals for assisting with the abstract grading process:

Federica Accornero
Peggi Angel
Zoltan Arany
D. Kent Arrell
Adrian Arrieta
Amy Bradshaw
Ju Chen
Diego De Stafani
Federica del Monte
Dominic P. Del Re
John W. Elrod
Stefan Engelhardt
Gemma Figtree
Roger Foo
Sarah Franklin
Ying Ge
Mauro Giacca
Roberta Gottlieb
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Nirmala Hariharan
Bradford G. Hill
Joseph A. Hill
Livia Hool
Michael S. Kapiloff
Ioannis Karakikes
Daniel P. Kelly
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Piu Yu (Maggie) Lam
Merry L. Lindsey
Gary Lopaschuk
Joseph Loscalzo
Xin Ma
Christoph Maack
Catherine A. Makarewich
Ichiro Manabe
Eduardo Marban
Manuel Mayr
Timothy A. McKinsey
Tohru Minamino
Jeffery D. Molkentin
Elizabeth (Tish) Murphy
Nathan Palpant
Peipei Ping
Geoffrey Pitt
Nichole H. Purcel
Li Qian
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Susmita Sahoo
Sarah M. Schumacker
Susan F. Steinberg
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Mark A. Sussman
Rong Tian
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Loren E. Wold
Beata M. Wolska
Joseph C. Wu
Sean M. Wu
Haodong Xu
Yi Yang
Jianyi (Jay) Zhang
Wolfram-Hubertus Zimmermann
Room Locator

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<thead>
<tr>
<th>Activity</th>
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<tr>
<td><strong>Sunday, July 29</strong></td>
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<td>ACRE Meeting</td>
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<td><strong>Monday, July 30</strong></td>
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<tr>
<td>Exhibits</td>
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<td>Concurrent Session A</td>
<td>Texas Ballroom A/B (4th Floor)</td>
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<td>Concurrent Session B</td>
<td>Texas Ballroom C (4th Floor)</td>
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<tr>
<td>Early Career Pre-Conference Session</td>
<td>Texas Ballroom C 4th Floor)</td>
</tr>
<tr>
<td>Opening Welcome</td>
<td>Texas Ballroom A/B (4th Floor)</td>
</tr>
<tr>
<td>Poster Session</td>
<td>Texas Ballroom D/E/F (4th Floor)</td>
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<tr>
<td>Refreshment Breaks</td>
<td>Texas Ballroom Foyer (4th Floor)</td>
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<tr>
<td>Registration</td>
<td>Texas Ballroom Foyer (4th Floor)</td>
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<tr>
<td>Speaker Resource Room</td>
<td>Bonham A (3rd Floor)</td>
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<td><strong>Tuesday, July 31</strong></td>
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<tr>
<td>Continental Breakfast</td>
<td>Texas Ballroom Foyer (4th Floor)</td>
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<tr>
<td>Concurrent Session A</td>
<td>Texas Ballroom A/B (4th Floor)</td>
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<tr>
<td>Concurrent Session B</td>
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<tr>
<td>Early Career Investigator Luncheon</td>
<td>Republic A/B/C (4th Floor)</td>
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<tr>
<td>Early Career Investigator Social Event</td>
<td>Republic A/B/C (4th Floor)</td>
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<tr>
<td>Exhibits</td>
<td>Texas Ballroom Foyer (4th Floor)</td>
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<tr>
<td>Keynote Lecture</td>
<td>Texas Ballroom A/B (4th Floor)</td>
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<td>Poster Session</td>
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<td>Refreshment Breaks</td>
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<td>Registration</td>
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<tr>
<td>Speaker Resource Room</td>
<td>Bonham A (3rd Floor)</td>
</tr>
<tr>
<td>Women in Science Breakfast</td>
<td>Republic A/B/C (4th Floor)</td>
</tr>
<tr>
<td><strong>Wednesday, August 1</strong></td>
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<tr>
<td>BCVS Council Dinner</td>
<td>Texas Ballroom A/B (4th Floor)</td>
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<tr>
<td>Continental Breakfast</td>
<td>Texas Ballroom Foyer (4th Floor)</td>
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<tr>
<td>Concurrent Session A</td>
<td>Texas Ballroom A/B (4th Floor)</td>
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<td>Concurrent Session B</td>
<td>Texas Ballroom C (4th Floor)</td>
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<tr>
<td>Exhibits</td>
<td>Texas Ballroom Foyer (4th Floor)</td>
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<tr>
<td>Poster Session</td>
<td>Texas Ballroom D/E/F (4th Floor)</td>
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<tr>
<td>Refreshment Breaks</td>
<td>Texas Ballroom Foyer (4th Floor)</td>
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<tr>
<td>Registration</td>
<td>Texas Ballroom Foyer (4th Floor)</td>
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<tr>
<td>Speaker Resource Room</td>
<td>Bonham A (3rd Floor)</td>
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<td><strong>Thursday, August 2</strong></td>
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<tr>
<td>Continental Breakfast</td>
<td>Texas Ballroom Foyer (4th Floor)</td>
</tr>
<tr>
<td>General Sessions</td>
<td>Texas Ballroom A/B (4th Floor)</td>
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<tr>
<td>Refreshment Break</td>
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<tr>
<td>Registration</td>
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<tr>
<td>Speaker Resource Room</td>
<td>Bonham A (3rd Floor)</td>
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</table>
General Information

Program Description
The 14th annual BCVS 2018 Scientific Sessions: Innovating in Cardiovascular Research has become the “go to” conference for molecular cardiovascular biology and disease. Sponsored by the American Heart Association Basic Cardiovascular Sciences Council, the conference attracts leading researchers in fields such as microRNAs, cardiac gene and cell therapy, cardiac development and most recently tissue engineering and iPS cells.

The agenda includes early career pre-conference sessions on Monday morning, followed by 10 concurrent sessions and five general sessions over three-and-a-half days — all in a forum that promotes the relaxed exchange and discussion of cutting edge research in molecular and translational cardiovascular biology and disease. The program includes a diversity of speakers representing the best cardiovascular scientists from around the world.

The organizers continue to embrace early career cardiovascular scientists by including oral abstract presentations from up-and-coming investigators throughout the program, with one session dedicated for the Young Investigator Award presentations/competition. In addition to stimulating talks, posters from submitted abstracts will be presented in three sessions.

Conference Registration
Registration will be in the Texas Ballroom Foyer during the following hours:
Monday, July 30..............8:00 am–6:00 pm
Tuesday, July 31.............7:00 am–6:00 pm
Wednesday, August 1........7:00 am–6:00 pm
Thursday, August 2..........7:00 am–Noon

Exhibits
Beginning at 8 a.m. Monday, visit our exhibitors. This year we welcome:
• AHA Membership
• ADInstruments, Inc.
• American Physiological Society
• Arkitek Scientific
• Exemplar Genetics
• Fujifilm Visualsonics, Inc.
• Illumina
• IonOptix
• Scientific Publications
• Scintica Instrumentation
• Transonic Systems, Inc.

You may also renew your AHA membership and bring your non-member colleagues to learn the latest information about the benefits of membership.

Learning Objectives
At the conclusion of the conference, participants will be able to:
1. Describe current research into the underlying mechanisms of cardiac remodeling and its relevance to your work.
2. Discuss current research into cardiac fibrosis and its implications for your own work.
3. Describe the most recent research related to the physiology and signaling pathways of cardiac myocytes and its implications for your work.
4. Describe the potential role of and challenges involved in the use of big data analytics to guide cardiovascular research and patient care, and their implications for your work.
5. Describe opportunities to bring a greater emphasis on translational research to your work.
6. Describe emerging advances in the area of cardiovascular regenerative medicine, as well as current challenges.
General Information (continued)

**Joint Accreditation Statements**

In support of improving care, this activity has been planned and implemented by the American Heart Association. The American Heart Association is accredited by the Accreditation Council for Continuing Medical Education (ACCME), the Accreditation Council for Pharmacy Education (ACPE), and the American Nurses Credentialing Center (ANCC), to provide continuing education for the healthcare team.

**AMA Credit Designation Statement – Physicians**

The American Heart Association designates this live activity for a maximum of 23.75 AMA PRA Category 1 Credits™. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

**AAPA Credit Acceptance Statement – Physician Assistants**

AAPA accepts certificates of participation for educational activities certified for AMA PRA Category 1 Credit™ from organizations accredited by ACCME or a recognized state medical society. Physician assistants may receive a maximum of 23.75 hours of Category I credit for completing this program.

**AANP Credit Acceptance Statement – Nurse Practitioners**

American Academy of Nurse Practitioners (AANP) accepts AMA PRA Category 1 Credit™ from organizations accredited by the ACCME.

***AMA Credit must be claimed within six months of attendance. Credit will no longer be available to claim after Feb. 2, 2019.***

**Disclosure Policy**

All persons who develop and/or control educational content in CME/CE activities provided by the American Heart Association will disclose to the audience all financial relationships with any commercial supporters of this activity as well as with other commercial interests whose lines of business are related to the CME/CE-certified content of this activity. In addition, presenters will disclose unlabeled/unapproved uses of drugs or devices discussed in their presentations. Such disclosures will be made in writing in course presentation materials.

**Claiming CME/CE Credit**

2. Click Activities in Progress.
3. Enter your Username and Password, and click Sign In.
   a. If you do not remember your Username or Password, click the Forgot Password? link.
   b. If you are not a registered user, click Create an account to enter your account information and receive your Username and Password.
4. Select the activity.
5. Review the Activity Overview tab, scroll to bottom and click Continue.
   a. You may be required to check a confirmation box that you have read the information.
6. Click the Launch button to complete an evaluation on the course. This step is required to claim credit. Once complete, click Continue.
7. Claim your credit by clicking the Claim button for the appropriate accreditation.
   a. You may qualify for more than one credit type based on your user profile.
   b. ACCME, ANCC and CAPCE allow claiming of variable credit. You will have the option to claim all or part of the activity credit if applicable to your user profile.
8. Click Continue to generate your certificate.
9. Click the certificate link to print or save it.
10. Click Close. The activity is stored under Completed Activities.

You are strongly encouraged to claim your CME/CE credit within 30 days of the conference, and you must claim your credit by Feb. 2, 2019. For customer support, please contact our National Engagement Center at 1-888-242-2453 (between 8:00 AM–5:00 PM Central Standard Time) or email learn@heart.org.

International Attendance Verification forms will be available at registration.

Next year’s conference: July 29–August 1, 2019. Visit professional.heart.org/bcvssessions for more information.
Web Resources

**HealthJobsPLUS for Professionals**
The American Heart Association, in partnership with Lippincott Williams & Wilkins (a Wolters Kluwer business), is proud to offer HealthJobsPlus.com. HealthJobsPlus.com provides a first-rate source for those seeking and posting jobs by connecting qualified healthcare professionals with top-notch employers.

**Professional.heart.org**
Professional Heart Daily is the American Heart Association/American Stroke Association’s powerful Internet resource for healthcare professionals devoted to the fight against cardiovascular disease and stroke. Depending on the level of membership selected, AHA/ASA Professional Members may have free access to all 11 AHA scientific journals, biweekly clinical updates, core clinical textbooks, a continually updated drug database and much more. Also available from this site are links to the BCVS 2018 Scientific Sessions website, Science News and the AHA’s Professional Online Network.

**learn.heart.org**
This website is where healthcare professionals can complete the conference evaluation and claim CME/CE credits after the meeting. Also available on learn.heart.org are podcasts, online courses, satellite broadcasts and webcasts.

**Twitter**
Use Twitter to tweet your questions/comments during the meeting or just talk about what is happening at BCVS 2018. Use hashtag: - #BCVS18
Information for Presenters

**Speaker Resource Room**

The Speaker Resource Room is in Bonham A on the third floor of the hotel. Speakers are asked to deliver their presentations on CD-ROM, DVD-ROM or a USB storage device to the Speaker Resource Room at least one hour before the beginning of the session in which they will speak. *It is imperative that you review your presentation in the Speaker Resource Room if it contains video files or was created on a Mac.* Speakers will be directed to a preloading station where a technician will load the presentations. Speakers may also use this room to review and practice their presentations on both PC and Mac computers.

The Speaker Resource Room will be open during these hours:

- **Monday, July 30** 8:00 AM–6:00 PM
- **Tuesday, July 31** 7:00 AM–6:00 PM
- **Wednesday, August 1** 7:00 AM–6:00 PM
- **Thursday, August 2** 7:00 AM–Noon

**Abstract Presentations**

Abstract presentations for the Basic Cardiovascular Sciences 2018 Scientific Sessions are embargoed for release at the time of presentation or time of AHA news event. Information may not be released before the scheduled presentation time. Abstract content will be available on the BCVS 2018 Conference website: professional.heart.org/bcvsessions.

Abstracts will be published in the online edition of the AHA journal *Circulation Research.*

Abstracts will be presented as follows:

The following abstracts will be presented orally during the Early Career Pre-Conference Session: “Next Big Thing” at 10:00–11:15 AM Monday, and as a poster during the regularly scheduled poster sessions:

<table>
<thead>
<tr>
<th>Name</th>
<th>Abstract Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Matthew A. Walker</td>
<td>417</td>
</tr>
<tr>
<td>Chen Gao</td>
<td>263</td>
</tr>
<tr>
<td>Felix A. Trogish</td>
<td>531</td>
</tr>
<tr>
<td>Maribel Marquez</td>
<td>378</td>
</tr>
<tr>
<td>Jun Wang</td>
<td>214</td>
</tr>
</tbody>
</table>

Abstracts 100-119 will be presented orally.

**Poster Abstracts**

<table>
<thead>
<tr>
<th>Poster Session 1</th>
<th>Monday, July 30</th>
<th>4:40–7:00 PM</th>
<th>Presentations 200-321</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poster Session 2</td>
<td>Tuesday, July 31</td>
<td>4:30–7:00 PM</td>
<td>Presentations 330-458</td>
</tr>
<tr>
<td>Poster Session 3</td>
<td>Wednesday, August 1</td>
<td>4:30–7:00 PM</td>
<td>Presentations 460-586</td>
</tr>
</tbody>
</table>

**Poster Presenters, please note the schedule below:**

**Poster Session 1**

- **Set-up time:** Monday, July 30 Noon–4:00 PM
- **Attended time:** Monday, July 30 4:40–7:00 PM
- **Tear-down time:** Tuesday, July 31 before 9:00 AM

**Poster Session 2**

- **Set-up time:** Tuesday, July 31 Noon–4:00 PM
- **Attended time:** Tuesday, July 31 4:30–7:00 PM
- **Tear-down time:** Wednesday, August 1 before 9:00 AM

**Poster Session 3**

- **Set-up time:** Wednesday, August 1 Noon–4:00 PM
- **Attended time:** Wednesday, August 1 4:30–7:00 PM
- **Tear-down time:** Thursday, August 2 before 9:00 AM

**ePosters**

In addition to the traditional poster format, abstract presenters were invited to upload their posters electronically. During the meeting, each abstract will have a QR code displayed on their poster board that will enable attendees with smartphones to view the ePosters and, if applicable, the author’s narration of the poster. ePosters are available only to attendees and may be viewed from the Communication Center — located in the registration area. Posters will be accessible to the general public after August 31.
Keynote Lecture

The Keynote Lecture will be presented at 11:00 AM Tuesday by Stefanie Dimmeler, PhD. Professor Dimmeler is Professor of Experimental Medicine and Director of the Institute of Cardiovascular Regeneration at the Institute of Cardiovascular Regeneration, Center for Molecular Medicine at the University of Frankfurt in Frankfurt, Germany.

Dr. Dimmeler received her PhD from the University of Konstanz in Konstanz (Germany). She then completed a fellowship in experimental surgery at the University of Cologne and in molecular cardiology at the University of Frankfurt (Germany). Dr. Dimmeler is the author of more than 300 peer-reviewed papers, published in highly qualified journals. She is among the top 1 percent Thomson Reuters Highly Cited Researcher and her h-index is 115. She has been invited to speak at more than 300 meetings and has presented various keynote lectures. She has received more than 17 awards, including the Frankel-Award of the German Cardiac Society, the Alfred Krupp Award and the Leibniz Award, and the Award of the Jung Foundation. She also presented the prestigious George E. Brown Memorial Lecture at the American Heart Association’s Scientific Sessions, the Thomas W. Smith Memorial Lecture in 2015, the Michael Oliver Memorial Lecture at the BAS Autumn Meeting in 2016, and the Paul Dudley White International Lecture at the AHA Scientific Sessions. She received two ERC Advanced Investigator Grants. Dr. Dimmeler has been the chief editor of EMBO Molecular Medicine and associate editor of the European Heart Journal. Currently, she is associate editor of Circulation Research. Her group elucidates the basic mechanisms underlying cardiovascular disease and vessel growth with the aim to develop new cellular and pharmacological therapies for improving the treatment of cardiovascular disease. Ongoing research focuses on epigenetic mechanisms that control cardiovascular repair, specifically non-coding RNAs.

Dr. Dimmeler will lecture on Cellular Heterogeneity and Plasticity in Cardiovascular Disease.
Conference Highlights – Early Career and Ticketed Events

Outstanding Early Career Investigator Award Finalists’ Presentations
The three finalists will present their abstracts at 9:15 AM Wednesday. The winner will be announced Wednesday evening during the Basic Cardiovascular Sciences Council Dinner. Refer to pages 16–17 for more information on award finalists.

Early Career Pre-Conference Sessions
Join us on Monday in Texas Ballroom C for these sessions targeted for Early Career attendees:

9:45–10:00 AM
Early Career Pre-Conference Session: Welcome Address

10:00–11:15 AM
Early Career Pre-Conference Session 1: “Next Best Thing” in Cardiovascular Research
Oral Abstract Presentations

11:20–11:50 AM
Early Career Pre-Conference Session 2 Featured Presentation: Common Career Hurdles and How to Clear Them, Sakthivel Sadayappan, PhD, MBA, University of Cincinnati College of Medicine, Cincinnati, Ohio.

Early Career Investigator Social Event will be at 7:00 PM Tuesday, in Republic A/B/C. All early career investigators are welcome to attend.

Women in Science Breakfast
The 3rd annual Women in Science Networking Breakfast will begin at 7:00 AM Tuesday in Republic A/B/C, located on the 4th floor of the hotel. This is an informal networking breakfast for women in all phases of their careers. Ticket required to attend.

Council on Basic Cardiovascular Sciences Dinner
Please join us for food, drinks and a special presentation at the BCVS Council Dinner on Wednesday, August 1, in Texas Ballroom A/B. Beth Anderson, CEO and co-founder of Arkitek Scientific, will provide a special presentation on The Intersection of Art and Science – Conveying Complex Medical Concepts Requires Both. Though art and science have been inextricably intertwined throughout human history, the twentieth century marked a puzzling distancing of the two. This separation has created uneven access to scientific principles and concepts. Many people grapple with ever increasing complexity in their daily lives, yet lack or distrust basic science that would help inform them about themselves, their surroundings and the future.

Given that over one third of the brain is tasked with processing and understanding visual input, it’s not a mystery why computer graphics are being used more and more to help people understand the sciences. This talk focuses on those advances being made in 3D, VR and AR, as well as a discussion on what may be one of the initial moments when art and science began to drift apart.

Tickets, if available, may be purchased at the AHA Registration Desk ($60/member; $90/non-member; $50/student/trainee/early career member; $85/non-member for conference registrants and their guests).
Conference Highlights – Awards

The American Heart Association Council on Basic Cardiovascular Sciences provides educational programs, awards/scholarships, travel grants and mentoring opportunities that support the ongoing training and development of people in the early stages of their careers.

The council is pleased to announce the finalists and winners of the following awards:

**Outstanding Early Career Investigator Award Finalists**

The Outstanding Early Career Investigator Award finalists will present their abstracts during a special oral session scheduled on Wednesday, August 1, from 9:15-10:00 AM. The winner will be announced at the Council Dinner that evening.

<table>
<thead>
<tr>
<th>Name/Institution</th>
<th>Abstract Number</th>
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<tbody>
<tr>
<td>Lisandra E. de Castro Brás, East Carolina University</td>
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<tr>
<td>Cristi L. Galindo, Vanderbilt University</td>
<td>114</td>
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<tr>
<td>Manuel Rosa-Garrido, University of California, Los Angeles</td>
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**Cardiovascular Outreach Award Recipients**

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<thead>
<tr>
<th>Name/Institution</th>
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<tbody>
<tr>
<td>Jean Chrisostome Bopassa, UT Health Science Center, San Antonio</td>
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<tr>
<td>Juliana de F. Germano, Smidt Heart Institute, Cedars-Sinai Medical Center</td>
<td>398</td>
</tr>
<tr>
<td>Nicole Fleming, University of North Carolina at Chapel Hill</td>
<td>583</td>
</tr>
<tr>
<td>Christian Garcia, Columbia University Medical Center</td>
<td>537</td>
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<tr>
<td>Maribel Marquez, Medical College of Wisconsin</td>
<td>378</td>
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<tr>
<td>Karla Maria Pires, University of Utah</td>
<td>100</td>
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<tr>
<td>Alessandro Salerno, University of Miami</td>
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<tr>
<td>Amarylis Wanschel, University of Miami</td>
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**New Investigator Travel Award Recipients**

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<thead>
<tr>
<th>Name/Institution</th>
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<tbody>
<tr>
<td>Chowdhury Abdullah, Louisiana State University Health Sciences Center-Shreveport</td>
<td>406</td>
</tr>
<tr>
<td>Karima Ait-Aissa, Medical College of Wisconsin</td>
<td>247</td>
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<tr>
<td>Shaiful Alam, Louisiana State University Health Sciences Center-Shreveport</td>
<td>408</td>
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<tr>
<td>Shinmin An, Fuwai Hospital, National Center for Cardiovascular Diseases, Chinese Academy of Medical Sciences and Peking Union Medical College</td>
<td>260</td>
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<tr>
<td>Gaelle Auguste, University of Texas Health Science Center at Houston</td>
<td>232</td>
</tr>
<tr>
<td>Temo Barwari, King’s College London</td>
<td>300</td>
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<tr>
<td>Erik Blackwood, San Diego State University</td>
<td>547</td>
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<tr>
<td>Manoja Brahma, University of Alabama at Birmingham</td>
<td>274</td>
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<tr>
<td>Kathleen Broughton, San Diego State University</td>
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<tr>
<td>Katelyn Bruno, Mayo Clinic</td>
<td>386</td>
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<tr>
<td>Jun Cao, University of Texas Medical Branch</td>
<td>435</td>
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<tr>
<td>Nolan Carew, University of Pittsburgh</td>
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<td>Congwu Chi, University of Colorado Anschutz</td>
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<td>Rajeshwary Ghosh, University of South Dakota</td>
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<td>Shuchu Guo, Temple University</td>
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<tr>
<td>Qingxun Hu, University of Washington</td>
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<tr>
<td>Oleg Karaduta, University of Arkansas for Medical Sciences</td>
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<tr>
<td>Jonathan Lambert, Temple University</td>
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<tr>
<td>Edward Lau, Stanford University</td>
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<tr>
<td>Chi Fung Lee, University of Washington</td>
<td>413</td>
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<tr>
<td>Jaecheol Lee, Stanford University</td>
<td>111</td>
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<tr>
<td>James McNamara, University of Cincinnati</td>
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<tr>
<td>Guodong Pan, Henry Ford Health System</td>
<td>500</td>
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<tr>
<td>Jessica Pfleger, Temple University</td>
<td>109</td>
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<tr>
<td>Honit Piplani, Cedars-Sinai Medical Center</td>
<td>529</td>
</tr>
<tr>
<td>Devasena Ponnapalu, Drexel University College of Medicine</td>
<td>292</td>
</tr>
<tr>
<td>Inna Rabinovich-Nikitin, St. Boniface Research Centre</td>
<td>488</td>
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<tr>
<td>Stephen Rego, Wake Forest School of Medicine</td>
<td>501</td>
</tr>
<tr>
<td>Julia Ritterhoff, University of Washington</td>
<td>543</td>
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<tr>
<td>Jennifer Schwanekamp, University of Cincinnati</td>
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<tr>
<td>Vipul Sharma, Washington University School of Medicine</td>
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Policy Information

Disclaimer
The Basic Cardiovascular Sciences Scientific Sessions 2018 is a scientific and educational conference for exchanging and discussing research results and scientific developments in the field of cardiovascular disease. Accordingly, the American Heart Association cannot and does not offer any assurance or warranty of the accuracy, truthfulness or originality of the information presented at the conference.

Embargo Guidelines
Abstracts, lectures and presentations in BCVS 2018 are embargoed for release at the time of presentation. Information may not be released before the scheduled presentation time.

Photography/Recording Policy
No person may record any portion of the AHA Scientific Sessions, scientific conferences and the AHAVA International Stroke Conference, whether by video, still or digital photography; audio; or any other recording or reproduction mechanism. This includes recording of presentations and supporting A/V materials and of poster presentations and supporting poster materials.

Additionally, science information shared by investigators during a meeting is confidential and often unpublished data. Taking photos of or recording the content of meeting room slides is also prohibited and considered intellectual piracy and unethical. Attendees who ignore this policy will be asked to leave the educational session and are at risk of losing their badge credentials.

The American Heart Association will take photographs and video during its conferences and may display, reproduce and/or distribute them in AHA educational, news or promotional materials, whether in print, electronic or other media, including the AHA website. Your registration for an AHA conference is your grant to the AHA the right to use your name, image and biography for such purposes as well as any other purpose. All photographs and/or videos become the property of the AHA.

No Smoking Policy
AHA policy prohibits smoking in conference meeting rooms and exhibits/registration areas. Thank you for your cooperation.

Seating/Badge Requirement
Seating is on a first-come, first-served basis. According to fire code, a session must be closed if the room fills to capacity. You must wear your name badge at all times during the symposium. Nonregistered guests may not be permitted into the sessions or food and beverage events. Be sure to remove your badge when you leave the conference or your hotel room.

The American Heart Association reserves the right to revoke or deny attendance to any registered participant, speaker, exhibitor, news media reporter or photographer of presentations or activities at AHAVA scientific conferences and meetings.

Americans with Disabilities Act (ADA)
We encourage participation by all individuals. If you have a disability, advance notification of any special needs will help us to serve you better. Please indicate what your needs are at the time of registration. We cannot ensure the availability of appropriate accommodations without prior notification.

Please note: The American Heart Association shall not be liable for cancellation of the BCVS 2018 Scientific Sessions caused by labor strikes, civil disorders, fires, weather conditions, or other acts of God for any damages or losses resulting from such cancellations.
<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
<th>Presentation Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:00 AM</td>
<td>Registration/Exhibits Open</td>
<td>Texas Ballroom Foyer</td>
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<tr>
<td>9:45 AM</td>
<td>Early Career Pre-Conference Session: Welcome Address</td>
<td>Texas Ballroom C</td>
<td>Nicole H. Purcell, PhD, University of California San Diego, La Jolla, California, Sean Wu, PhD, Stanford University, Stanford, California</td>
</tr>
<tr>
<td>10:00-11:15 AM</td>
<td>Early Career Pre-Conference Session 1</td>
<td>Texas Ballroom C</td>
<td>&quot;Next Best Thing&quot; in Cardiovascular Research</td>
</tr>
<tr>
<td>10:00</td>
<td>Targeting the NAD/NADH Ratio for Heart Failure Therapy</td>
<td></td>
<td>Matthew A. Walker, Univ of Washington, North Bend, WA; Outi Villet, Rong Tian, Univ of Washington, Seattle, WA</td>
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<td>10:15</td>
<td>Cytosolic RBFox1 in Cardiac Pathological Remodeling</td>
<td></td>
<td>Chen Gao, Yun-Hua (Esther) Hsiao, Menglong Wang, Zhaojun Xiong, Shuxun Ren, Christoph D. Rau, Katelyn Li, Xinshu (Grace) Xiao, Yibin Wang, Yi Xing, UCLA-Los Angeles, Los Angeles, CA</td>
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<td>10:30</td>
<td>A Lack in Endogenous Proteasome Regulation Provokes Exacerbated Cardiac Remodeling and Premature Heart Failure Following Catecholamine Challenge</td>
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<td>Felix A. Trogisch, Franziska Koser, Dept of Cardiovascular Physiology, Heidelberg Univ, Heidelberg, Germany; Andreas Jungmann, Dept of Internal Med III, Univ Medical Ctr Heidelberg, Heidelberg, Germany; Oliver J. Müller, Dept of Internal Med III, Univ Medical Ctr Kiel, Kiel, Germany; Markus Hecker, Dept of Cardiovascular Physiology, Heidelberg Univ, Heidelberg, Germany; Oliver Drews, DZHk (German Ctr for Cardiovascular Res), partner site Heidelberg/Mannheim, Germany</td>
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<tr>
<td>10:45</td>
<td>Evaluation of Patient Specific MTERF4 Variants in Gene Edited Human iPSC-derived Cardiomyocytes</td>
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<td>Maribel Marquez, Medical Coll of Wisconsin, Milwaukee, WI; Chris McDermott-Roe, Univ of Pennsylvania, Philadelphia, PA; Mike Grzybowski, Daniel Helbling, Medical Coll of Wisconsin, Milwaukee, WI; David P. Dimmock, Rady Children's Inst for Genomic Med, San Diego, CA; James W. Verbsky, Aron M. Geurts, Medical Coll of Wisconsin, Milwaukee, WI</td>
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<tr>
<td>11:00</td>
<td>A Microrna-hippo Pathway Functions in Cardiac Conduction System Homeostasis and Regeneration</td>
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<td>Jun Wang, Baylor Coll of Med, Houston, TX</td>
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<tr>
<td>11:15-11:50 AM</td>
<td>Early Career Pre-Conference Session 2</td>
<td></td>
<td>Maegen Ackerman, PhD, Ohio State University, Columbus, Ohio</td>
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<tr>
<td>11:50</td>
<td>Common Career Hurdles and How to Clear Them</td>
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<td>Sakthivel Sadayappan, PhD, MBA, University of Cincinnati College of Medicine, Cincinnati, Ohio</td>
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<tr>
<td>12:35–1:00 PM</td>
<td>BCVS 2018 Scientific Sessions: Opening Welcome</td>
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<td>Ivor J. Benjamin, MD, FACC, FAHA, Medical College of Wisconsin, Milwaukee, Wisconsin and President, American Heart Association</td>
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<td></td>
<td>Joseph C. Wu, MD, PhD, FAHA, Stanford University School of Medicine, Stanford, California</td>
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</table>
Program Agenda (continued)

1:00–2:35 PM
Texas Ballroom A/B
Concurrent Session 1A
Cardiac Fibrosis – Changing the Landscape

Moderators:
Burns Blaxall, PhD, FAHA, Cincinnati Children's Hospital, Cincinnati, Ohio
Jennifer Davis, PhD, University of Washington, Seattle, Washington

1:00 Novel Fibroblast Functional States in the MI Heart
Jeffrey D. Molkentin, PhD, Children's Hospital Medical Center, Cincinnati, Ohio

1:20 Collagen and Fibrosis: Assembly Required
Amy Bradshaw, PhD, Medical University of South Carolina, Charleston, South Carolina

1:40 Resident Fibroblasts as a Therapeutic Target in Cardiac Remodeling
Taben M. Hale, PhD, University of Arizona, Phoenix, Arizona

2:00 Epigenetic Regulation of Cardiac Fibrosis
Timothy A. McKinsey, PhD, University of Colorado, Aurora, Colorado

Oral Abstract Presentation
2:20 PRDM16 is a Novel Regulator of Cardiac Hypertrophy, Remodeling and Mitochondrial Dynamics
Karla Maria Pires, Sihem Boudina, Univ of Utah, Salt Lake Cty, UT

1:00–2:35 PM
Texas Ballroom C
Concurrent Session 1B
The On and Off of Redox

Moderators:
Brian O'Rourke, PhD, Johns Hopkins University, Baltimore, Maryland
Edward Lau, PhD, Stanford University, Palo Alto, California

1:00 Cardiovascular Adaptation to Hypoxia and Redox Stress
Joseph Loscalzo, MD, PhD, FAHA, Harvard Medical School, Boston, Massachusetts

1:20 Nitric Oxide and Cardioprotection
Elizabeth (Tish) Murphy, PhD, FAHA, NHLBI, Bethesda, Maryland

1:40 New Aspects of NO-based Cellular Signaling
Jonathan S. Stamler, MD, FAHA, Case Western Reserve University, Cleveland, Ohio

2:00 New Hope for Measuring and Targeting Redox Dysregulation in Cardiovascular Disease
Gemma Figtree, MBBS, PhD, Kolling Institute, University of Sydney, St. Leonards, Australia

Oral Abstract Presentation
2:20 Endothelial Amt Regulates Microvascular Endothelial Barrier Function in Heart Failure Through a Novel Mmp3 Pathway
Mei Zheng, Maura Knapp, Jorge Andrade, Anna Cheng, Nikola Sladojevic, University of Chicago, Chicago, IL; Konstantin G. Birukov, Univ of Maryland, Maryland, IL; Qiong Zhao, Inova Heart and Vascular Inst, Falls Church, VA; James K. liao, Rongxue (Rosie) Wu, Univeristy of Chicago, Chicago, IL

2:35–3:05 PM
Texas Ballroom Foyer
Refreshment Break/Exhibits

3:05–4:40 PM
Texas Ballroom A/B
Concurrent Session 2A
Signaling Networks in Cardiac Myocyte

Moderators:
Maria Kontaridis, PhD, FAHA, Beth Israel Deaconess Medical Center, Boston, Massachusetts
James F. Martin, MD, PhD, Baylor College of Medicine, Houston, Texas

3:05 Proteostasis Signaling in Heart Disease
Chris C. Glembotski, PhD, San Diego State University, San Diego, California

3:25 The Role of Co-chaperone BAG3 in Cardiomyocytes
Ju Chen, PhD, University of California San Diego, La Jolla, California

3:45 Mitochondrial OPTM in Heart Failure
Peipei Ping, PhD, FAHA, David Geffen School of Medicine at UCLA, Los Angeles, California

4:05 The Role of FGF23 in Uremic Cardiomyopathy
Christian Faul, PhD, The University of Alabama at Birmingham, Birmingham, Alabama

Oral Abstract Presentation
4:25 An Internal Pool of b-Adrenergic Receptors Activates PLC-mediated PI4P Hydrolysis in Cardiac Myocytes
Alan V. Smrcka, Craig A Nash, Wenhui Wei, Univ of Michigan Sch of Med, Ann Arbor, MI
Program Agenda (continued)

3:05–4:40 PM
Texas Ballroom C
Concurrent Session 2B
Mitochondrion and Heart Failure

Moderators:
Roberta A. Gottleib, MD, Cedars-Sinai Medical Center, Los Angeles, California
Adam R. Wende, PhD, The University of Alabama at Birmingham, Birmingham, Alabama

3:05 Non-canonical Mitophagy in the Heart
Asa Gustafsson, PhD, FAHA, University of California San Diego, La Jolla, California

3:25 Role of Mitochondrial Calcium and Redox Regulation in Heart Failure
Christoph Maack, MD, University Clinic Würzburg, Wurtzberg, Germany

3:45 Molecular Regulation of Mitochondrial Calcium Uptake
John W. Elrod, PhD, Temple University, Philadelphia, Pennsylvania

4:05 Targeting Cellular Aging for the Treatment of Cardiovascular Diseases
Tohru Minamino, MD, PhD, FAHA, Niigata University Graduate School of Medical and Dental Sciences, Niigata, Japan

Oral Abstract Presentation

4:25 Cytochrome b5 Reductase 3 Regulates Myoglobin Redox State and Controls Cardiac Function
Nolan Thorne Carew, Helene M. Altmann, Joseph C. Galley, Scott Hahn, Megan P. Miller, Sruti Shiva, Dennis McNamara, Adam C. Straub, Univ of Pittsburgh, Pittsburgh, PA

4:40– 7:00 PM
Texas Ballroom D/E/F
Poster Session 1 and Reception

TUESDAY, JULY 31

7:00 AM
Registration
Texas Ballroom Foyer

7:00–8:00 AM
Continental Breakfast/Exhibits
Texas Ballroom Foyer

7:00–8:00 AM
Women in Science Breakfast
Republic A/B/C
Ticket Required to Attend

8:00–9:15 AM
Texas Ballroom A/B
Concurrent Session 3A
Emerging Cardiac Therapeutic Strategies

Moderators:
Susmita Sahoo, PhD, Mount Sinai School of Medicine, New York, New York
Kristin I. Stanford, PhD, Ohio State University, Columbus, Ohio

8:00 Gene Therapy & Genome Editing in Cardiomyopathies
Roger Hajjar, MD, Mount Sinai School of Medicine, New York, New York

8:20 Myosin Myopathies: Pathogenesis and Potential Therapeutics
Leslie Leinwand, PhD, University of Colorado, Boulder, Colorado

8:40 Cardiac Regeneration by Stimulating Endogenous Cardiomyocyte Proliferation
Mauro Giaccia, MD, PhD, International Centre for Genetic Engineering and Biotechnology, Trieste, Italy

Oral Abstract Presentation

9:00 AAV-Exosomes: A Novel Platform for Myocardial Gene Delivery for Cardioprotection
Marta Adamiak, Yaxuan Liang, Prabhu Mathiyalan, Neha Agarwal, Erik Kohlbrenner, Divya Jha, Elena Chepurko, Dongtak Jeong, Delaine Ceholski, Nicole Dubois, Roger Hajjar, Susmita Sahoo, Icahn Sch of Med at Mount Sinai, New York, NY

8:00–9:15 AM
Texas Ballroom C
Concurrent Session 3B
Excitation-Contruction Coupling

Moderators:
Donald M. Bers, PhD, FAHA, University of California at Davis, Davis, California
Julia Ritterhoff, PhD, University of Washington, Seattle, Washington

8:00 Elucidating the Molecular Mechanisms for Increased Contractility in the “Fight or Flight” Response
Livia Hool, PhD, University of Western Australia, Crawley, Australia

8:20 Preconception Exposure to Air Pollution Alters Adult Excitation-Contruction Coupling
Loren E. Wold, PhD, FAHA, Ohio State University, Columbus, Ohio

8:40 Novel Roles of Junctophilin in Heart Disease Pathogenesis
Xander Wehrens, MD, PhD, FAHA, Baylor College of Medicine, Houston, Texas
Oral Abstract Presentation

9:00  Tuning EC-Coupling: β-Adrenergic Receptor Activation Stimulates Dynamic Augmentation of CaV1.2 Channel Sarcolemmal Abundance and Cooperativity
Danica W. Ito, Karen I Hannigan, Luis F. Santana, Rose E. Dixon, Univ of California Davis, Davis, CA

9:15–9:45 AM  
Texas Ballroom Foyer  
Refreshment Break/Exhibits

9:45–11:00 AM  
Texas Ballroom A/B  
Concurrent Session 4A  
Transcriptional Regulation and Epigenetics
Moderators:  
Sarah Franklin, PhD, University of Utah, Salt Lake City, Utah  
Lilei Zhang, MD, Baylor College of Medicine, Houston, Texas

9:45  Cardiac all-trans Retinoic Acid Deficiency is an Early Feature of Heart Failure Progression  
D. Brian Foster, PhD, Johns Hopkins School of Medicine, Baltimore, Maryland

10:05  Transcriptional Regulation of Heart Development and Regeneration  
Enzo R. Porello, PhD, Murdoch Children’s Research Institute, Parkville, Australia

10:25  Chromatin Structure in Heart Failure  
Tom M. Vondriska, PhD, FAHA, University of California Los Angeles, Los Angeles, California

Oral Abstract Presentation

10:45  Identifying Cardiac Conduction System-specific Enhancers That Link Cell-type Specification with Human Conduction Defects  
Samadrita Bhattacharya, Minoti Bhakta, Lin Wang, Nikhil V. Munshi, UT Southwestern Medical Ctr, Dallas, TX

9:45–11:00 AM  
Texas Ballroom C  
Concurrent Session 4B  
How to Build a New Heart One Cell at a Time
Moderators:  
Joshua Hare, MD, FAHA, University of Miami, Miami, Florida  
Masaki Leda, MD, PhD, Keio University School of Medicine, Tokyo, Japan

9:45  Myocardial Tissue Engineering with Cells Derived from Human Induced-pluripotent Stem Cells and a Native-like, High-resolution, 3D Printed Scaffold  
Jianyi (Jay) Zhang, MD, PhD, FAHA, The University of Alabama at Birmingham, Birmingham, Alabama

10:05  Deconstructing Regenerative Medicine: Beyond Cells to Exosomes and Defined Factors  
Ahmed G. Ibrahim, PhD, MPH, Cedars-Sinai Medical Center, Los Angeles, California

10:25  The Transcriptional Landscape of Cardiac Differentiation at Single Cell Resolution  
Nathan Palpant, PhD, University of Queensland Institute for Molecular Bioscience, St. Lucia, Queensland, Australia

Oral Abstract Presentation

10:45  The Mevalonate Pathway Controls Cardiomyocyte Proliferation  
James E. Hudson, The Univ of Queensland, Brisbane, Australia

11:00 AM–Noon  
Texas Ballroom A/B  
General Session 5  
Keynote Lecture
Moderator:  
Ronglih Liao, PhD, FAHA, Stanford University, Stanford, California  
Joseph C. Wu, MD, PhD, FAHA, Stanford University, Stanford, California

11:00  Cellular Heterogeneity and Plasticity in Cardiovascular Disease  
Stefanie Dimmeler, PhD, Institute of Cardiovascular Regeneration, Goethe University, Frankfurt, Germany
Program Agenda (continued)

12:00–1:30 PM
Republic A/B/C
Early Career Luncheon:
Speed Networking/Mentoring Round Tables
Ticket required to attend

Moderator:
Sarah M. Schumacher, PhD, Cleveland Clinic,
Cleveland, Ohio

Featured Presentation:
The Importance of Mentoring
Merry L. Lindsey, PhD, FAHA, University of Mississippi
Medical Center, Jackson, Mississippi

Speed Networking Mentors
Burns Blaxall, PhD, FAHA, Cincinnati Children’s Hospital,
Cincinnati, Ohio
Joan Heller Brown, PhD, University of California,
San Diego, La Jolla, California
Chris Glombotski, PhD, San Diego State University,
San Diego, California
Asa Gustafsson, PhD, FAHA, University of California,
San Diego, La Jolla, California
Joshua Hare, MD, FAHA, University of Miami, Miami, Florida
Joseph Hill, MD, PhD, FAHA, UT Southwestern
Medical School, Dallas, Texas
Steven House, PhD, FAHA, Temple University,
Philadelphia, Pennsylvania
Lorrie Kirshenbaum, PhD, University of Manitoba,
Winnipeg, Manitoba, Canada
Maria Kontaridis, PhD, FAHA, Beth Israel Deaconess
Medical Center, Boston, Massachusetts
Leslie Leinwand, PhD, University of Colorado,
Boulder, Colorado
Ronglih Liao, PhD, FAHA, Stanford University School
of Medicine, Stanford, California
Merry Lindsey, PhD, FAHA, University of Mississippi
Medical Center, Jackson, Mississippi
Donald Menick, PhD, Medical University of South Carolina,
Charleston, South Carolina
Jeffery Molkentin, PhD, Children’s Hospital Medical Center,
Cincinnati, Ohio
Susan Steinberg, MD, FAHA, Columbia University
Medical Center, New York, New York
Mark Sussman, PhD, FAHA, San Diego State University,
San Diego, California
Jil Tardiff, MD PhD, FAHA, University of Arizona,
Tucson, Arizona
Rong Tian, MD, PhD, FAHA, University of Washington,
Seattle, Washington
Jennifer Van Eyk, PhD, FAHA, Cedars-Sinai Medical Center,
Los Angeles, California
Thomas Vondruska, PhD, FAHA, University of California,
Los Angeles, Los Angeles, California
Joseph Wu, MD, PhD, FAHA, Stanford University
School of Medicine, Stanford, California
Jianyi Zhang, MD, PhD, FAHA, University of Alabama
at Birmingham, Birmingham, Alabama

Or
Lunch On Your Own/Poster Viewing/Exhibits

1:30–2:45 PM
Texas Ballroom A/B
Concurrent Session 6A
Ion Channels and Arrhythmias

Moderators:
Geoffrey S. Pitt, MD, PhD, Weill Cornell Medical
College, New York, New York
Henry M. Sucov, PhD, University of Southern
California at Los Angeles, California

1:30 CaMKII-dependent Regulation of Nav1.5, Late
Sodium Current and Arrhythmias
Thomas Hund, PhD, Ohio State University,
Columbus, Ohio

1:50 The Importance of Sodium-Calcium Exchange in
Automaticity and Arrhythmia
Joshua I. Goldhaber, MD, Cedars-Sinai Medical
Center, Los Angeles, California

2:10 Identification of an ATP-sensitive Potassium
Channel in the Inner Mitochondrial Membrane
Diego De Stefani, PhD, University of Padova,
Padova, Italy

Oral Abstract Presentation

2:30 Molecular and Electrophysiologic
Characterization of Obesity Mediated
Atrial Fibrillation in Mc4r-KO Mice
Ambili Menon, Mark McCauley, Liang Hong,
Arvind Sridhar, Srikanth Perike, Mei Hong
Zhang, Erin Lambers, Dawood Darbar, Univ
of Illinois at Chicago, Chicago, IL

1:30–2:45 PM
Texas Ballroom C
Concurrent Session 6B
The Resurgence of Cardiac Metabolism

Moderators:
Gary D. Lopaschuk, PhD, University of Alberta,
Edmonton, Alberta, Canada
Anja Karlstaedt, MD, PhD, McGovern Medical
School at UT Health, Houston, Texas

1:30 Novel Players in Mitophagy
Zoltan P. Arany, MD, PhD, University of Pennsylvania,
Philadelphia, Pennsylvania

1:50 Feeding the Starving Failing Heart
Daniel P. Kelly, MD, University of Pennsylvania,
Philadelphia, Pennsylvania

2:10 Metabolism and Myocardial Autopoiesis
Bradford G. Hill, PhD, University of Louisville,
Louisville, Kentucky
Oral Abstract Presentation

2:30  **Protein-coupled Receptor Kinase 2 Impairs Fatty Acid Metabolism in the Failing Heart Through Novel Mechanisms**  Jessica M. Pfleger, Polina Gross, Jaslyn Johnson, Erhe Gao, Steven R. Houser, Walter J. Koch, Temple Univ, Philadelphia, PA

2:45–3:15 PM
Texas Ballroom Foyer
Refreshment Break/Exhibits

3:15–4:30 PM
Texas Ballroom A/B
Concurrent Session 7A
Functional Genomics and Pathogenicity Assessment

**Moderators:**
Yibin Wang, PhD, FAHA, University of California at Los Angeles David Geffen School of Medicine, Los Angeles, California
Allen Andres, PhD, Cedars-Sinai Medical Center, Los Angeles, California

3:15  **Systematic Approaches to Gene-disease and Variant-disease Association**  Quinn S. Wells, MD, Vanderbilt University Medical Center, Nashville, Tennessee

3:35  **Genetic Mechanisms in Cardiomyopathy**  Elizabeth (Beth) McNally, MD, PhD, Northwestern University, Chicago, Illinois

3:55  **Functional Annotation of Variants of Uncertain Significance in Cardiovascular Disease Genes**  Kiran Musunuru, MD, PhD, University of Pennsylvania, Philadelphia, Pennsylvania

Oral Abstract Presentation

4:15  **Numb Family Proteins Modulate Cardiac Morphogenesis by Regulating N-cadherin Trafficking to Plasma Membrane**  Mingfu Wu, Albany Medical Coll, Albany, NY

4:30– 7:00 PM
Texas Ballroom D/E/F
Poster Session 2 and Reception

**WEDNESDAY, AUGUST 1**

7:00 AM
Registration
Texas Ballroom Foyer

7:00–8:00 AM
Continental Breakfast/Exhibits
Texas Ballroom Foyer

8:00–9:15 AM
Texas Ballroom A/B
Concurrent Session 8A
Personalized Cell Models of Cardiovascular Disease

**Moderators:**
Haodong Xu, MD, University of Washington, Seattle, Washington
TBD

8:00  **Stem Cells and Genomics for Precision Medicine**  Joseph C. Wu, MD, PhD, FAHA, Stanford University, Stanford, California

8:20  **Incorporating the Person in Personalized Cell Models**  Jennifer L. Strande, MD, Medical College of Wisconsin, Milwaukee, Wisconsin

8:40  **Advances in Using iPSCs for Arrhythmia Modeling**  Lior Gepstein, MD, PhD, Technion, Haifa, Israel

**Next year’s conference:** July 29–August 1, 2019. Visit professional.heart.org/bcvssessions for more information.
Oral Abstract Presentation

9:00  Dysregulation of Pdgfrb Contributes to the Pathogenesis of LMNA-related Dilated Cardiomyopathy
      Jaecheol Lee, Vittavat Termglinchan, Cardiovascular Inst, Stanford Univ, Stanford, CA; Sebastian Diecke, Berlin Inst of Health, Berlin, Berlin, Germany; Chi Keung Lam, Priyanka Garg, Ilanit Itzhaki, Joe Z. Zhang, Cardiovascular Inst, Stanford Univ, Stanford, CA; Xingqi Chen, 7Ctr for Personal Dynamic Regulomes, Stanford, CA; Timon Seeger, Mohamed Ameen, Karim Sallam, Jared Churko, Edward Lau, Tony Chour, Cardiovascular Inst, Stanford Univ, Stanford, CA; Paul J. Wang, Dept of Med, Div of Cardiovascular Med, Stanford Univ, Stanford, CA; Michael P. Snyder, Dept of Genetics, Stanford Univ., Stanford, CA; Howard Y. Chang, Ctr for Personal Dynamic Regulomes, Stanford Univ, Stanford, CA; Ioannis Karakikes, Dept of Cardiothoracic Surgery, Stanford Univ Sch of Med, Stanford Univ, Stanford, CA; Joseph C. Wu, Cardiovascular Inst, Stanford Univ, Stanford, CA

8:00–9:15 AM
Texas Ballroom C
Concurrent Session 8B
Getting the Message – New Ways to Think About RNA

Moderators:
Sean M. Wu, Stanford University, Stanford, California
Shijun Hu, PhD, Soochow University, Suzhou, China

8:00  Circular RNA. What They Do, and Other RNA Species
      Roger S. Foo, MD, PhD, University of Singapore, Singapore

8:20  miRNA-based Therapy of Myocardial Disease
      Stefan Engelhardt, MD, PhD, TU Munich, Munich, Germany

8:40  Single Cell Transcriptomics to Study Cardiomyocyte Cell Fate Control
      Li Qian, PhD, University of North Carolina, Chapel Hill, North Carolina

Oral Abstract Presentation

9:00  Doxorubicin Alters Cardiac Fibroblast Phenotype
      Trevi R. Mancilla, Gregory J. Aune, UT Health San Antonio, San Antonio, TX
**Program Agenda (continued)**

<table>
<thead>
<tr>
<th>Time</th>
<th>Session 10B</th>
<th>Concurrent Session 11A</th>
<th>Concurrent Session 11B</th>
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<tbody>
<tr>
<td>10:30–11:45 AM</td>
<td><strong>Texas Ballroom C</strong></td>
<td><strong>Texas Ballroom A/B</strong></td>
<td><strong>Texas Ballroom C</strong></td>
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<tr>
<td>Concurrent Session 10B</td>
<td><strong>Workshop 2 – Towards Single Cell Analysis</strong></td>
<td><strong>The Architecture of Contraction</strong></td>
<td><strong>Cell Death and Cardiomyopathy</strong></td>
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<tr>
<td><strong>Moderators:</strong></td>
<td>Liming Pei, PhD, Children’s Hospital of Philadelphia, Philadelphia, Pennsylvania</td>
<td>Farid Moussavi-Harami, MD, University of Washington, Seattle, Washington</td>
<td>Richard N. Kitsis, MD, FAHA, Albert Einstein College of Medicine, Bronx, New York</td>
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<td>Dan Shao, PhD, University of Washington, Seattle, Washington</td>
<td>Michael Greenberg, PhD, Washington University, St. Louis, Missouri</td>
<td>Ashley J. Smuder, PhD, University of South Carolina, Columbia, South Carolina</td>
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<td>10:30</td>
<td>2D Mapping of Cardiac Fibrosis using MALDI Imaging Mass Spectrometry</td>
<td><strong>The Role of Allostery in the Pathogenesis of Scaromeric Cardiomyopathies: New Mechanisms and Targets</strong></td>
<td><strong>Molecular Mechanisms of Cell Survival by FoxO1</strong></td>
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<td>Peggi Angel, PhD, Medical University of South Carolina, Charleston, South Carolina</td>
<td>Jil Tardiff, MD, PhD, FAHA, University of Arizona, Tucson, Arizona</td>
<td>Yun Chen, Jaehoon Lee, Min Zheng, Victor Paulino, Albert Einstein Coll of Med, Bronx, NY; Christian Garcia, Columbia Univ Medical Ctr, New York, NY; Julio Madrigal Matute, Albert Einstein Coll of Med, Bronx, NY; Hong Li, Rutgers, The State Univ of New Jersey, Newark, NJ; Nina Kaludercic, Univ of Padova, Padova, Italy; Edward Owusu-Ansah, Columbia Univ Medical Ctr, New York, NY; Ana Maria Cuervo, Richard N. Kitsis, Albert Einstein Coll of Med, Bronx, NY</td>
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<td>10:48</td>
<td>Proteomics of a Single Cell and Its Lineage in the Developing Frog Embryo using Ultrasensitive Mass Spectrometry</td>
<td><strong>Cosegregation of MYBPC3 325bp with MYBPC3 D389V is Associated with a Cardiomyopathic Substrate</strong></td>
<td><strong>Understanding Alzheimer’s Beyond the Brain</strong></td>
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<td>Aparna Baxi, University of Maryland, College Park, Maryland</td>
<td>Neil Kelleher, PhD, Northwestern University, Chicago, Illinois</td>
<td>Sakthivel Sadayappan, PhD, MBA, University of Cincinnati College of Medicine, Cincinnati, Ohio</td>
<td>Federica del Monte, MD, PhD, Medical University of South Carolina, Charleston, South Carolina</td>
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<td>11:07</td>
<td>Towards Metabolics of a Single Cell</td>
<td><strong>Regulation of Cardiac Cell Death and Autophagy in Cardiac Myocytes</strong></td>
<td><strong>Regulation of Cardiac Mitochondrial Function by Chaperone Mediated Autophagy</strong></td>
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<td>Baljit Ubhi, PhD, SCIEX, Redwood City, CA</td>
<td>Lorrie A. Kirshenbaum, PhD, University of Manitoba, Winnipeg, Manitoba, Canada</td>
<td>Yun Chen, Jaehoon Lee, Min Zheng, Victor Paulino, Albert Einstein Coll of Med, Bronx, NY; Christian Garcia, Columbia Univ Medical Ctr, New York, NY; Julio Madrigal Matute, Albert Einstein Coll of Med, Bronx, NY; Hong Li, Rutgers, The State Univ of New Jersey, Newark, NJ; Nina Kaludercic, Univ of Padova, Padova, Italy; Edward Owusu-Ansah, Columbia Univ Medical Ctr, New York, NY; Ana Maria Cuervo, Richard N. Kitsis, Albert Einstein Coll of Med, Bronx, NY</td>
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<td>11:26</td>
<td>Association of Apolipoprotein A1 Proteoforms and Inter-Individual Differences in HDL Efflux Capacity</td>
<td><strong>Regulation of Cardiac Mitochondrial Function by Chaperone Mediated Autophagy</strong></td>
<td><strong>Refresher Break/Exhibits</strong></td>
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<tr>
<td>11:45 AM–1:30 PM</td>
<td>Lunch on Your Own/Poster Viewing/Exhibits</td>
<td><strong>Oral Abstract Presentation</strong></td>
<td><strong>Oral Abstract Presentation</strong></td>
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<td>1:30–2:45 PM</td>
<td><strong>Texas Ballroom A/B</strong></td>
<td>2:30</td>
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<tr>
<td>Concurrent Session 11A</td>
<td><strong>The Architecture of Contraction</strong></td>
<td>Oral Abstract Presentation</td>
<td>Oral Abstract Presentation</td>
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<tr>
<td><strong>Moderators:</strong></td>
<td>Farid Moussavi-Harami, MD, University of Washington, Seattle, Washington</td>
<td>Yun Chen, Jaehoon Lee, Min Zheng, Victor Paulino, Albert Einstein Coll of Med, Bronx, NY; Christian Garcia, Columbia Univ Medical Ctr, New York, NY; Julio Madrigal Matute, Albert Einstein Coll of Med, Bronx, NY; Hong Li, Rutgers, The State Univ of New Jersey, Newark, NJ; Nina Kaludercic, Univ of Padova, Padova, Italy; Edward Owusu-Ansah, Columbia Univ Medical Ctr, New York, NY; Ana Maria Cuervo, Richard N. Kitsis, Albert Einstein Coll of Med, Bronx, NY</td>
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<td></td>
<td>Michael Greenberg, PhD, Washington University, St. Louis, Missouri</td>
<td><strong>Mybphi is a Novel Myofilament Component Implicated in Arrhythmia and Dilated Cardiomyopathy</strong></td>
<td><strong>Regulation of Cardiac Mitochondrial Function by Chaperone Mediated Autophagy</strong></td>
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<td>David Y. Barefield, Jordan J. Sell, Megan J. Puckelwartz, Lisa D. Wilsbacher, Northwestern Univ, Chicago, IL; Glenn I Fishman, New York Univ, New York, NY; Elizabeth M. McNally, Northwestern Univ, Chicago, IL</td>
<td>Yun Chen, Jaehoon Lee, Min Zheng, Victor Paulino, Albert Einstein Coll of Med, Bronx, NY; Christian Garcia, Columbia Univ Medical Ctr, New York, NY; Julio Madrigal Matute, Albert Einstein Coll of Med, Bronx, NY; Hong Li, Rutgers, The State Univ of New Jersey, Newark, NJ; Nina Kaludercic, Univ of Padova, Padova, Italy; Edward Owusu-Ansah, Columbia Univ Medical Ctr, New York, NY; Ana Maria Cuervo, Richard N. Kitsis, Albert Einstein Coll of Med, Bronx, NY</td>
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Next year’s conference: July 29–August 1, 2019. Visit professional.heart.org/bcvssessions for more information.
Program Agenda (continued)

3:15–4:30 PM
Texas Ballroom A/B
Concurrent Session 12A
Workshop 3 – Single and Multi-omics

Moderators:
Piu Yu (Maggie) Lam, PhD, University of Colorado, Denver, Colorado
Melanie Y. White, PhD, University of Sydney, Sydney, NSW, Australia

3:15  Top-down Proteomics in Cardiac Disease and Regeneration
Ying Ge, PhD, University of Wisconsin, Madison, Wisconsin

3:33  A Multi-omics Approach to Cardiovascular Disease
Manuel Mayr, MD, Kings College, London, United Kingdom

3:52  The Role of Protein Citrullination in Cardiovascular Disease
Justyna P. Fert-Bober, PhD, Cedars-Sinai Medical Center, Los Angeles, California

4:11  Quantitative Temporal Analysis of Protein Dynamics in Maladaptive Cardiac Remodeling
John R. Yates, III, PhD, The Scripps Research Institute, La Jolla, California

3:15–4:30 PM
Texas Ballroom C
Concurrent Session 12B
Cardiovascular Stress and Inflammation

Moderators:
Merry L. Lindsey, PhD, FAHA, University of Mississippi Medical Center, Jackson, Mississippi
Nikhil Munshi, MD, PhD, UT Southwestern Medical Center, Dallas, Texas

3:15  Macrophages and Interorgan Crosstalk in Cardiac Adaptation
Ichiro Manabe, MD, PhD, Chiba University Graduate School of Medicine, Chiba, Japan

3:35  HfPef: Epidemiology and Mechanisms
Joseph A. Hill, MD, PhD, FAHA, UT Southwestern Medical Center, Dallas, TX

3:55  Igniting the Flame of Inflammation Through Cardiomyocyte CaMKII
Joan Heller Brown, PhD, University of California San Diego, La Jolla, California

Oral Abstract Presentation

4:15  NLRP3 Inflammasome Mediates the Obesity-induced Pathogenesis of Atrial Fibrillation
Larry Scott Jr., Changqun Yao, Na Li, Baylor Coll of Med, Houston, TX

4:30–7:00 PM
Texas Ballroom D/E/F
Poster Session 3 and Reception

7:00–10:00 PM
Texas Ballroom A/C
BCVS Council Dinner
Ticket required to attend

Featured Presentation
The Intersection of Art and Science - Conveying Complex Medical Concepts Requires Both
Beth Anderson, Arkitek Scientific, Paso Robles, California

THURSDAY, AUGUST 2

7:00 AM
Registration
Texas Ballroom Foyer

7:00–8:00 AM
Continental Breakfast
Texas Ballroom Foyer

8:00–9:00 AM
Texas Ballroom A/B
General Session 13
Basic Science and Precision Medicine – The Interface

Moderators:
Frederica Accornero, PhD, The Ohio State University, Columbus, Ohio
Antje D. Ebert, PhD, Goettingen University, Goettingen, Germany

8:00  Big Data and Health
Michael P. Snyder, PhD, Stanford University, Stanford, California

8:20  Understanding Genetic Dilated Cardiomyopathy, One Mutation at a Time
Ioannis Karakikes, PhD, Stanford University, Palo Alto, California

8:40  Human iPSC as Tools for Guiding Patients Out of the Genetic Purgatory
Bjorn C. Knollmann, MD, PhD, Vanderbilt University, Nashville, Tennessee

9:00–9:30 AM
Texas Ballroom Foyer
Refreshment Break
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<th>Time</th>
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<tr>
<td>9:30 AM</td>
<td><strong>General Session 14</strong></td>
<td>Metabolic Pathways to Cardiovascular Disease</td>
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|         | **Moderators:**                                                                         | Lauren A. Cowart, PhD, Virginia Commonwealth University, Richmond, Virginia  
|         |                                                                                         | D. Kent Arrell, PhD, Mayo Clinic, Rochester, Minnesota                   |
| 9:30 AM | **Signaling Pathways Downstream of Mitochondrial Dynamics**                              | E. Dale Abel, MD, PhD, University of Iowa, Roy J. and Lucille A. Carver College of Medicine, Iowa City, Iowa |
| 9:50 AM | **Metabolic Dysregulation in Cardiovascular Disease**                                    | Svati H. Shah, MD, FAHA, Duke University Medical Center, Durham, North Carolina |
| 10:10 AM| **Integrating Metabolomics and Respiratory Phenomics to Decipher the Metabolic Basis of Heart Failure** | Deborah Muoio, PhD, Duke University, Durham, North Carolina               |
| 10:30 AM| Oral Abstract Presentation                                                              | Aberrant Caesin Kinase 2 Signalling Predisposes the Heart to an Apoptotic Phenotype in Type 2 Diabetes | 119  
|         | **Moderators:**                                                                         | Lauren E. Smith, Desmond K. Li, Stuart J. Cordwell, Melanie Y. White, Univ of Sydney, Sydney, Australia |
| 10:45 AM| **Session 15**                                                                           | Novel Cardiac Regulatory Mechanisms                                       |
|         | **Moderators:**                                                                         | Susan F. Steinberg, MD, FAHA, Columbia University, New York, New York  
|         |                                                                                         | Fadi N. Salloum, PhD, Virginia Commonwealth University, Richmond, Virginia |
| 10:45 AM| **Downregulation of Cardiac Sympathetic Tone in Heart Failure**                          | David J. Lefer, PhD, Louisiana State University, New Orleans, Louisiana |
| 11:05 AM| **mAKAP: A Master Regulator of Cardiac Hypertrophy**                                     | Kimberly Dodge-Kafka, PhD, University of Connecticut Health Center, Farmington, Connecticut |
| 11:25 AM| **Role of NF2 in Cardiac Injury**                                                        | Dominic Del Re, PhD, Rutgers New Jersey Medical School, Newark, New Jersey |
| 11:45 AM| Closing Remarks/Conference Adjourns                                                      |                                                                         |
Abstracts

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http://professional.heart.org/bcvs2018

Oral Abstract Presentations 100 - 119

Poster Abstract Presentations

Poster Session 1  Monday, July 30  4:40 – 7:00 PM  Presentation # 200 – 321
Poster Session 2  Tuesday, July 31  4:30 – 7:00 PM  Presentation # 330 - 458
Poster Session 3  Wednesday, August 1  4:30 – 7:00 PM  Presentation # 460 - 586

100 PRDM16 is a Novel Regulator of Cardiac Hypertrophy, Remodeling and Mitochondrial Dynamics
Karla Maria Pires, Sihem Boudina, Univ of Utah, Salt Lake Cty, UT
K. Pires: None. S. Boudina: None.

101 Endothelial Arnt Regulates Microvascular Endothelial Barrier Function in Heart Failure Through a Novel Mmp3 Pathway
Mei Zheng, Maura Knapp, Jorge Andrade, Anna Cheng, Nikola Sladojevic, University of Chicago, Chicago, IL; Konstantin G Birukov, Univ of Maryland, Maryland, IL; Qiong Zhao, Inova Heart and Vascular Inst, Falls Church, VA; James K. Iiao, Rongxue (Rosie) Wu, University of Chicago, Chicago, IL.

102 An Internal Pool of β-Adrenergic Receptors Activates PLC-mediated PI4P Hydrolysis in Cardiac Myocytes
Alan V Smrcka, Craig A Nash, Wenhui Wei, Univ of Michigan Sch of Med, Ann Arbor, MI
A.V. Smrcka: None. C.A. Nash: None. W. Wei: None.

103 Cytochrome b5 Reductase 3 Regulates Myoglobin Redox State and Controls Cardiac Function
Nolan Thorne Carew, Helene M Altmann, Joseph C Galley, Scott Hahn, Megan P Miller, Sruti Shiva, Dennis McNamara, Adam C Straub, Univ of Pittsburgh, Pittsburgh, PA

104 AAV-Exosomes: A Novel Platform for Myocardial Gene Delivery for Cardioprotection
Marta Adamiak, Yaxuan Liang, Prabhu Mathiyalagan, Neha Agarwal, Erik Kohlbrenner, Divya Jha, Elena Chepurko, Dongtak Jeong, Delaine Ceholski, Nicole Dubois, Roger Hajjar, Susmita Sahoo, Icahn Sch of Med at Mount Sinai, New York, NY

This research has received full or partial funding support from the American Heart Association.

105 Tuning EC-Coupling: β-Adrenergic Receptor Activation Stimulates Dynamic Augmentation of Ca_{1.2} Channel Sarcolemmal Abundance and Cooperativity
Danica W Ito, Karen I Hannigan, Luis F Santana, Rose E Dixon, Univ of California Davis, Davis, CA

This research has received full or partial funding support from the American Heart Association.

106 Identifying Cardiac Conduction System-specific Enhancers That Link Cell-type Specification with Human Conduction Defects
Samadrita Bhattacharyya, Minoti Bhakta, Lin Wang, Nikhil V. Munshi, UT Southwestern Medical Ctr, Dallas, TX

107 The Mevalonate Pathway Controls Cardiomyocyte Proliferation
James E Hudson, The Univ of Queensland, Brisbane, Australia
J.E. Hudson: 3. Other Research Support; Modest; Collaboration with AstraZeneca.

108 Molecular and Electrophysiologic Characterization of Obesity Mediated Atrial Fibrillation in Mc4r-KO Mice
Ambili Menon, Mark McCauley, Liang Hong, Arvind Sridhar, Srikanth Perike, Meihong Zhang, Erin Lambers, Dawood Darbar, Univ of Illinois at Chicago, Chicago, IL
G Protein-coupled Receptor Kinase 2 Impairs Fatty Acid Metabolism in the Failing Heart Through Novel Mechanisms

Jessica M Pfleger, Polina Gross, Jaslyn Johnson, Erhe Gao, Steven R Houser, Walter J Koch, Temple Univ, Philadelphia, PA


110

Numb Family Proteins Modulate Cardiac Morphogenesis by Regulating N-cadherin Trafficking to Plasma Membrane

Mingfu Wu, Albany Medical Coll, Albany, NY

M. Wu: None.

This research has received full or partial funding support from the American Heart Association.

111

Dysregulation of Pdgfrb Contributes to the Pathogenesis of LMNA-related Dilated Cardiomyopathy


This research has received full or partial funding support from the American Heart Association.

112

Doxorubicin Alters Cardiac Fibroblast Phenotype

Trevi R Mancilla, Gregory J Aune, UT Health San Antonio, San Antonio, TX

T.R. Mancilla: None. G.J. Aune: None.

113

Steering Fibroblast Phenotype to Promote Left Ventricular Scar Maturation and Function Post-MI

Lisandra E de Castro Brás, East Carolina Univ, Greenville, NC

L.E. de Castro Brás: None.

This research has received full or partial funding support from the American Heart Association.

114

A Role for Brain-derived Neurotrophic Factor in Duchenne Cardiomyopathy

Cristi L Galindo, Cassandra P Aewulewitsch, Jonathan H Soslow, Erica J Carrier, Anand P Singh, Prachi Umbakar, Qinkun Zhang, Frank Raucci, Vanderbilt Univ Med Ctr, Nashville, TN; Larry W Markham, Indiana Univ Sch of Med, Indianapolis, IN; Hind Lal, Antonis K Hatzopoulos, Vanderbilt Univ Med Ctr, Nashville, TN


This research has received full or partial funding support from the American Heart Association.

115

Chromatin Microenvironments with Distinct Functionality During Cardiac Stress

Manuel Rosa-Garrido, Douglas J Chapsky, Maximilian Cabaj, Elaheh Karbassi, Thomas Vondriska, UCLA, Los Angeles, CA


This research has received full or partial funding support from the American Heart Association.

116

Mybph1 is a Novel Myofilament Component Implicated in Arrhythmia and Dilated Cardiomyopathy

David Y Barefield, Jordan J Sell, Megan J Puckelwartz, Lisa D. Wilsbacher, Northwestern Univ, Chicago, IL; Glenn I Fishman, New York Univ, New York, NY; Elizabeth M McNally, Northwestern Univ, Chicago, IL


117

Regulation of Cardiac Mitochondrial Function by Chaperone Mediated Autophagy

Yun Chen, Jaehoon Lee, Min Zheng, Victor Paulino, Albert Einstein Coll of Med, Bronx, NY; Christian Garcia, Columbia Univ Medical Ctr, New York, NY; Julio Madrigal Matute, Albert Einstein Coll of Med, Bronx, NY; Hong Li, Rutgers, The State Univ of New Jersey, Newark, NJ; Nina Kaludercic, Univ of Padova, Padova, Italy; Edward Owusu-Ansah, Columbia Univ Medical Ctr, New York, NY; Ana Maria Cuervo, Richard N Kitsis, Albert Einstein Coll of Med, Bronx, NY


This research has received full or partial funding support from the American Heart Association.
Abstracts (continued)

118
NLRP3 Inflammasome Mediates the Obesity-induced Pathogenesis of Atrial Fibrillation
**Larry Scott Jr.**, Changqun Yao, Na Li, Baylor Coll of Med, Houston, TX

**L. Scott**: None. **C. Yao**: None. **N. Li**: None.

This research has received full or partial funding support from the American Heart Association.

119
Aberrant Caesin Kinase 2 Signalling Predisposes the Heart to an Apoptotic Phenotype in Type 2 Diabetes
Lauren E Smith, Desmond K Li, Stuart J Cordwell, **Melanie Y White**, Univ of Sydney, Sydney, Australia

**L.E. Smith**: None. **D.K. Li**: None. **S.J. Cordwell**: None. **M.Y. White**: None.

200
Engineering Evolution: Tetraploidization of Human Cardiac Stem Cells to Enhance Functional Activity
**Kathleen M Broughton**, Dena Yaareb, Carolina Y. Esquer, San Diego State Univ, San Diego, CA; Giulio Pompilio, Univ of Milan, Milan, Italy; Mark A Sussman, San Diego State Univ, San Diego, CA

**K.M. Broughton**: 1. Employment; Significant; CardioCreate, Inc.. **D. Yaareb**: None. **C.Y. Esquer**: None. **G. Pompilio**: None. **M.A. Sussman**: 1. Employment; Significant; CardioCreate, Inc.,

201
Induction of Wnt Signaling Promotes Maturation Arrest and Massive Expansion of Beating Human iPSC-derived Cardiomyocytes

**J.W. Buikema**: None. **W.R. Goodyer**: None. **S. Lee**: None. **O. Chirikian**: None. **V. Serpooshan**: None. **G. Li**: None. **S.L. Paige**: None. **H. Wu**: None. **D. Paik**: None. **S. Rhee**: None. **A. Beck**: None. **S. Ventkamatran**: None. **J. Hu**: None. **S. Swam**: None. **A. van Mil**: None. **K. Red-Horse**: None. **J.Y. Wu**: None. **P.A. Doevedans**: None. **J.P. Sluijter**: None. **K. Garcia**: None. **C.J. Kuo**: None. **J.C. Wu**: None. **S.M. Wu**: None.

This research has received full or partial funding support from the American Heart Association.

202
Low Mitochondrial Membrane Potential Identified a Novel Population of Human Cardiac Progenitor Cells with the Capacity for Myocardial Repair
Xiuchun Li, Xiao-Liang Wang, Albany Medical Coll, Albany, NY; Edward Bennett, Albany Medical Ctr, Albany, NY; **Chuanxi Cai**, Albany Medical Coll, Albany, NY

**X. Li**: None. **X. Wang**: None. **E. Bennett**: None. **C. Cai**: None.

203
Short Telomeres Induce p53 and Autophagy and Modulate Age-Associated Changes in Cardiac Progenitor Cell Fate
**Nirmala Hariharan**, Collin Matsumoto, Yan Jiang, Univ of California at Davis, Davis, CA; Mark Sussman, San Diego State Univ, San Diego, CA

**N. Hariharan**: 2. Research Grant; Significant; American Heart Association Scientist Development Grant. **C. Matsumoto**: None. **Y. Jiang**: None. **M. Sussman**: None.

This research has received full or partial funding support from the American Heart Association.

204
Temporal Assessment of Human iPS-Cardiomyocytes to Assess the Maturity for Cardiac Repair Applications
Naresh Kumar, Julie A Dougherty, Muhammad Mergaye, Mark G Angelos, **Mahmood Khan**, Ohio State Univ, Columbus, OH

**N. Kumar**: None. **J.A. Dougherty**: None. **M. Mergaye**: None. **M.G. Angelos**: None. **M. Khan**: None.

205
Cryopreserved Cardiac Tissue Graft (MyCardia) Improved Cardiac Function in Rats With Heart Failure
**Jordan Lancaster**, Univ of Arizona, Tucson, AZ; Jen Koevary, Avery Therapeutics, Tucson, AZ; Steven Goldman, Univ of Arizona, Tucson, AZ

**J. Lancaster**: 7. Ownership Interest; Significant; Avery Therapeutics Inc.. **J. Koevary**: 1. Employment; Significant; Avery Therapeutics Inc.: 7. Ownership Interest; Significant; Avery Therapeutics Inc. **S. Goldman**: 7. Ownership Interest; Significant; Avery Therapeutics Inc..

206
Electrical Stimulation Enhances the Therapeutic Potential of Pediatric Cardiac Progenitor Cells
**Joshua Maxwell**, Carly Zaladonis, Daniel Jacobs, Michael Davis, Emory Univ, Atlanta, GA

**J. Maxwell**: None. **C. Zaladonis**: None. **D. Jacobs**: None. **M. Davis**: None.

207
In Vitro Modeling of Variable Heart Diseases Due to Lamin A/C Mutation via Patient induced Pluripotent Stem Cell Derived Cardiomyocytes
**Mehrsa Mehrabi**, Mira Asad, Danielle Becker, Halida Widyastuti, Cecilia Nguyen, Linda A Mccarthy, Michael V Zaragoza, Anna Grosberg, Univ of California, Irvine, Irvine, CA

**M. Mehrabi**: None. **M. Asad**: None. **D. Becker**: None. **H. Widyastuti**: None. **C. Nguyen**: None. **L.A. Mccarthy**: None. **M.V. Zaragoza**: None. **A. Grosberg**: None.

208
miR-34a Regulates the Secretome Production and Functional Potential of Human Cardiac Progenitor Cells by Heat Shock Factor
**Rachana Mishra**, Sudhish Sharma, Wen Chih Cheng, Progyaparamita Saha, Tami J Kingsbury, Curt I Civin, Sunjay Kaushal, Univ of Maryland, Baltimore, MD

**R. Mishra**: None. **S. Sharma**: None. **W.C. Cheng**: None. **P.
Abstracts (continued)

Saha: None. T.J. Kingsbury: None. C. Civin: None. S. Kaushal: None.

209
Downregulation of KLF2 in the Endothelium Contributes to the Pathogenesis in LMNA-related Dilated Cardiomyopathy
Nazish Sayed, Chun Liu, Farhan Himmati, Joe Zhang, Saereh Khanamiri, Haodong Chen, Jan-Ranier Moonen, Alexa Wnorowski, Elena Matsa, Linling Cheng, Karim Sallam, Marlene Rabinovitch, Joseph C Wu, Stanford Univ, Stanford, CA

This research has received full or partial funding support from the American Heart Association.

210
Assessment of Cardiac Cell Culture Electrical Excitability Using Strength Duration Relationships
Michael N. Sayegh, Natasha Fernandez, Hee Cheol Cho, Emory Univ, Atlanta, GA
M.N. Sayegh: None. N. Fernandez: None. H. Cho: None.

211
Modified Endothelial Progenitor Cell (EPC) Transplantation Improves Diabetic Kidney Disease
Sabysasachi Sen, Nabarita Kundu, Laureano Asico, Cleyton Domingues, Pedro Jose, George Washington Univ, Washington, DC
S. Sen: None. N. Kundu: None. L. Asico: None. C. Domingues: None. P. Jose: None.

This research has received full or partial funding support from the American Heart Association.

212
Adrenergic Signaling Genes Are Not All Expressed During Myogenesis in Individual Human iPSC-derived Cardiomyocytes
David Torres Barba, Univ of California, Davis, Internal Med Dept, Sacramento, CA; Eliseo T Vazquez, Univ of California, Davis, Coll of Biological Sciences, Sacramento, CA; Janhavi S Sharma, Elizabeth Cortez-Toledo, Univ of California, Davis, IM, Cardiovascular Div, Sacramento, CA; Janhavi S Sharma, Elizabeth Cortez-Toledo, Univ of California, Davis, IM, Cardiovascular Div, Sacramento, CA; Omar De la Cruz Cabrera, Dept of Mathematical Sciences, Kent State Univ, Kent, OH; Javier E Lopez, Univ of California, Davis, IM, Cardiovascular Div, Sacramento, CA; E.T. Vazquez: None. D. Torres Barba: None. J.S. Sharma: None. E. Cortez-Toledo: None. O. De la Cruz Cabrera: None. J.E. Lopez: None.

213
Sarcolemma Genes Related to the Transverse Tubule Structure Are Mostly Not Expressed in Differentiating Human iPSC-derived Cardiomyocytes
Eliseo T Vazquez, Univ of California, Davis, Coll of Biological Sciences, Sacramento, CA; David Torres Barba, Univ of California Davis Internal Med Dept, Sacramento, CA; Janhavi S Sharma, Elizabeth Cortez-Toledo, Xiaoqiang Zhang, Univ of California, Davis, IM, Cardiovascular Div, Sacramento, CA; Omar De la Cruz Cabrera, Dept of Mathematical Sciences, Kent State Univ, Kent, OH; Javier E Lopez, Univ of California, Davis, IM, Cardiovascular Div, Sacramento, CA; E.T. Vazquez: None. D. Torres Barba: None. J.S. Sharma: None. E. Cortez-Toledo: None. O. De la Cruz Cabrera: None. J.E. Lopez: None.

A Microrna-hippo Pathway Functions in Cardiac Conduction System Homeostasis and Regeneration
Jun Wang, Baylor Coll of Med, Houston, TX
J. Wang: None.

This research has received full or partial funding support from the American Heart Association.

215
Induced Pluripotent Stem Cell-Derived Cardiomyocyte Proliferation is Enhanced by Co-culture With Female Mesenchymal Stem Cells
Amarylis Bonito Wanschel, Alessandro G. Salerno, Konstantinos E. Hatzistergos, Ivonne H. Schulman, Wayne Balkan, Joshua Hare, Univ of Miami, Miami, FL
A.B. Wanschel: None. A.G. Salerno: None. K.E. Hatzistergos: None. I.H. Schulman: None. W. Balkan: None. J. Hare: 7. Ownership Interest; Modest; Dr. Joshua Hare holds equity in Longeveron. 8. Consultant/Advisory Board; Modest; Dr. Joshua Hare is the Chief Scientific Officer, a compensated consultant and advisory board member for Longeveron and is the co-inventor of intellectual property licensed to Longeveron.

216
Interleukin-10 Deficiency Impairs Reparative Properties of Bone Marrow-Derived Endothelial Progenitor Cell Exosomes
Yujia Yue, Venkata N.S. Garikipati, Yan Tang, Maria Cimini, Zhongjian Cheng, Chunlin Wang, May Troungcao, Raj Kishore, Temple Univ, Philadelphia, PA

This research has received full or partial funding support from the American Heart Association.

217
TBX5CreER2/NKX2.5RFP hiPSCs for Simultaneously Isolating Lineage-Specific Cardiovascular Cells
Joe Z Zhang, Vittavat Termglinchan, Ilanit Itzhaki, Stanford Univ, Stanford, CA; Vicky Wang, VA Hosp, San Francisco, CA; Ningyi Shao, Alex Chang, Ning Ma, Chun Liu, Tomoyuki Kitani, Nazish Sayed, Haoqiu Wu, Chi Lam, Helen Blau, Joseph Wu, Stanford Univ, Stanford, CA
Abstracts (continued)

218
Biofunctional Tissue-engineered Vascular Grafts Induce Vascular Regeneration
Yiwa Pan, Yifan Wu, Kang Qin, Yongzhen Wei, Deling Kong, Qiang Zhao, Nankai Univ, Tianjin, China
- Y. Pan: None. Y. Wu: None. K. Qin: None. Y. Wei: None. D. Kong: None. Q. Zhao: None.

220
Adipocyte-Derived Exosome-Containing miRNAs Exacerbate Cardiac Ischemia/Reperfusion Injury in Diabetic Mice
Lu Gan, Dina Xie, Dajun Zhao, Thomas Jefferson Univ, Philadelphia, PA; Erhe Gao, Temple Univ, Philadelphia, PA; Walter J. Koch, Yajing Wang, Xiniang Ma, Thomas Jefferson Univ, Philadelphia, PA

221
Autophagy is Involved in the Protective Effect of Endophilin A2 on H2O2-induced Apoptosis in H9C2 Cardiomyocytes
Yun Liu, Hai-Qi Liu, Xin-Qiu-Yue Wang, Huan-Jia Shen, Guangzhou Medical Univ, Guangzhou, China

222
Estrogen Protects Artery from Senescence via Sirt1/AMPK/Rab9—Mediated Mitophagy
Yuichi Sasaki, Yoshiyuki Ikeda, Yuichi Akasaki, Yoshihiro Uchikado, Mitsuhiro Ohishi, Kagoshima Univ, Kagoshima, Japan

223
Activation of CDK2 Mediates Doxorubicin-induced Cardiotoxicity
Peng Xia, Yuening Liu, David Liu, Zhaokang Cheng, Washington State Univ, Spokane, WA
- P. Xia: None. Y. Liu: None. D. Liu: None. Z. Cheng: None.

224
Reducing Fluoroscopy Times and Contrast Volume Significantly in the Therapy of Acute Coronary Syndromes by Performing Angioplasty Through Cordis 6F Diagnostic Catheters - Changing the Interludes
Mark C Arokiaraj, Pondicherry Inst Medical Science, Pondicherry, India
- M. C. Arokiaraj: None.

225
Comparison of Myocardial Infarction and Congestive Heart Failure Induced Through Interventional Ischemia Reperfusion Injury in Yorkshire (Domestic), Yucatan, and Göttingen Swine
Christopher A Drummond, Randy Pielemeier, Jennifer Sweet, Jennifer DeVries, Janelle Gesman, Mark LaBar, Gayle Lugnet, Mark D Johnson, MPI Res, Mattawan, MI

226
Statin Therapy is Associated with Decreased Neovascularization in Symptomatic Carotid Atherosclerotic Plaque: A Pathological Analysis
Takao Konishi, Hokkaido Cardiovascular Hosp, Sapporo, Japan; Shinya Tanaka, Dept of Cancer Pathology, Hokkaido Univ Graduate Sch of Med, Sapporo, Japan
- T. Konishi: None. S. Tanaka: None.

227
Inhibition of Histone Deacetylase Catalytic Activity Improves Cardiac and Pulmonary Function in a Feline Model of Heart Failure with Preserved Ejection Fraction
Markus Wallner, Deborah Eaton, Remus Berretta, Jichuan Wu, Temple Univ Lewis Katz Sch of Med, Philadelphia, PA; Mark Jeong, Ying Lin, Univ of Colorado Anschutz Medical Campus, Aurora, CO; Sandy Baker, Temple Univ Lewis Katz Sch of Med, Philadelphia, PA; Mark Oyama, Sch of Veterinary Med, Univ of Pennsylvania, Philadelphia, PA; Dirk von Lewinski, Div of Cardiology, Medical Univ of Graz, Graz, Austria; Sadia Mohsin, Temple Univ Lewis Katz Sch of Med, Philadelphia, PA; Heiner Post, Contilia Heart and Vascular Ctr, St. Marienhospital Mühlheim an der Ruhr, Germany; Timothy McKinsey, Univ of Colorado Anschutz Medical Campus, Aurora, CO; Maria Wolfson, Steven R Houser, Temple Univ Lewis Katz Sch of Med, Philadelphia, PA

228
RNA Aptamer 9.14T79VRT7 Modifies Canine Ex vivo Platelet Reactivity
Spencer E Talentino, Matthew E Joseph, Chase M Byington, Camille F Bratton, Caitlin M Hatten, Gabriel S Shimmin, Cole P Anderson, Jenna L Wilson, Alayson L Huttinger, Debra G Wheeler, Shahid M Nimjee, Ohio State Univ, Columbus, OH

229
Non-invasive, Patient-specific Assessment of LVAD Modeled with Consideration of LV Ejection and Function
Huidan (Whitney) Yu, Anurag Deb, Monsurul Khan, Rou Chen, Indiana Univ Purdue Univ Indianapolis, Indianapolis, IN; Yang Yang, I-Wen Wang, Sch of Med Indiana Univ, Indianapolis, IN
230
Repair of Aortic Coarctation in Neonates Less than Two Kilogram
Qiang Chen, Thomas Fleming, Massimo Caputo, Serban Stoica, Andrew Tometzki, Andrew Parry, BRISTOL ROYAL HOSPITAL FOR CHILDREN, Bristol, United Kingdom

231
Identification of a Titin Enhancer using hiPSC-Derived Cardiomyocytes and CRISPR/Cas9 Genome Editing
Meraj Neyazi, Manuel Schmid, Arun Sharma, Lauren K Wasson, Joshua M Gorham, Steven DePalma, Seong Won Kim, Jonathan G Seidman, Christine E Seidman, Dept of Genetics, Harvard Medical Sch, Boston, MA

232
NFKB1 Pathway is a Major Dysregulated Biological Pathway in Cardiac Myocytes in Myocyte-Specific Lamin A/C Deficient Mice
Gaelle Auguste, Priyansh Gurha, Raffaella Lombardi, Ali J Marian, Univ of Texas Health, Houston, TX

233
Molecular and Electrophysiological Analyses of Gene Variants in Bilateral Adrenal Hyperaldosteronism
Namita G Hattangady, Antonio Marcondes Lerario, Daniela Ponce-Balbuena, Univ of Michigan, Ann Arbor, MI; Silvia Monticone, Paolo Mulatero, Univ of Torino, Torino, Italy; Tobias Else, Univ of Michigan, Ann Arbor, MI
T. Else: 2. Research Grant; Significant; American Heart Association Scientist Development Grant (14SDG17990000), NHLBI (1R01HL130106).

234
Nrf2-Dependent Transcriptional and Post-Transcriptional Regulatory Responses in Reductive Stress Myocardium
Justin M Quiles, Mark E Pepin, Univ. Alabama at Birmingham, Birmingham, AL; Senthilkumar Cinghu, NIEHS/NIH, Research Triangle Park, NC; Anil Kumar Challa, Adam R Wende, David Crossman, Univ. Alabama at Birmingham, Birmingham, AL; Rajasekaran Namakkal-Soorappan, Sch of Med, Univ. Alabama at Birmingham, Birmingham, AL

235
Toxic RNA Granules, a Novel Pathogenic Pathway to Heart Failure, in RBM20 Gene-Edited Pigs
Jay W Schneider, UT Southwestern, Dallas, TX; Dan Carlson, Recombinetics, Inc., St. Paul, MN; Timothy J. Nelson, Mayo Clinic, Rochester, MN

236
Histone Variant H2A.Z Defines Cell Identity in Smooth Muscle Cells as Revealed by Single-Cell Transcriptomics
Li Wang, Fang Yao, Peng Yu, Chinese Acad of Medical Sciences, Beijing, China
L. Wang: None. F. Yao: None. P. Yu: None.

237
A Non-desmosome Role of Plakoglobin in Regulating Insulin Receptor Specifically via PI3 Kinase Pathway
Chuan Yu Wei, Shing Fat Chan, Johnson Wong, Krannert Inst of Cardiology, Indiana Univ, Indianapolis, IN; Joseph Marine, Cynthia A James, Hugh Calkins, Daniel P Judge, Johns Hopkins Univ, Baltimore, MD; Huei-Sheng Vincent Chen, Krannert Inst of Cardiology, Indiana Univ, Indianapolis, IN

238
Ube2v1 Promotes Mutant B-crystallin-induced Protein Aggregation
Na Xu, Patrick McLendon, James Gulick, Hanna Osinska, Jeffrey Robbins, Cincinnati Childrens Hosp Medical Ctr, Cincinnati, OH

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ABSTRACTS

Next year’s conference: July 29–August 1, 2019. Visit professional.heart.org/bcvssessions for more information.
In Vitro Disease Modeling and Discovery of Small Molecules for the Treatment of Duchenne Muscular Dystrophy Utilizing Patient iPSC-derived Cardiomyocytes

Chicheng Sun, Deena Qadir, Anthony Accorsi, Natalie Moore, Ling Lin, Angela Cacace, John Graef, Fulcrum Therapeutics, Cambridge, MA

C. Sun: 1. Employment; Significant; Employee of Fulcrum Therapeutics. 7. Ownership Interest; Significant; Own stocks of Fulcrum Therapeutics. D. Qadir: 1. Employment; Significant; Employee of Fulcrum Therapeutics. 7. Ownership Interest; Significant; Own stocks of Fulcrum Therapeutics. A. Accorsi: 1. Employment; Significant; Employee of Fulcrum Therapeutics. 7. Ownership Interest; Significant; Own stocks of Fulcrum Therapeutics. N. Moore: 1. Employment; Significant; Employee of Fulcrum Therapeutics. 7. Ownership Interest; Significant; Own stocks of Fulcrum Therapeutics. L. Lin: 1. Employment; Significant; Employee of Fulcrum Therapeutics. 7. Ownership Interest; Significant; Own stocks of Fulcrum Therapeutics. A. Cacace: 1. Employment; Significant; Employee of Fulcrum Therapeutics. J. Graef: 1. Employment; Significant; Employee of Fulcrum Therapeutics. 7. Ownership Interest; Significant; Own stocks of Fulcrum Therapeutics.

Drug Repurpose Using Human Stem Cell Models of Cardiac Arrhythmias

Masayuki Yazawa, LouJin Song, Kumi Morikawa, Columbia Univ, New York, NY

M. Yazawa: None. L. Song: None. K. Morikawa: None.

Modeling of Diastolic Dysfunction in Induced Pluripotent Stem Cell-derived Cardiomyocytes From Hypertrophic Cardiomyopathy Patients

Haodi Wu, Huaxiao Yang, June-Wha Rhee, Joe Zhang, Chi Keung Lam, Karim Sallam, Alex Cy Chang, Ning Ma, Helen Blau, Donald Bers, Joseph Wu, Stanford Univ, Stanford, CA


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Mitochondrial Damage Associated Molecular Patterns Promotes Endothelial Dysfunction in the Microcirculation

Karima Ait-Aissa, Andrew O Kadlec, Dawid S Chabowski, Joseph C Hockenberry, Jasmine M Linn, David D Gutterman, Andreas M Beyer, Medical Coll of Wisconsin, Milwaukee, WI


β2 Adrenergic Receptor Deletion Alters Leukocyte Subtype Inter Organ Localization and Survival Following Myocardial Infarction

Anamika Bajpai, Temple Univ Sch of Medicin, Philadelphia, PA

A. Bajpai: None.

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Cortical-bone Derived Stem Cells Improve Cardiac Outcomes After Myocardial Infarction by Modulating the Inflammatory Response


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Pulmonary Hypertension Induced by 15-HETE is Reverse by Apoai Mimetic Peptide B Administration

Gregoire Ruffenach, Ellen Ines O’Connor, Mylene Vaillancourt, Shervin Sarji, Nancy Cao, Laila Aryan, Christine Cunningham, Victor Grijalva, Soban Umar, Sriniivasa T Reddy, Mansoureh Eghbali, Univ of California, Los Angeles, CA


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The Role of Adenosine Derived From Mesenchymal Stromal Cell on Neutrophil Extracellular Trap Formation in Myocardial Ischemia Reperfusion

Kai Xu, Eric Shin, Lanfang Wang, Juline Deppen, Rebecca Levit, Emory Univ, Atlanta, GA

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Downregulated Striated Muscle Preferentially Expressed Protein Kinase Enhances Susceptibility to Post-Operative Atrial Fibrillation

Hannah Campbell, Li Ni, Julia Reynolds, Katherina Alsina, Baylor Coll of Med, Houston, TX; Tina Veleva, Issam Abu-Taha, Univ Duisburg-Essen, Essen, Germany; Ann Quick, Zachary Donoviel, Na Li, Baylor Coll of Med, Houston, TX; Dobromir Dobrev, Univ Duisburg-Essen, Essen, Germany; Xander Wehrens, Baylor Coll of Med, Houston, TX
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254
Mitochondrial Permeability Transition Pore, Calcium Uniporter, and Iron Overload in the Heart
Richard Gordan, Rutgers-New Jersey Medical Sch, Newark, NJ; Suwakon Wongjaikam, Chiang Mai Univ, Chiang Mai, Thailand; Nadezhda Fefelova, Rutgers-New Jersey Medical Sch, Newark, NJ; Natthaphat Siri-Angkul, Chiang Mai Univ, Chiang Mai, Thailand; Judith K Gwathmey, Rutgers-New Jersey Medical Sch, Newark, NJ; Nipon Chattipakorn, Sirporn C Chattipakorn, Chiang Mai Univ, Chiang Mai, Thailand; Lai-Hua Xie, Rutgers-New Jersey Medical Sch, Newark, NJ

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255
Mechanical Stretch is Not a Major Cause of Ectopic Activation During Early Stage Regional Ischemia in an Isolated Left-Ventricular Working Heart Model
Hanyu Zhang, Han Yu, Gregory P Walcott, Jack M Rogers, Univ of Alabama at Birmingham, Birmingham, AL

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256
Precision Medicine in Cardiac Channelopathy: Integrating Genome Editing and Induced Pluripotent Stem Cells to Decipher Variant of Unknown Significance
Priyanka Garg, Stanford Univ, Stanford, CA
P. Garg: None.

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261
Activation of the Thromboxane/Prostanoid Receptor Contributes to Elevated End-Diastolic Calcium in Cardiomyocytes and Cardiac Fibrosis Following Right Ventricular Pressure Overload
Erica J. Carrier, Kyungsoo Kim, Vanderbilt Univ Medical Ctr, Nashville, TN; Natalie A. Noll, Vanderbilt Univ, Nashville, TN; Ines Macias-Perez, Cumberland Pharmaceuticals, Nashville, TN; W. David Merryman, Vanderbilt Univ, Nashville, TN; Bjorn C. Knollmann, James D. West, Vanderbilt Univ Medical Ctr, Nashville, TN
E.J. Carrier: 2. Research Grant; Significant; An earlier version of this research project was funded by Cumberland Pharmaceuticals, who own and produce ifetroban, the TP receptor antagonist in question. 3. Other Research Support; modest; Cumberland Pharmaceuticals supplies us with the research drug ifetroban free of charge. K. Kim: None. N.A. Noll: None. I. Macias-Perez: 1. Employment; Significant; I.M.-P. is employed by Cumberland Pharmaceuticals, Inc. (CPI), who manufacture ifetroban and, along with Vanderbilt University, own its intellectual property. 7. Ownership Interest; Significant; I.M.-P. owns stock in CPI. W. Merryman: None. B.C. Knollmann: None. J.D. West: 2. Research Grant; Significant; J.W. has previously received research funding from Cumberland Pharmaceuticals. 3. Other Research Support; modest; J.W. receives the research drug ifetroban free of charge from Cumberland Pharmaceuticals.

262
GRK5 is a Novel Regulator of Fibroblast Activation
Akito Eguchi, Walter J Koch, Lewis Katz Sch of Med at Temple Univ, Philadelphia, PA
A. Eguchi: None. W.J. Koch: None.

263
Cytosolic RBFox1 in Cardiac Pathological Remodeling
Chen Gao, Yun-Hua (Esther) Hsiao, Menglong Wang, Zhaojun Xiong, Shuxun Ren, Christophe D Rau, Katelyn Li, Xinshu(Grace) Xiao, Yibin Wang, Yi Xing, UCLA-Los Angeles, Los Angeles, CA

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264
A Complement Pathway is Responsible for Degeneration of Right Ventricular Outflow Tract
Shogo Ito, Tomohisa Seki, Shinsuke Yuasa, Jin Komuro, Toshiomi Katsuki, Mai Kimura, Yoshikazu Kishino, Dai Kusumoto, Shugo Tohyama, Keio Univ Sch of Med, Tokyo, Japan; Yoshihiro Fukumoto, Kurume Univ Hosp, Kurume, Japan; Keichi Fukuda, Keio Univ Sch of Med, Tokyo, Japan
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265
TGF Beta Signaling and Fibrosis in cMyBP-C-dependent Cardiac Disease
Qinghong Meng, Bidur Bhandary, Hanna Osinska, CCHMC, Cincinnati, OH; Jeanne James, Medical Coll of Wisconsin, Milwaukee, WI; Kriston Shay-Winkler, James Gulick, CCHMC, Cincinnati, OH; James McNamara, Univ of Cincinnati, Cincinnati, OH; Md. Shenuarin Bhuiyan, Louisiana State Univ Health Sciences Ctr, Shreveport, LA; Sakthivel Sadayappan, Univ of Cincinnati, Cincinnati, OH; Jeffrey Robbins, CCHMC, Cincinnati, OH

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266
Sex Differences in Survival and Pathological Responses of Hearts, Cardiac Myocytes and Fibroblasts
Angela K Peter, Tova L. Christensen, Cierra J. Walker, Christa L. Trexler, Christopher D. Ozeroiff, Kimberly R. Lugo, Amy R. Perry, Kristi S. Anseth, Leslie A. Leinwand, CU Boulder, Boulder, CO

267
Safety and Efficacy of a Combinatorial CCN5/SERCA2a Gene Delivery Approach for Arrhythmia Suppression in a Chronic Model of Angiotensin II (ANG) Induced Cardiac Hypertrophy and Failure
Nour Raad, Dongtaik Jeong, Woo Jin Park, Fadi Akar, Mount Sinai, New York, NY
N. Raad: None. D. Jeong: None. W. Park: None. F. Akar: None.

268
Through the Inhibition of Autophagy Flux miR-221 Plays an Important Role in the Reductions of Hypoxia Reoxygenation Induced Cell Death and Collagen Synthesis in Cardiac Fibroblast
Yue Zhou, Arthur M Richards, Peipei Wang, Natl Univ of Singapore, Singapore, Singapore

269
RBM20 Knockout Ameliorates Angiotensin II Induced Hypertension and Cardiac Hypertrophy
Chaoqun Zhu, Sreejayan Nair, Jun Ren, Wei Guo, Univ of Wyoming, Laramie, WY
C. Zhu: None. S. Nair: None. J. Ren: None. W. Guo: None.

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270
Long term Caloric Restriction and Myocardial Aging in Non Human Primates
Niranjana Natarajan, Spencer H Kiehm, Harvard Univ, Cambridge, MA; Jishnu Das, Ragon Inst of MIT, MGH and Harvard, Cambridge, MA; Annie C Wang, Harvard Univ, Cambridge, MA; Julie A Mattison, Natl Inst on Aging, Bethesda, MD; Ricki J Colman, Univ of Wisconsin, Madison, Madison, WI; Richard T Lee, Harvard Univ, Cambridge, MA

273
Autophagy Impairment is Associated with Defects in Mitochondrial Bioenergetics in Doxorubicin Cardiomyopathy
Chowdhury S Abdullah, Shaful Alim, Dept of Pathology and Translational Pathobiology, Shreveport, LA; Richa Aishwarya, Dept of Molecular and Cellular Physiology, Shreveport, LA; Sumitira Miriyala, Manikandan Panchatcharam, Dept of Cellular Biology and Anatomy, Shreveport, LA; Christopher B. Pattillo, Dept of Molecular and Cellular Physiology, Shreveport, LA; Anthony W Orr, Dept of Pathology and Translational Pathobiology, Dept of Cellular Biology and Anatomy, Dept of Molecular and Cellular Physiology, Shreveport, LA; Junichi Sadoshima, Dept of Cell Biology and Molecular Med, Newark, NJ; Joseph A Hill, Dept of Molecular Biology, Div of Cardiology, Dallas, TX; Md. Shenuarin Bhuiyan, Dept of Pathology and Translational Pathobiology, Dept of Molecular and Cellular Physiology, Shreveport, LA

274
Regulation of Myocardial Ketone Body Oxidation Capacity by Increased Protein O-GlcNAcylation in Diabetic Heart
Manoja K Brahma, Chae-Myeong Ha, Andrew K Paterson, Martin E Young, Adam R Wende, Univ of Alabama at Birmingham, Birmingham, AL

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Abstracts (continued)

Amit Joshi, Stanford Univ Sch of Med, Stanford, CA; Sandra Andorf, Yingxin Li, Haodong Chen, Stanford Univ, Stanford, CA; Gerd Hasenfuss, Goettingen Univ, Goettingen, Germany; Daria Mochly-Rosen, Joseph C. Wu, Stanford Univ, Stanford, CA


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Enhanced Mitochondrial Calcium Uptake Promotes Deleterious Remodeling and Impaired Left Ventricular Function During Chronic Adrenergic Stimulation

Joanne F. Garbincius, Timothy S. Luongo, Jonathan P. Lambert, John W. Elrod, Lewis Katz Sch of Med at Temple Univ, Philadelphia, PA


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Dual Modulation of Microscale Tissue Engineering and Energy Metabolism for Maturation of Human Pluripotent Stem Cell-Derived Cardiomyocytes

Cinsley Gentillon, Emory Univ Sch of Med, Atlanta, GA; Meixue Duan, Georgia Inst of Technology, Atlanta, GA; Wen-Mei Yu, Rajneesh Jha, Shuzhao Li, Bill Liang, Andrei Todor, Emory Univ Sch of Med, Atlanta, GA; Greg Gibson, Georgia Inst of Technology, Atlanta, GA; Cheng-Kui Qu, Lou Ann Brown, Chunhui Xu, Emory Univ Sch of Med, Atlanta, GA


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Effects of Acute Oxidative Stress on Cardiac Proteome Dynamics

Cody T Thomas, Maggie Pui Yu Lam, Univ of Colorado, Denver, Aurora, CO

C.T. Thomas: None. M. Lam: None.

Loss of Cardiomyocyte General Control of Amino-Acid Synthesis 5-like 1 Expression Impairs Mitochondrial Function and Exacerbates Heart Failure Progression

Manling Zhang, Dharendra Thapa, Janet R Manning, Michael W Stoner, Univ of Pittsburgh Medical Ctr, Pittsburgh, PA; Danielle Guimaraes, Catherine Corey, Sruti Shiva, Claudette St. Croix, Univ of Pittsburgh, Pittsburgh, PA; Ning Feng, Charles F McTiernan, Univ of Pittsburgh Medical Ctr, Pittsburgh, PA; Michael N Sack, Cardiovascular Branch, Natl Heart, Lung, and Blood Inst, NIH, Bethesda, MD; Iain Scott, Univ of Pittsburgh Medical Ctr, Pittsburgh, PA


Glycogen Receptor Antagonism Ameliorates Progression of Heart Failure

Chen GAO, Shuxun (Vincent) Ren, Junyi Yu, UCLA-LOS ANGELES, Los Angeles, CA; Dung Thai, John Lu, REMD Biotherapeutics, Inc, Camarillo, CA; Zheqing Cai, Cardiolog, Baltimore, MD; Cunyu Zeng, Daping Hosp, The Third Military Medical Univ, Chongqing, China; Hai Yan, REMD Biotherapeutics, Inc, Camarillo, CA; Yibin Wang, UCLA-LOS ANGELES, Los Angeles, CA


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286
New Insights into The Mechanism Contributing To Cardiac Dystrophy
Maryam Sharifi-Sanjani, Sylvia Stankov, Foteini Mourkoti, UNIVERSITY OF PENNSYLVANIA, Philadelphia, PA
M. Sharifi-Sanjani: None. S. Stankov: None. F. Mourkoti: None.
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287
Cardioprotection in Mice with a Knock-in Mutation (C202S) in Cyclophilin D
Georgios Amanakis, Junhui Sun, Jennifer Boylston, Chengyu Liu, Natl Insts of Health, Bethesda, MD; Jeffery Molkenst, Cincinnati Children's Hosp Medical Ctr, Cincinnati, OH; Elizabeth Murphy, Natl Insts of Health, Bethesda, MD
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288
Circular RNA CircFNDC3b Modulates Cardiac Repair After Myocardial Infarction via FUS-1/VEGF-A Axis
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289
Oxidative Stress in Obese Mice and Potential Melatonin Cardioprotective Effects
Rita Rezzani, Gaia Favero, Alessandra Stacchiotti, Francesca Bonomini, Luigi Fabrizio Rodella, Div of Anatomy and Physiopathology, Dept of Clinical and Experimental Sciences, Univ of Brescia, Italy, Brescia, Italy

290
Mitochondrial CLIC4 and CLIC5B Mediate Cardioprotection From Ischemia/reperfusion Injury
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291
The Type I Interferon Receptor Amplifies Innate Immune Responses After Myocardial Infarction
Richard P Ng, Jr., Harvard Coll, Cambridge, MA; Kevin R King, Univ of California, San Diego, San Diego, CA; Aaron D Aguirre, Sean P Aurlucks, Ralph Weissleder, Massachusetts General Hosp, Boston, MA
R.P. Ng, Jr.: None. K.R. King: None. A.D. Aguirre: None. S.P. Aurlucks: None. R. Weissleder: None.
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292
Investigating the Small Heat Shock Proteins Impact on Aggregate Inhibition
Andrew Roth, Hays Rye, Texas A and M Univ, College Station, TX
A. Roth: None. H. Rye: None.

293
Proteomic Profiling of Changes at Active Polysomes That Occur as a Response to Ischemic Injury and Reperfusion of the Heart
MirosIva Stastna, Amanda Thomas, Vidya Venkatraman, Roberta A. Gottlieb, Jennifer E. Van Eyk, Smidt Heart Inst, Cedars-Sinai Medical Ctr, Los Angeles, CA
M. Stastna: None. A. Thomas: None. V. Venkatraman: None. R.A. Gottlieb: None. J.E. Van Eyk: None.
Cd38 Deficiency Protects Heart from Lipid Overload-induced Oxidative Stress via Activating Sirt3/toxo3 Pathway

Ling Fang Wang, Cong Cong Huang, Yun Fei Xiao, Xiao Hui Guan, Xiao Nv Wang, Qing Cao, Yu Liu, Xuan Huang, Li Bin Deng, Ke Yu Deng, Hong Bo Xin, Nanchang Univ, Nanchang, China


Old Drug New Tricks: Repurposing Auranofin for Acute Myocardial Infarction by Targeting Protein Tyrosine Phosphatase PTP-PEST

Chiu-Fen Yang, Dept of Cardiology, Hualien Tzu Chi Hosp, Hualien, Taiwan; Yi-Yun Chen, Yu-Wen Liu, Jai Prakash Singh, Chia-Wei Chang, Inst of Biological Chemistry, Academia Sinica, Taipei, Taiwan; Ching-Feng Cheng, Inst of Biomedical Sciences, Academia Sinica, Taipei, Taiwan; Tzu-Ching Meng, Inst of Biological Chemistry, Academia Sinica, Taipei, Taiwan


Irisin is an Endogenous Negative Regulator of Pathological Cardiac Hypertrophy

Yifan Zhao, Yawei Xu, Wenhui Peng, Shanghai Tenth People’s Hosp, Shanghai, China

Y. Zhao: None. Y. Xu: None. W. Peng: None.

Theranostic nanoparticles for Thrombosed Vessels: H2O2-Activatable Contrast-Enhanced Photoacoustic Imaging and Antithrombotic Therapy

Dongwon Lee, Chonbuk Natl Univ, Jeonju, Korea, Republic of

D. Lee: None.

MicroRNA-21 Affects Platelets and Their Releasate: A Novel Mechanism for the Anti-Fibrotic Effects of MicroRNA-21 Inhibition

Temo Barwari, Sedna Eminaga, Rufang Lu, King’s British Heart Fndn Ctr, London, London, United Kingdom; Paul C Armstrong, Blizzard Inst, Barts and The London Sch of Med & Dentistry, Queen Mary Univ of London, London, United Kingdom; Christian Schulte, Marc Lynch, King’s British Heart Fndn Ctr, King’s Coll London, London, United Kingdom; Melissa V Chan, Blizzard Inst, Barts and The London Sch of Med & Dentistry, Queen Mary Univ of London, London, United Kingdom; Javier Barallobre-Barreiro, Xiaoke Yin, King’s British Heart Fndn Ctr, King’s Coll London, London, United Kingdom; Raimund Pechlaner, Dept of Neurology, Medical Univ Innsbruck, Innsbruck, Austria; Sarah Langley, Duke-NUS Medical Sch, Singapore, Singapore; Mahnaz Sahraei, Marta Fernández-Fuertes, Vascular Biology and Therapeutics Program, Yale Sch of Med, New Haven, CT; Anna Zampetaki, King’s British Heart Fndn Ctr, King’s Coll London, London, United Kingdom; Peter Santer, Dept of Lab Med, Bruneck Hosp, Bruneck, Italy; Timothy D Warner, Blizzard Inst, Barts and The London Sch of Med & Dentistry, Queen Mary Univ of London, London, United Kingdom; Stefan Kiechl, Johann Willeit, Dept of Neurology, Medical Univ Innsbruck, Innsbruck, Austria; Carlos Fernández-Hernando, Yajaira Suárez, Vascular Biology and Therapeutics Program, Yale Sch of Med, New Haven, CT; Ajay M Shah, Manuel Mayr, King’s British Heart Fndn Ctr, King’s Coll London, London, United Kingdom


An m6A Demethylase, FTO Mediates Post-transcriptional mRNA Modifications to Regulate Cardiac and Cardiomyocyte Function

Prabhu Mathiyalagan, Marta Adamiak, Joshua Mayourian, Yaxuan Liang, Yasmine Sassi, Neha Agarwal, Divya Jha, Kiyotake Ishikawa, Shihong Zhang, Erik Kohlbrenner, ICAHN SCHOOL OF MEDICINE AT MOUNT SINAI, New York, NY; Xiaoke Yin, King’s Coll London, London, United Kingdom; Elena Chepurko, Jiqiu Chen, Maria G Trivieri, Rajvir Singh, ICAHN SCHOOL OF MEDICINE AT MOUNT SINAI, New York, NY; Manuel Mayr, King’s Coll London, London, United Kingdom; Kenneth Fish, Djamel Lebeche, Roger J Hajjar, Susmita Sahoo, ICAHN SCHOOL OF MEDICINE AT MOUNT SINAI, New York, NY


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Fast Skeletal Myosin Binding Protein-c Expression in Heart Failure

James W McNamara, Univ of Cincinnati, Cincinnati, OH; Thomas L Lynch IV, Loyola Univ Chicago, Maywood, IL; Taejong Song, Jack L Rubinstein, Sakthivel Sadayappan, Univ of Cincinnati, Cincinnati, OH

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304  
Protein Phosphatase 1 Contributes to Atrial Stunning in Atrial Fibrillation  
Srikanth Perike, Univ of Illinois at Chicago, Chicago, IL;  
Katherina M Alsina, Baylor Coll of Med, Houston, TX; Arvind Sridhar, Univ of Illinois at Chicago, Chicago, IL; Xander H. T Wehrens, Baylor Coll of Med, Houston, TX; Dawood Darbar, Mark D McCauley, Univ of Illinois at Chicago, Chicago, IL.  

305  
AAV9 Mediated Cardiac Bin1 Gene Therapy Attenuates Pressure Overload-induced Heart Failure in Mice  
Kang Zhou, 2nd XiangYa Hosp, ChangSha, China; Sosse Agvanian, Yan Liu, Tara Hitzeman, Robin M. Shaw, Tingting Hong, Smidt Heart Inst, Cedars-Sinai Medical Ctr, Los Angeles, CA.  

306  
Identifying Downstream Effectors of the Extracellular Signal-related Kinase 1/2-controlled Directional Growth Response in Cardiomyocytes  
Kelly M. Grimes, Marjorie Maillet, Jeffery D. Molkentin, Cincinnati Children's Hosp, Cincinnati, OH.  
K.M. Grimes: None. M. Maillet: None. J.D. Molkentin: None.

307  
Focal Adhesion Kinase Activity and Nuclear Localization Controls Vascular Smooth Muscle Cell Proliferation and Intimal Hyperplasia Through a GATA4-Cyclin D1 Axis  
Kyuhro Jeong, Jung-Hyun Kim, James Murphy, Hyeonsoo Park, Erin Ahn, Steve Lim, Univ of South Alabama, Mobile, AL.  
K. Jeong: None. J. Kim: None. J. Murphy: None. H. Park: None. E. Ahn: None. S. Lim: None.

308  
Wfs Inhibits Fibrosis Through Wnt Secretion From the Cardiomyocytes During Heart Regeneration  
Shijie Liu, Texas Heart Inst, Houston, TX; Tanner Monroe, Matthew Hill, Dept of Molecular Physiology and Biophysics, Baylor Coll of Med, Houston, TX; James F Martin, Texas Heart Inst, Houston, TX.  

309  
Small-molecule PDE4 Activators Limit Isoproterenol-induced Hypertrophy in Rat Neonatal Cardiomyocytes  
Ganga Baskar, Abigail Boyd, Lina Abou Saleh, Thomas Boudreaux, Davis Diamond, Univ of South Alabama, Mobile, AL; Puay-Wah Phuan, Alan Verkman, Univ of California San Francisco, San Francisco, CA; Wito Richter, Univ of South Alabama, Mobile, AL.  

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310  
Mechanistic Insights into Duchenne Muscular Dystrophy-associated Cardiomyopathy  
Tara Tassin, Pradeep P.A. Mammen, UT Southwestern Med. Ctr., Dallas, TX.  
T. Tassin: None. P.P. Mammen: 2. Research Grant; Modest: American Heart Association: Member of the Career Development Research Grant Committee, California Institute of Regenerative Medicine: Member of the CIRM Grant Review Committee. 2. Research Grant; Significant: National Institute of Health: Research Grant., 8. Consultant/Advisory Board: Modest; CareDx Inc: Consultant and Site PI for the OAR/D-OAR Registry, Catabasis: Consultant., HeartWare: Consultant., PhaseBio: Consultant and Research Grant.

311  
In vitro Regulation of G-protein Coupled Receptor Kinase 5 (GRK5) Induced Cardiac Hypertrophy by a Novel Interaction With the Phosphatase PHLP2  
Szu-Tsen Yeh, Cristina Zambrano, UC San Diego, La Jolla, CA; Walter Koch, Temple Univ, Philadelphia, PA; Nicole Purcell, UC San Diego, La Jolla, CA.  
S. Yeh: None. C. Zambrano: None. W. Koch: None. N. Purcell: None.

312  
Cardiomyocyte-secreted Signaling Factors Modulate Adipocyte Differentiation And Function  
K.S. Gresham: None. W.J. Koch: None.

315  
Time-resolved Expression of Membrane-targeted Proteins During Lpcsc-cardiomyocyte Differentiation  
Edward Lau, Rajani Shrestha, Stanford Univ, Palo Alto, CA; Cody T Thomas, Univ of Colorado, Aurora, CO; Damon R Williams, Joseph C Wu, Stanford Univ, Palo Alto, CA.  
E. Lau: None. R. Shrestha: None. C.T. Thomas: None. D.R. Williams: None. J.C. Wu: None.

316  
Salusin-α Improved Atherosclerosis in High Cholesterol Diet Fed Rabbits by Inhibiting Smooth Muscle Cells Proliferation and Migration  
Gao Shoucui, Wang Xiaojing, Zhao Shai, Xi’an Jiaotong Univ Cardiovascular Res Ctr, Xi’an, China; Fan Jiayiin, Dept of Molecular Pathology, Interdisciplinary Graduate Sch of Med and Engineering, Univ of Yamanashi, Yamanashi, Japan; Liu Enqi, Xi’an Jiaotong Univ Cardiovascular Res Ctr, Xi’an, China.  
G. Shoucui: None. W. Xiaojing: None. Z. Shai: None. F. Jiayiin: None. L. Enqi: None.
317
Nlrc5 Positively Regulates Intimal Formation via Interaction With PPARa in Vascular Smooth Muscle Cells
Jianhui Zhuang, Shanghai Tenth People’s Hosp, Tongji Univ, Shanghai, China; Peipei Luan, Xinhua Hosp, Shanghai Jiaotong Univ, Shanghai, China; Yawei Xu, Wenhui Peng, Shanghai Tenth People’s Hosp, Tongji Univ, Shanghai, China
J. Zhuang: None. P. Luan: None. Y. Xu: None. W. Peng: None.
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MicroRNA Regulation of G Protein-Coupled Receptor Kinase 2 After Cardiac Injury
Melissa Lieu, Kurt Chuproin, Erhe Gao, Walter J Koch, Temple Univ LKSM, Philadelphia, PA
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Mir-222 is Required for Physiological Hypertrophy but Inhibits Pathological Hypertrophy and Heart Failure
Xiaojun Liu, Hao Li, Chunyang Xiao, Frederico Damilano, Colin Platt, Carolin Lerchenmüller, Han Zhu, Paul Wei, Ashish Yeri, Corrigan-Minehan Heart Ctr and Cardiology Div, Massachusetts General Hosp, Harvard Medical Sch, Boston, MA; Patrick Most, Devision of Molecular and Translational Cardiology, Dept of Intern Med Ill, Univ Hosp Heidelberg, Heidelberg, Germany; Anthony Rosenzweig, Corrigan-Minehan Heart Ctr and Cardiology Div, Massachusetts General Hosp, Harvard Medical Sch, Boston, MA
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321
Miat Long Non-coding Rna Regulates Cardiac Hypertrophy and Ribosomal Expression in Cardiomyocytes
He (Iris) Wang, UCLA, Los Angeles, CA; Zhihua Wang, Wuhan Univ, Renmin Hosp, Wuhan, China; Yifan Wang, Shuxun Ren, Christopher Rau, Yibin Wang, UCLA, Los Angeles, CA
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330
Systemic Blocking Exosome Formation/Release Improves Ischemic Hindlimb Repair in Diabetic db/db Mice
Zhongjian Cheng, Venkata Naga Srikanth Garikipati, Maria Cimini, Yan Tang, Chunlin Wang, May Truongcao, Yujia Ye, Cindy Benedict, Vandana Mallaredy, Walter Koch, Suresh K Verma, David Goukassian, Raj Kishore, Temple University School of Medicine, Philadelphia, PA
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332
Dissecting Mechanisms for Hand2-Dependent Pacemaker Cell Reprogramming
Antonio Fernandez-Perez, Miloni Bhakta, Nikhil V Munshi, UT Southwestern Medical Ctr, Dallas, TX
A. Fernandez-Perez: None. M. Bhakta: None. N.V. Munshi: None.

333
TNF Receptor Modulation of Progenitor Cells and Exosomes for Myocardial Repair
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334
Temporal Regulation of Retinoic Acid Delineates First Heart Field Ventricular and Atrial Cardiac Differentiation of Human Pluripotent Stem Cells
Pengcheng Han, David Wolfson, Heecheol Cho, Emory Univ, Atlanta, GA
P. Han: None. D. Wolfson: None. H. Cho: None.
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Abstracts (continued)

335
Introducing a Multiwell Cardiac μGMEA Platform for Action Potential Recordings from Human iPSC Derived Cardiomyocyte Constructs
Stacie L Edwards, Viviana Zlochiver, Donald M Conrad, Aurora Res Inst, Milwaukee, WI; Ravi Vaidyanathan, Univ of Wisconsin, Madison, WI; Rosy Joshi-Mukherjee, Aurora Res Inst, Milwaukee, WI
S.L. Edwards: None. V. Zlochiver: None. D.M. Conrad: None. R. Vaidyanathan: None. R. Joshi-Mukherjee: None.

336
Human Bone Contains Primitive Cells with Angiogenic and Immunomodulatory Properties
Hajime Kubo, Eric Feldsot, Giana Schena, Alexander Hobby, Yijun Yang, Jaslyn Johnson, Polina Gross, Thomas Sharp, Sadia Mohsin, Remus Berretta, Eric T Choi, Joanne Donnelly, Hydel Christopher, Steven R Houser, Temple Univ, Philadelphia, PA

337
Long Term Safety and Efficacy of a Cardiac Graft in a Swine Model of Heart Failure
Jordan Lancaster, Jen Koevary, Sherry Daugherty, Steven Goldman, Univ of Arizona, Tucson, AZ
J. Lancaster: None. J. Koevary: None. S. Daugherty: None. S. Goldman: None.

338
Maturation of Cardiomyocytes by Rbfox1
Josh Z Lee, Chen Gao, Yibin Wang, UCLA David Geffen Sch of Med, Los Angeles, CA; Ivan Pushkarsky, Dino DiCarlo, UCLA Dept of Bioengineering, Los Angeles, CA; Shan Panikh, Vanderbilt Dept of Pharmacology, Nashville, TN; Bjorn Knollmann, Vanderbilt Sch of Med, Nashville, TN

339
A Novel Strategy to Harness Stem Cell-Intrinsic Mechanobiological Properties for Advanced Tissue Repair: Implication in Cardiac Tissue Injury
Arghya Paul, Aparna Chakravarti, Settimio Pacelli, Univ of Kansas, Lawrence, KS; Rafeeq Ahmed, Univ of Cincinnati, Dept of Pathology and Lab Med, Cincinnati, OH
A. Paul: None. A. Chakravarti: None. S. Pacelli: None. R. Ahmed: None.

340
Cardiomyocyte-Derived Mechanical Signals Function in a Paracrine Manner to Regulate Tissue Stiffness and Myocardial Proliferation
Caimei Zhang, Sabrina Emms, Glenn Radice, Thomas Jefferson Univ, Philadelphia, PA
C. Zhang: None. S. Emms: None. G. Radice: None.

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341
Prolonged Post-Differentiation Culture Influences the Biophysics of Na+ - And Ca2+ Channels in Induced Pluripotent Stem Cell-Derived Cardiomyocytes
Gracious Ross, Larisa Emelyanova, Farhan Rizvi, Ctr for Integrative Res on Cardiovascular Aging, Aurora Res Inst, Milwaukee, WI; Jamil Tajik, Ctr for Integrative Res on Cardiovascular Aging, Aurora Cardiovascular Services, Aurora Sinai/Aurora St. Luke’s Medical Ctrs, Univ of Wisconsin Sch of Med and Public Health, Milwaukee, WI; Arshad Jahangir, Aurora Cardiovascular Services, Aurora Sinai/Aurora St. Luke’s Medical Ctrs, Univ of Wisconsin Sch of Med and Public Health, Milwaukee, WI
G. Ross: None. L. Emelyanova: None. F. Rizvi: None. A. Tajik: None. A. Jahangir: None.

342
The Absence of S-nitrosoglutathione Reductase (GSNOR-⁄-) Reduces Maturation of iPSC-derived Cardiomyocytes
Alessandro Salerno, Raoul Dulce, Konstantinos Hatziistergos, Amarlyis Wanschel, Wayne Balkan, Joshua Hare, Univ of Miami, Miami, FL
A. Salerno: None. R. Dulce: None. K. Hatziistergos: None. A. Wanschel: None. W. Balkan: None. J. Hare: 7. Ownership Interest; Modest; Dr. Hare holds equity in Longeveron. 8. Consultant/Advisory Board; Modest; Dr. Hare is the Chief Scientific Officer, a compensated consultant and advisory board member for Longeveron and is the co-inventor of intellectual property licensed to Longeveron.

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343
Lin28 Enhances Cardiac Repair by Reprogramming Metabolism of Cardiac Progenitor Cells
Ai Wen Tan, Justin Kurian, Daria Harlamova, Tao Wang, Sadia Mohsin, Steven R Houser, Mohsin Khan, Temple Univ, Philadelphia, PA

344
Proteomic Analysis Revealing Association of hiPSC-exosomal Proteins in Epigenetic Inheritance
Yan Tang, Yujia Yue, Venkata N.S. Garikipati, Suresh Verma, Zhongjian Cheng, Maria Cimini, David Goukassian, Chunlin Wang, May Cao, Raj Kishore, Temple Univ, Philadelphia, PA

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Abstracts (continued)

345
Aggregation of Child Cardiac Progenitor Cells into Spheres Activates Notch Signaling and Improves Treatment of Right Ventricular Heart Failure
David Trac, Chunhui Xu, Michael E Davis, Emory Univ, Atlanta, GA
D. Trac: None. C. Xu: None. M.E. Davis: None.
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346
A Standard Flow Cytometry Protocol for Assessing Human Pluripotent Stem Cell-derived Cardiomyocyte Identity by Troponin Positivity
Matthew Waas, Ranjuna Weerasekera, Erin M Kropp, Medical Coll of Wisconsin, Milwaukee, WI; Marisol Romero, Northwestern Univ, Chicago, IL; Ellen Poon, Kenneth R Boheler, Hong Kong Univ, Hong Kong, China; Paul W Burridge, Northwestern Univ, Chicago, IL; Rebekah L Gundy, Medical Coll of Wisconsin, Milwaukee, WI
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347
Mechanistic Basis of Neonatal Heart Regeneration Revealed by Transcriptome and Histone Modification Profiling
Zhaoxing Wang, Miao Cui, Wenduo Ye, Wei Tan, Giovanni Botten, John McAnaly, John M. Shelton, Min S. Kim, Venkat Malladi, Beibei Chen, Rhonda Basset-Duby, Ning Liu, Eric N. Olson, UT Southwestern, Dallas, TX

348
Epigenetic Regulation in Heart Regeneration
Shuo Tian, Ienglam Lei, Univ of Michigan Medical Sch, Ann Arbor, MI; Peter X Ma, Univ of Michigan Dental Sch, Ann Arbor, MI; Zhong Wang, Univ of Michigan Medical Sch, Ann Arbor, MI
S. Tian: None. I. Lei: None. P.X. Ma: None. Z. Wang: None.

349
Sall4 Blocks Cardiac Trans-differentiation but Stimulates Cardiac Stem-like Cell (iPSC) Generation and Improve Post MI Function In Vivo
Lina Yang, Pratap Pinnamaneni, Hong Gao, Deepthi Sanagasetti, Vivek Singh, Megumi Mathison, Todd Rosengart, Jianchang Yang, Baylor Coll of Med, Houston, TX

350
Human Cardiac Fibroblasts Have Angiogenic Inhibitory Phenotypes Through Their Expressing Lypd1 In Vitro
Katsuhisa Matsuura, Shinako Masuda, Tatsuya Shimizu, TOKYO WOMENS MEDICAL UNIVERSITY, Tokyo, Japan

351
Methylglyoxal Increases mTOR Activity Without Altering Autophagy in Animal Model of Acute Myocardial Infarction
Alessandra Machado, Univ Federal Do Rio Grande do Sul, Porto Alegre, Brazil; Bianca Fracasso, Hosp de Clinicas de Porto Alegre, Porto Alegre, Brazil; Juliana Rangel, Graziela Pinto, Niara Medeiros, Univ Federal Do Rio Grande do Sul, Porto Alegre, Brazil; Mariana Breidenbach, Daniel Caetano, Hosp de Clinicas de Porto Alegre, Porto Alegre, Brazil; Luiz Rohde, Andreia Biolo, Univ Federal Do Rio Grande do Sul, Porto Alegre, Brazil; Michael Andrades, Hosp de Clinicas de Porto Alegre, Porto Alegre, Brazil

352
Mani, a Structurally Unique Redox-sensitive Chaperone, Restores Er-protein Folding in the Ischemic Heart
Adrian Arrieta, Erik A. Blackwood, Cathrine Aivati, Winston T. Stauffer, Michelle Santo Domingo, Alina S. Bilal, Anup V. Sarakki, Donna J. Therauf, San Diego State Univ, San Diego, CA; Shirin Doroudgar, DZHK (German Ctr for Cardiovascular Res), Partner Site Heidelberg/Mannheim, Heidelberg, Germany; Christopher C. Glembotski, San Diego State Univ, San Diego, CA

353
Nucleolar Enlargement and Perturbed Ribosome Biogenesis Are Cellular Hallmarks of Cardiac Aging
Collin Matsumoto, Trang Hua, Univ of California at Davis, Davis, CA; Mark Sussman, San Diego State Univ, San Diego, CA; Nirmala Hariharan, Univ of California at Davis, Davis, CA
C. Matsumoto: None. T. Hua: None. M. Sussman: None. N. Hariharan: 2. Research Grant; Significant; American Heart Association Scientist Development Grant.
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354
Accelerated Autophagy is Required for Doxorubicin-induced Oxidative Damage and Cardiomyopathy
Ashley J Smuder, Univ of South Carolina, Columbia, SC; Oh-Sung Kwon, Univ of Florida, Gainesville, FL; Erin E Talbert, Ohio State Univ, Columbus, OH; Dernetta D Christou, Jeung-Ki Yoo, Univ of Florida, Gainesville, FL; Moon-Hyon Hwang, Univ of Florida, Gainesville, FL; Andreas N Kavazis, Auburn Univ, Auburn, AL

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355
A Systematic Review of Medication Adherence Interventions for Heart Failure Patients
Lila de Tantillo, Juan M. Gonzalez, Johis Ortega, Univ of Miami, Coral Gables, FL
L. de Tantillo: 2. Research Grant; Modest; Beta Tau Chapter of STTI. J.M. Gonzalez: None. J. Ortega: None.

360
Effective Three-element Windkessel Model based on Doppler Ultrasound Images for Noninvasive Quantification of Trans-stenotic Pressure Gradient in Aortorenal System
Monsurul Khan, Indiana Univ Purdue Univ Indianapolis, Indianapolis, IN; Alan P. Sawchuk, Indiana Univ Sch of Med, Indianapolis, IN; Anurag Deb, Rou Chen, Indiana Univ Purdue Univ Indianapolis, Indianapolis, IN; Raghu L. Motaganahalli, Indiana Univ Sch of Med, Indianapolis, IN; Xin Fang, Dept Of Vascular Surgery, Hangzhou First People's Hosp, Hangzhou, China; Huidan(Whitney) Yu, Indiana Univ Purdue Univ Indianapolis, Indianapolis, IN
M. Khan: None. A.P. Sawchuk: None. A. Deb: None. R. Chen: None. R.L. Motaganahalli: None. X. Fang: None. H. Yu: None.

361
Analysis of Cardiotoxic Mechanisms Associated With Tyrosine Kinase Inhibitor Ponatinib

362
Aortic Valve Hamartoma: A Rare Valvular Tumor Mimicking Infective Endocarditis
Nethuja Salagundla, Nooraldin Merza, Islam Asm, Alzeerah Masoud, Muath Alsharif, TTVHSC, Amarillo, TX
N. Salagundla: None. N. Merza: None. I. Asm: None. A. Masoud: None. M. Alsharif: None.

363
The Brain - Pancreas Axis: An Alzheimer Nanoplaque Study
Guenter Siegel, Charite - Univ Clinic Berlin, Berlin, Germany; Stephanie Hammersen, Clinic Friedrichshain, Dept of Neurosurgery, Berlin, Germany; Angela Becker, Charite - Univ Clinic Berlin, Berlin, Germany; Dan Georgescu, Clinic Koenigsfelden for Gerontology and Neuropsychiatry, Brugg, Switzerland; Irit Lubitz, Chaim Sheba Medical Ctr, Ramat Gan, Israel; Eugeny Ermilov, Charite - Univ Clinic Berlin, Berlin, Germany; Martin Malmsten, Univ of Uppsala Biomedical Ctr, Uppsala, Sweden; Ramsey Saunders, St. George's Univ Sch of Arts and Sciences, True Blue, Grenada; Bjorn Lindman, Univ of Lund, Lund, Sweden

364
Metabolic Syndrome Induced by High Fat/high Fructose Diet in C57bl/6 Mice Impaired Cardiac Remodeling During Pregnancy
Yijun Yang, Yunchiel Joo, Tao Wang, Giulia Borghetti, Shavonn Harper, Christopher Bryan, Sadia Mohsin, Steven R Houser, Temple Univ, Philadelphia, PA

365
Potential Relationship Between Nitric Oxide Bioactivity And Kidney Function Following Cardio-pulmonary Bypass
Andrew J Moyal, Alfred Hausladen, Ryan Nazemian, Lin Zhu, Edwin Pacheco Colon, James Reynolds, Case Western Reserve Univ, Cleveland, OH

366
The Role of Mitochondrial Calcium Uniporter Complex in Cardiac Contractility and Function

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Abstracts (continued)

371
Cardiac Endocrinology: Biology of a Heart-derived Hormone That Regulates Body Growth
Liming Pei, Children’s Hosp of Philadelphia/Univ of Pennsylvania, Philadelphia, PA
L. Pei: None.

372
Master Transcriptional Regulators of Cardiac Gene Expression in Heart Failure
Christoph D Rau, Jessica Wang, James Ohearn, Rozeta Avetisyan, Aldons J Lusis, Yibin Wang, UCLA, Los Angeles, CA

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373
The Molecular Consequence of a Polymorphic 25bp Deletion in Intron 32 of MYBPC3, Specific to South Asians
Jennifer A Schwanekamp, Shiv Kumar Viswanathan, Univ of Cincinnati, Cincinnati, OH; Parth N Patel, Harvard Medical Sch, Boston, MA; Sangeetha Kandoi, Univ of Cincinnati, Cincinnati, OH; Ratan Bhat, AstraZeneca Cardiovascular and Metabolic Diseases, Gothenburg, Sweden; Rama Shanker Verma, Indian Inst of Technology, Madras, India; Christine E Seidman, Jonathan G Seidman, Harvard Medical Sch, Boston, MA; Winston Shim, Natl Heart Res Inst, Singapore, Singapore; Ralph Knöll, AstraZeneca Cardiovascular and Metabolic Diseases IMED Biotech Unit, Gothenburg, Sweden; Saktivel Sadayappan, Univ of Cincinnati, Cincinnati, OH

374
Gpr68 Senses Blood Flow and is Essential for Vascular Physiology
Jie Xu, Jayanti Mathur, Genomics Inst of Novartis Res Fndn, San Diego, CA; Emile Vessieres, MITOVASC institute, CARFI facility, CNRS UMR 6015; INSERM U1083; Angers Univ, Angers, France; Scott Hammack, Genomics Inst of Novartis Res Fndn, San Diego, CA; Keiko Nonomura, The Scripps Res Inst, San Diego, CA; Julie Favre, Linda Grimaud, MITOVASC institute, CARFI facility, CNRS UMR 6015; INSERM U1083; Angers Univ, Angers, France; Matt Petrus, Genomics Inst of Novartis Res Fndn, San Diego, CA; Kailan Francisco, The Scripps Res Inst, San Diego, CA; Jingyuan Li, Yan Lee, Fu-li Xiang, James Mainquist, Genomics Inst of Novartis Res Fndn, San Diego, CA; Stuart Cahalan, The Scripps Res Inst, San Diego, CA; Anthony Orth, John Walker, Genomics Inst of Novartis Res Fndn, San Diego, CA; Shang Ma, Viktor Lukacs, The Scripps Res Inst, San Diego, CA; Laura Bordone, Michael Bandell, Bryan Laffitte, Genomics Inst of Novartis Res Fndn, San Diego, CA; Yan Xu, Indiana Univ Sch of Med, Indianapolis, IN; Shu Chien, Depts of Bioengineering and Med, Inst of Engineering In Med, Univ of California San Diego, La Jolla, CA; Daniel Henrion, MITOVASC institute, CARFI facility, CNRS UMR 6015; INSERM U1083; Angers Univ, Angers, France; Ardem Patapoutian, The Howard Hughes Medical Inst, The Scripps Res Inst, San Diego, CA

375
Defining a Unifying Mechanism for Select Cardiomyopathy-Linked Variants of Desmoaplin
Maegen Ackermann, Heather Manning, The Ohio State Univ, Columbus, OH; Ronald Ng, Yale Univ, New Haven, CT; Taylor Albertelli, James Madison Univ, Harrisonburg, VA; Prameela Jyothi Bobbili, Tyler Stevens, The Ohio State Univ, Columbus, OH; Daniel Jacoby, Yale Univ, New Haven, CT; Paul Janssen, Ahmet Kilic, The Ohio State Univ, Columbus, OH; Nathan Wright, Nathan Wright, James Madison Univ, Harrisonburg, VA; Yibing Qyang, Stuart Campbell, Yale Univ, New Haven, CT

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377 Modeling Cadmium-induced Cardiotoxicity Using Human Pluripotent Stem Cell-derived Cardiomyocytes
Jiaxi Shen, Xiaochun Wang, Danni Zhou, Tongyu Li, Ling Tang, Tingyu Gong, Jun Su, Ping Liang, Zhejiang Univ, Hangzhou, China

378 Evaluation of Patient Specific MTERF4 Variants in Gene Edited Human iPSC-derived Cardiomyocytes
Maribel Marquez, Medical Coll of Wisconsin, Milwaukee, WI; Chris McDermott-Roe, Univ of Pennsylvania, Philadelphia, PA; Mike Grzybowski, Daniel Helbling, Medical Coll of Wisconsin, Milwaukee, WI; David P. Dimmock, Rady Children's Inst for Genomic Med, San Diego, CA; James W. Verbsky, Aron M. Geurts, Medical Coll of Wisconsin, Milwaukee, WI

379 Effects of Microgravity on Human Induced Pluripotent Stem Cell-Derived Cardiomyocyte Structure and Function
Alexa Wnorsowski, Arun Sharma, Haodong Chen, Haodi Wu, Ning-Yi Shao, Jared M. Churko, Elena Matsa, Stanford Univ, Stanford, CA; Stefanie Countryman, Univ of Colorado Boulder, Boulder, CO; Kathleen Rubins, NASA Johnson Space Ctr, Houston, TX; Sean M. Wu, Stanford Univ, Stanford, CA; Peter H.U. Lee, The Ohio State Univ, Columbus, OH; Joseph C. Wu, Stanford Univ, Stanford, CA

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384 Pirfenidone Protects the Heart Through Immune Modulation of Subsets of Cardiac B Lymphocytes
Luigi Adamo, Washington Univ in St Louis, Saint Louis, MO.
L. Adamo: 7. Ownership Interest; Modest; I have co-founded a start-up company to further develop the drug described in this abstract.

385 Characterization of Cellular Infiltrate in Bioprosthetic Aortic and Mitral Valves
Sabin J Bozso, Ratnadeep Basu, Benjamin Adams, Gavin Oudit, Darren H Freed, Jayan Nagendran, Michael C Moon, Jeewan Nagendran, Univ of Alberta, Edmonton, AB, Canada

386 Sex Differences in Vitamin D Alter Inflammation During Heart Disease
Katelyn Ann Bruno, Jessica Mathews, Erika Douglass, Anneliese Hill, Leslie Cooper, Jonathan Hoyne, DeLisa Fairweather, Mayo Clinic, Jacksonville, FL

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387 Lymphatic Endothelial Cells Derived Exosomes Promote Neolymphangiogenesis After Injury
Maria Cimini, Giulia Borghetti, Steven Houser, Raj Kishore, Temple Univ.Lewis Katz Sch, Philadelphia, PA
M. Cimini: None. G. Borghetti: None. S. Houser: None. R. Kishore: None.

388 Small GTPase Rnd3 Fine-tunes Inflammatory Response in Myocardial Infarction
Wenjiao Li, Weijia Luo, Kelsey Andrade, Jiang Chang, Texas A&M Univ, Houston, TX
W. Li: None. W. Luo: None. K. Andrade: None. J. Chang: None.

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390 Mitochondrial ROS Drive Sudden Cardiac Death and Chronic Proteome Remodeling in Heart Failure
Swati Dey, Johns Hopkins Univ, Baltimore, MD; Deeptankar DeMazumder, Univ of Cincinnati, Cincinnati, OH; Brian O'Rourke, Johns Hopkins Univ, Baltimore, MD
S. Dey: 2. Research Grant; Significant; AHA Postdoctoral fellowship, Department of Defense. D. DeMazumder: 2. Research Grant; Significant; NIH, NHLBI. B. O'Rourke: 2. Research Grant; Significant; NIH, NHLBI.

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391 Identifying the Novel Role of a Presenilin-2 Mutation in Arrhythmogenicity Using Patient Specific Induced Pluripotent Stem Cells Derived Cardiomyocytes
Chi Keung Lam, Ning Ma, June-Wha Rhee, Tomoya Kitani, Joe Zhang, Rajani Shrestha, Haodi Wu, Joseph C Wu, Stanford Univ, Stanford, CA
C. Lam: None. N. Ma: None. J. Rhee: None. T. Kitani: None. J. Zhang: None. R. Shrestha: None. H. Wu: None. J.C. Wu: None.
392
Chronic Dantrolene Treatment Attenuates Cardiac Dysfunction and Reduces Atrial Fibrillation Inducibility in a Rat Myocardial Infarction Heart Failure Model

Colleen Nofi, Kuo Zhang, Ying Li, Allan Migirov, Kaie Ojanaa, Martin Gerdes, New York Inst of Technology Coll of Osteopathic Med, Old Westbury, NY

393
Is High Grade Atrioventricular Block Reversible in Hypothyroidism

Nnamdi Arinze Nwafo, Rapid City Regional Hosp, Rapid City, SD
N.A. Nwafo: None.

394
The Role of Camkii-dependent Late Sodium Current In Ischemia/reperfusion-associated Arrhythmogenesis

Amara Greer-Short, Taylor Howard, Tony Satroplus, Nehal Patel, Drew Nassal, Peter Mohler, Thomas Hund, Ohio State Univ, Columbus, OH

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395
Pioglitazone and Glucagon-like Peptide 1 Receptor Agonist Mitigate Adverse Postinfarction Left Ventricular Remodeling in Lean Mice When Administered After the Infarct Independent of Changes in Infarct Size

Allen M Andres, Juliana Germano, Chengqun Huang, Kyle C Tucker, Yang Song, Jon Sin, Roberta A Gottlieb, Robert M Mentzer, Cedars-Sinai Medical Ctr, Los Angeles, CA

397
Preventing Cardiomyopathy of Muscular Dystrophy Through Antagonism of the Thromboxane/Prostanoid Receptor

Erica J. Carrier, Cristi L. Galindo, Kyungssoo Kim, Vanderbilt Univ Medical Ctr, Nashville, TN; Ines Macias-Perez, Leo Paviv, Cumberland Pharmaceuticals, Nashville, TN; Jonghyun J. Shin, Bjorn C. Knollmann, Jonathan H. Soslow, Larry W. Markham, James D. West, Vanderbilt Univ Medical Ctr, Nashville, TN
E.J. Carrier: 2. Research Grant; Significant; This work was partially funded by Cumberland Pharmaceuticals Inc (CPI), who own ifetroban, the research drug in question. 3. Other Research Support; Significant; Cumberland Pharmaceuticals provided us with the research drug ifetroban at no cost. C.L. Galindo: None. K. Kim: None. I. Macias-Perez: 1. Employment; Significant; I.M.-P. is employed by CPI, who manufacture ifetroban and, along with Vanderbilt University, own its intellectual property. 7. Ownership Interest; Significant; I.M.-P. owns stock in CPI. L. Paviv: 1. Employment; Significant; L.P. is employed by CPI. 7. Ownership Interest; Significant; L.P. owns stock in CPI. J.J. Shin: None. B.C. Knollmann: None. J.H. Soslow: None. L.W. Markham: None. J.D. West: 2. Research Grant; Significant; J.W. has previously received research funding from Cumberland Pharmaceuticals. 3. Other Research Support; Significant; J.W. receives the research drug ifetroban free of charge from Cumberland Pharmaceuticals.

398
GLP-1 Receptor Agonist Administered After the Infarct Suppresses miR-33 Expression in Lean Mice Subjected to Permanent Coronary Artery Occlusion

Juliana de F. Germano, Chengqun Huang, Yang Song, Jon Sin, Robert M. Mentzer Jr., Roberta A. Gottlieb, Allen M. Andres, Smidt Heart Inst, Cedars-Sinai Medical Ctr, Los Angeles, CA

399
Inhibition of NFE2L2-ARE Pathway by mtROS Contributes to Development of Cardiomyopathy and Left Ventricular Dysfunction in Chagas Disease

Jake J Wen, Nisha J Garg, Univ of Texas Medical Branch, Galveston, TX
J.J. Wen: None. N.J. Garg: None.

400
ERBB2 Inhibition Leads to Cardiac Dysfunction

Manveen K Gupta, Sathyamangla V Naga Prasad, Cleveland Clinic, Cleveland, OH
M.K. Gupta: None. S.V. Naga Prasad: None.

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402
Exclusion of Major Cell Types in the Murine Heart Enriches for Cardiac Pericytes

Shuin Park, Justin Langerman, Reza Ardehali, Univ of California, Los Angeles, Los Angeles, CA
S. Park: None. J. Langerman: None. R. Ardehali: None.

404
Sphingosine-1-phosphate Receptor 1 Inhibits Pathological Cardiac Remodeling Through Histone Deacetylases

Bisheng Zhou, Jayne Wolfe, Bianca Lavelle, Rishi Arora, J. Andrew Wasserstrom, Northwestern Univ, Chicago, IL; Jerold Chun, Sanford Burnham Prebys Medical Discovery Inst, La Jolla, CA; Lisa D Wilsbacher, Northwestern Univ, Chicago, IL
405
Antioxidant Treatment Prevents Profibrotic Changes and Cardiac Dysfunction In Prenatal Alcohol Exposure
Van K Ninh, Elia C El Hajj, Jason D Gardner, LSUHSC-NO, New Orleans, LA

406
Loss of Sigmar1 Leads to Impaired Mitochondrial Respiration, Altered Mitochondrial Dynamics and Development of Cardiac Contractile Dysfunction
Chowdhury S Abdullah, Shafiul Alam, Dept of Pathology and Translational Pathobiology, Shreveport, LA; Richa Aishwarya, Dept of Molecular and Cellular Physiology, Shreveport, LA; Sumitra Miriyala, Manikandan Panchatcharam, Dept of Cellular Biology and Anatomy, Shreveport, LA; Anthony W Orr, Dept of Pathology and Translational Pathobiology, Dept of Cellular Biology and Anatomy, Dept of Molecular and Cellular Physiology, Shreveport, LA; Jeanne James, Children’s Hosp of Wisconsin-Milwaukee, Milwaukee, WI; John N. Lorenz, Dept of Molecular and Cellular Physiology, Cincinnati, OH; Md. Shenuarin Bhuiyan, Bhuviyan, Dept of Pathology and Translational Pathobiology, Dept of Molecular and Cellular Physiology, Shreveport, LA

407
Defective Branched Chain Amino Acid Catabolism Impairs Exercise Endurance
Lauren E Abell, Univ of Washington, Seattle, WA
L.E. Abell: None.

408
Defective Mitochondrial Dynamics Contribute to Cardiac Contractile Dysfunction in Desminopathy
Shafiul Alam, Chowdhury S. Abdullah, Dept of Pathology and Translational Pathobiology, Louisiana State Univ Health Sciences Ctr-Shreveport, Shreveport, LA; Richa Aishwarya, Dept of Molecular and Cellular Physiology, Louisiana State Univ Health Sciences Ctr-Shreveport, Shreveport, LA; Sumitra Miriyala, Manikandan Panchatcharam, Dept of Cellular Biology and Anatomy, Louisiana State Univ Health Sciences Ctr-Shreveport, Shreveport, LA; Chi Fung Lee, Arianne Caudal, Lauren Abell, G. A. Nagana Gowda, Rong Tian, Albert M Levin, Henry Ford Health System, Detroit, MI

409
Ablation of Endothelial Sirt3 Exacerbates Pressure Overload-induced Heart Failure
Xiaochen He, Heng Zeng, Jian Xiong Chen, Dept of Pharmacology and Toxicology, Univ Mississippi Medical Ctr, Jackson, MS
X. He: None. H. Zeng: None. J. Chen: None.

410
Prostaglandin E2 Reduces Carnitine Palmitoyltransferase 2 in Adult Mouse Cardiomyocytes
Pamela Harding, Timothy D Bryson, Henry Ford Hosp, Detroit, MI; Indrani Datta, Yun Wang, Albert M Levin, Henry Ford Health System, Detroit, MI

411
Mitochondrial NAD(H) Signaling in Cardiac Physiology and Pathology
Qingxun Hu, Pei Wang, Rong Tian, Wang Wang, Mitochondria and Metabolism Ctr, Univ of Washington, Seattle, WA

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412
The Role of ETC Complexes I and II in the Respirasome Assembly in Heart Mitochondria
Sehwan Jang, Sabzali Javadov, UPR Sch of Med, San Juan, PR
S. Jang: None. S. Javadov: None.

413
NAD+-dependent Pathogenic Mechanisms and Metabolic Interventions for Mitochondrial Disease and its Associated Cardiomyopathy
Chi Fung Lee, Arianne Caudal, Lauren Abell, G. A. Nagana Gowda, Rong Tian, Univ of Washington, Seattle, WA

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Transcriptome Analysis by RNA Sequencing of Left Ventricular Tissue from Mice Fed a High-Fat Diet
Stephen W Luckey, Seattle Univ, Seattle, WA; Jesse Riordan, Pacific Northwest Res Inst, Seattle, WA; Courtney Olson, Seattle Univ, Seattle, WA; Joseph Nadeau, Pacific Northwest Res Inst, Seattle, WA
S.W. Luckey: None. J. Riordan: None. C. Olson: None. J. Nadeau: None.
415
Lin28a Regulates Pathological Cardiac Hypertrophic Growth Through Pck2-mediated Enhancement of Anabolic Synthesis
Hong Ma, Shuo Yu, Univ of North Carolina, Chapel Hill, NC; Xiaojing Liu, Duke Univ, Chapel Hill, NC; Yingao Zhang, Thomas Fakadej, Ziqing Liu, Chaoying Yin, Univ of North Carolina, Chapel Hill, NC; Jason W Locasale, Duke Univ, Chapel Hill, NC; Joan M Taylor, Li Qian, Jiandong Liu, Univ of North Carolina, Chapel Hill, NC
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416
MnSod Cardiomyocyte-specific Knockout Live Up to Four Months: Role in Heart Failure Development and Progression
Manikandan Panchatcharam, Susmita Bhattarai, Sudha Sharma, Timothy Michael LaBrie, Hailey D Tupper, Md. Shenuarin Bhuiyan, Mini Chandra, Sumitra Miriyala, LSUHSC - Shreveport, Shreveport, LA

417
Targeting the NAD/NADH Ratio for Heart Failure Therapy
Matthew A Walker, Univ of Washington, North Bend, WA; Outi Villet, Rong Tian, Univ of Washington, Seattle, WA
M.A. Walker: None. O. Villet: None. R. Tian: None.

418
Perm1 is a Novel Regulator of Mitochondrial Energetics in Cardiomyocytes
Junco S Warren, Univ of Utah, Salt Lake Cty, UT; Shin-ichi Oka, Rutgers New Jersey Medical Sch, Newark, NJ; Keiko Cawley, Amira Sabry, Christopher Stubben, Brian Dalley, Stavros Drakos, Univ of Utah, Salt Lake Cty, UT; Junichi Sadoshima, Rutgers New Jersey Medical Sch, Newark, NJ

419
Deep Sequencing Provides Evidence Of Mitochondrial Abnormalities In Right Ventricular Failure In Pulmonary Arterial Hypertension
Francois Potus, Charles CT Hindmarch, Stephen L Archer, queens university, kingston, ON, Canada
F. Potus: None. C.C. Hindmarch: None. S.L. Archer: None.

420
RIP3 Interacts with Mitofilin in the Inner Membrane of Mitochondria to Induce Cardiomyocytes Necrosis After Ischemia/reperfusion
Yansheng Feng, Ngonidzashe B. Madungwe, Nathalie Tombo, Liu Li, Jean Chrisostome Bopassa, UTHSCSA, San Antonio, TX
Y. Feng: None. N. Madungwe: None. N. Tombo: None. L. Li: None. J. Bopassa: None.
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421
High-throughput In vitro Ischemia-reperfusion Model with Real-time Monitoring of Cellular Oxygenation and Reactive Oxygen Species Generation
Christopher Fleming, Ncardia, Plymouth Meeting, PA; Conn Carey, Luxcel Biosciences, Cork, Ireland; Ralf Ketenhoffen, Ncardia, Cologne, Germany; Mario Schneider, BMG LABTECH, Ortenberg, Germany; James Hynes, Luxcel Biosciences, Cork, Ireland

422
Recognition of Pharyngeal Pain as an Angina Equivalent
Salih Nigel Grevious, Marcelo Fernandes, Manuel Rivera, Univ of Miami Miller Sch of Med/Jackson Memorial Hosp, Miami Beach, FL
S.N. Grevious: None. M. Fernandes: None. M. Rivera: None.

423
Cardiomyocyte-Specific Epidermal Growth Factor Receptor Deletion Differentially Alters Cardiac Contractility and Remodeling During Physiologic versus Pathologic Development
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424
Knockdown of Nerve Growth Factor in Spinal Cord Reduces Myocardial Reperfusion Injury by Suppressing Ischemic Nociceptive Signaling Transmission
Shufang He, Mengyun Dou, Zhenxiao Ma, Ye Zhang, The Second Hosp of Anhui Medical Univ, Hefei, China
S. He: None. M. Dou: None. Z. Ma: None. Y. Zhang: None.
Abstracts (continued)

425
A Pro-reductive Redox State Protects the Myocardium from Isoproterenol-Induced Pathological Remodeling in Nrf2 Transgenic Mouse
Gobinath Shanmugam, Anil Kumar Challa, Silvio H Litovsky, Univ. Alabama at Birmingham, Birmingham, AL; Jolyn Fernandes, Dean P Jones, Emory Univ, Atlanta, GA; Rajasekaran Namakkal-Soorapan, Sch of Med, Univ. Alabama at Birmingham, Birmingham, AL

426
Stress-induced Kinase Targets of Cardioprotective 3',4'-dihydroxyflavonol in Injured Myocardium
Dominic Richards, Yvonne Yeap, Melissa Reichelt, Univ of Queensland, St Lucia, Australia; Phillip van der Peet, Spencer J Williams, Univ of Melbourne, Parkville, Australia; Owen L Woodman, RMIT Univ, Bunjodra, Australia; Grant McLachlan, Amaron Bio Pty Ltd, East Melbourne, Australia; Dominic Ng, Univ of Queensland, St Lucia, Australia
D. Richards: None. Y. Yeap: None. M. Reichelt: None. P. van der Peet: None. S.J. Williams: None. O.L. Woodman: None.
M. McLachlan: 1. Consultant/Advisory Board; Significant; Amaron Bio Pty Ltd. G. McLachlan: 1. Employment; Significant; Amaron Bio Pty Ltd. D. Ng: 3. Other Research Support; Significant; Amaron Bio Pty Ltd.

427
Inhibition of Myocardial Romk Channels Blocks Ischemic Preconditioning Induced Cardio-protection
Mohun Ramratnam, Warren Linnerooth, John W Kyle, Brandi A Weidmeyer, Emily D Lacount, Nilal Ahmad, Univ of Wisconsin, Madison, WI; Alexander Pasternak, Merck & Co, Kenilworth, NJ; Elizabeth M McNally, Northwestern Univ, Chicago, IL; Jonathan C Makielski, Univ of Wisconsin, Madison, WI

428
Cytoglobin: A Novel Regulator of the DNA Damage Response Within Cardiomyocytes
Sarveept Singh, Dylan Rivas, Diana Canseco, Melanie Weiler, Terry Gemelli, Jian Huang, Tara Tassin, John Shelton, James A Richardson, Hesham Sadek, Pradeep P Mammen, UT Southwestern Medical Ctr, Dallas, TX
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429
Intensive Necroptosis Due to Enhanced RIP3-CaMKII Signaling Contributes to Diabetic Myocardial Ischemic Susceptibility
Han Xue, Chen Li, Zheng Yang, Yishi Wang, Nan Mu, Heng Ma, Fourth Military Medical Univ, Xi’an, China
H. Xue: None. C. Li: None. Z. Yang: None. Y. Wang: None. N. Mu: None. H. Ma: None.

431
KLF15 Regulates the Circadian Susceptibility to Ischemia Reperfusion Injury in the Heart
Le Li, Hui Li, Chih-Liang Tien, Baylor Coll of Med, Houston, TX; Rongli Zhang, Xudong Liao, Mukesh K. Jain, Case Cardiovascular Res Inst, Dept of Med, Harrington Heart and Vascular Inst, Univ Hosp Cleveland Medical Ctr, Cleveland, OH; illei zhang, Baylor Coll of Med, Houston, TX
L. Li: None. H. Li: None. C. Tien: None. R. Zhang: None. X. Liao: None. M. Jain: None. L. Zhang: None.

434
A Diet Rich in Oleic Acid, as Primary Lipid Source, Attenuates the Progressive Functional Decline in Hypertrophied Hearts During Pathological Stress
Andrew N Carley, E. Douglas Lewandowski, Ohio State Univ Medical Ctr, Columbus, OH
A.N. Carley: None. E. Lewandowski: None.

435
Post-transcriptional Regulation of Tropomyosin Isoforms Altered in Human Heart Diseases
Jun Cao, KarryAnne Belanger, Curtis Nutter, Ping Ji, Ela Jaworski, Nathan Elrod, Sunil Verma, Eric Wagner, Andrew Routh, Muge N. Kuyumcu-Martinez, Univ of Texas Medical Branch, Galveston, TX
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436
Gender-based Differences in Preoperative Levels of Circulating MicroRNA in Patients Who Developed Postoperative Atrial Fibrillation
Farhan Rizvi, Ctr for Integrative Res on Cardiovascular Aging, Aurora Res Inst, Milwaukee, WI; Susan Olet, Aurora Res Inst, Milwaukee, WI; Stacie Edwards, Larisa Emelyanova, Gracious Ross, Ctr for Integrative Res on Cardiovascular Aging, Aurora Res Inst, Milwaukee, WI; Bijoy K Khanderia, Aurora Cardiovascular Services, Aurora Sinai/Aurora St, Luke’s Medical Ctrs, Univ of Wisconsin Sch of Med and Public Health, Marcus Family Fund for Echocardiography (ECHO) Res and Education, Milwaukee, WI; Francis X Downey, David C Kress, Aurora Cardiovascular Services, Aurora Sinai/Aurora St, Luke’s Medical Ctrs, Univ of Wisconsin Sch of Med and Public Health, Milwaukee, WI; A Jamil Tajik, Ctr for Integrative Res on Cardiovascular Aging, Aurora Cardiovascular Services, Aurora Sinai/Aurora St, Luke’s Medical Ctrs, Univ of Wisconsin Sch of Med
The Cardiomyocyte Diastolic Stiffness and Contractility are Inversely Related to the Size of Titin: A Cellular Work Loop Study of Single Intact Cardiomyocytes

Methawasin, Joshua Strom, Univ of Arizona, Tucson, AZ; Michiel Helmes, IonOptix Lic, Milton, MA; Henk Granzier, Univ of Arizona, Tucson, AZ

Methawasin: None. Strom: None. Helmes: None. H. Granzier: None.

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Abstracts (continued)

450
Global Phosphopeptide Analyses Identifies a Profile that Distinguishes Advanced Heart Failure Patients Capable of Cardiac Recovery Following LVAD Unloading
Christopher Tracy, Aman Makaju, Sutip Navankasattusas, Lauren McCreath, Nikolaos Diakos, Craig Selzman, Stavros Drakos, Sarah Franklin, Univ of Utah, Salt Lake Cty, UT

451
Impact of Resistant Starch Diet on Atherosclerosis in the Presence of Chronic Kidney Disease
Oleg Karaduta, Boris Zybavlov, Univ of Arkansas for Medical Sciences, Little Rock, AR
O. Karaduta: None. B. Zybavlov: None.

452
Alpha-Ketoglutarate Dehydrogenase Inhibition by the Oncometabolite D2-HG Causes Proteome and Metabolome Remodeling in Myocytes
Anja Karlstaedt, Heidi Vitrac, McGovern Medical Sch at UTHealth, Houston, TX; Koen Raedschelders, Weston R. Spivia, Cedars-Sinai Medical Ctr, Los Angeles, CA; Daniel M. Radhika Khanna, McGovern Medical Sch at UTHealth, Houston, TX; Jennifer VanEyk, Cedars-Sinai Medical Ctr, Los Angeles, CA; Heinrich Taegtmeyer, McGovern Medical Sch at UTHealth, Houston, TX

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453
Young Adult Female Dahl Salt-Sensitive Rats with Heart Failure with Preserved Ejection Fraction have a Distinct Survival Advantage over Age-Matched Afflicted Males

454
Role of Foxf1 During Protein Quality Control in Cardiomyocytes
Bidur Bhandary, Qing Hang Meng, Na Xu, Hanna Osinska, Kritton Shay-Winkler, James Gulick, Jeffrey Robbins, Heart Inst, Cincinnati, OH

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455
Role of Transcription Co-Factor Friend of GATA 2 (FOG2) in a Hypertensive-Diabetic Mouse Model of Coronary Microvascular Disease

456
YAP-TEAD1-OSM Amplification Loop Plays a Critical Role in Mediating Cardiomyocyte De-differentiation
Wataru Mizushima, Shouhei Ikeda, Peiyong Zhai, Junichi Sadoshima, Rutgers New Jersey Medical Sch, Newark, NJ
W. Mizushima: None. S. Ikeda: None. P. Zhai: None. J. Sadoshima: None.

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457
Ca2+/calmodulin Dependent Kinase II Exacerbates Heart Failure Progression Through Activation of Class I Histone Deacetylases
Manling Zhang, Univ of Pittsburgh, Pittsburgh, PA; Elizabeth D Luczak, Johns Hopkins Sch of Med, Baltimore, MD; Jonathan Granger, Johns Hopkins Sch of Med, Baltimore, MD; Joan H Brown, Univ of California San Diego, La Jolla, CA; Mark E Anderson, Johns Hopkins Sch of Med, Baltimore, MD; Ning Feng, Univ of Pittsburgh Sch of Med, Pittsburgh, PA

458
Role of Heterochromatin Protein 1 Binding Partner 3, HP1BP3, in Cardiomyocyte Stress Response
Cheryl Xueli Chan, Wilson Tan, Roger Foo, Genome Inst of Singapore, Singapore, Singapore
C.X. Chan: None. W. Tan: None. R. Foo: None.

459
Diabetes Impairs Reparative Property of Bone Marrow-derived Endothelial Progenitor Cells: Role of Mir-499-mediated Hydrogen Sulfide Deficiency
Zhongjian Cheng, Venkata NS Garikipati, Suresh K Verma, May Trungcao, Chunlin Wang, Maria Cimini, David Goukassian, Raj Kishore, Temple University School of Medicine, Philadelphia, PA

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Prospective Isolation of Heart Field Specific Cardiomyocytes from Differentiating Human Embryonic Stem Cells

James L Engel, Arash Pezhouman, Ngoc B Nguyen, Peng Zhao, Suhaik Khoja, Univ of California, Los Angeles, Los Angeles, CA; Rhys JP Skelton, Murdoch Children’s Res Inst, The Royal Children’s Hosp, Parkville, Australia; Debasish Sahoo, Univ of California, San Diego, La Jolla, CA; David A Elliott, Murdoch Children’s Res Inst, The Royal Children’s Hosp, Parkville, Australia; Reza Ardehali, Univ of California, Los Angeles, Los Angeles, CA


Signature of Circular RNAs in Human Induced Pluripotent Stem Cells and Derived Cardiomyocytes

Wei Lei, Tingting Peng, Xing Fang, You Yu, Junjie Yang, Zhen-Ao Zhao, Soochow Univ, Suzhou, China; Junwei Liu, Huazhong Univ of Science and Technology, Wuhan, China; Zhenya Shen, Soochow Univ, Suzhou, China; Wenbo Deng, Cincinnati Children’s Hosp Medical Ctr, Cincinnati, OH; Shijun Hu, Soochow Univ, Suzhou, China


Evidence for Hormonal Drive of Cardiomyocyte polyplidy & Regenerative Potential Loss During the Acquisition of Endothymy

Guo N. Huang, UCSF, San Francisco, CA

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Short Term Hypoxia Can Induce Adult Feline Cardiomyocytes to Re-enter the Cell Cycle and Divide

Jaslyn Johnson, Polina Gross, Remus Berretta, Hajime Kubo, Sadia Mohsin, Steven R Houser, Lewis Katz Sch of Med, Philadelphia, PA


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p53 Stabilized iPS Derived Cardiomyocytes Promote Myocardial Repair

Ramaswamy Kannappan, James F Turner, Vasanthi Rajasekaran, Jianyi Zhang, Univ of Alabama at Birmingham, Birmingham, AL


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473
IL-7 Increases Fusion of Rat Bone Marrow Mesenchymal Stem Cells with Cardiomyocytes In Vivo and Improve Cardiac Function In Vivo
Asmat Salim, Kanwal Haneef, ICCBS, Karachi, Pakistan; Anwar Ali, Dept of Physiology, Univ of Karachi, Karachi, Pakistan; Irfan Khan, ICCBS, Karachi, Pakistan; Nadia Naeem, Dow Univ of Health Sciences, Karachi, Pakistan
A. Salim: None. K. Haneef: None. A. Ali: None. I. Khan: None. N. Naeem: None.

474
Human Induced Pluripotent Stem Cell-Derived Cardiomyocytes with Remodeled Mitochondrial Ca2+
Transients Develop Adult Cardiac Phenotype

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475
Human Cardiac Progenitor Cells Derived Exosomes Stimulate Cardiomyocytes Proliferation by MicroRNA-Hippo Pathway
Sudhish Sharma, Grace Bigham, Chetan Ambastha, Muthukumar Gunasekaran, Univ of Maryland, Baltimore, MD; Phillip Z Brohawn, Sotiros Karathanasis, MedImmune, Inc., Gaithersburg, MD; Sunjay Kaushal, Univ of Maryland, Baltimore, MD

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476
Mesenchymal Stromal Cells Regulate Extracellular Purinergic Danger-Associated Molecular Patterns by Secretion of Functionally Active CD73
Eric Y Shin, Lanfang Wang, Kai Xu, Juline Deppen, Emory Univ, Atlanta, GA; Andrés J García, Georgia Inst of Technology, Atlanta, GA; Frederick Strobøl, Rebecca D Levit, Emory Univ, Atlanta, GA

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477
Using Computational Models to Predict Stem Cell Function
Farnaz Shoja-Taheri, Emory Univ, Atlanta, GA; Alex George, NIH, Washington DC, DC; Manu O Platt, Michael E Davis, Emory Univ and Georgia Inst of Technology, Atlanta, GA
F. Shoja-Taheri: None. A. George: None. M.O. Platt: None. M.E. Davis: None.

478
Small Molecule ICG-001, Sodium Butyrate, and Retinoic Acid Enhanced Direct Cardiac Reprogramming of Induced Cardiomyocytes (iCMs)
Vivek P Singh, JayaPratap Pinnamaneni, Megumi Mathison, Deepthi Sanagasetti, Sonal Somvanshi, Aarthi Pugazenthi, Lina Yang, Davis So, Kai Wang, Jianchang Yang, Todd K Rosengart, Baylor Coll of Med, Houston, TX

479
The ER Unfolded Protein Response Effector, ATF6, Promotes Proliferation and Maintains Pluripotency in Cardiac Stem Cells
Winston T Stauffer, San Diego State Univ, San Diego, CA; Shirin Doroudgar, Heidelberg Univ Hosp, Heidelberg, Germany; Hailey N Stephens, Erik A Blackwood, Christopher C Glembotski, San Diego State Univ, San Diego, CA

485
Enhanced Chaperone Mediated Autophagy in Cardiomyocytes Ameliorates Pathology Induced by Hypoxic and Proteotoxic Stresses
Rajeshwary Ghosh, J Scott Pattison, Univ of South Dakota, Vermillion, SD
R. Ghosh: None. J.S. Pattison: None.

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486
Role of the Adenine Nucleotide Translocator Family in the Mitochondrial Permeability Transition Pore
Jason Karch, Michael J Broud, Cincinnati Children’s Hosp Medical Ctr, Cincinnati, OH; Randi J Parks, Systems Biology Ctr, Natl Heart Lung and Blood Inst, Bethesda, MD; Nachiro Terada, Univ of Florida, Gainesville, FL; Douglas C Wallace, Children’s Hosp of Philadelphia, Philadelphia, PA; Elizabeth Murphy, Systems Biology Ctr, Natl Heart, Lung and Blood Inst, Bethesda, MD; Jeffery D Molkentin, Cincinnati Children’s Hosp Medical Ctr, Cincinnati, OH

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Abstracts (continued)

487
Arginine Methylation Through PRMT5 Mediates Energy Stress-Induced Autophagy in the Heart
Risa Mukai, Toshirou Saito, Peyzong Zhai, Junichiro Sadoshima, Rutgers, New Jersey Medical Sch, Newark, NJ
N. Mukai: None. T. Saito: None. P. Zhai: None. J. Sadoshima: None.

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488
Clock Regulates Autophagy and Cell Survival of Cardiac Myocytes During Hypoxia Stress
Inna Rabinovich-Nikitin, Illana Minuk, Victoria Margulets, Floribeth Aguilar, St. Boniface Res Ctr, Winnipeg, MB, Canada; Tami A Martino, Univ of Guelph, Guelph, ON, Canada; Lorrie A Kirshenbaum, St. Boniface Res Ctr, Winnipeg, MB, Canada
I. Rabinovich-Nikitin: None. I. Minuk: None. V. Margulets: None. F. Aguilar: None. T.A. Martino: None. L.A. Kirshenbaum: None.

489
Ex vivo Porcine Coronary Artery Remodeling with Seeded Endothelial Cells Mehmet H Kural, Guangxin Li, Juan Wang, Yale Univ, New Haven, CT; Guochao Dai, Northeastern Univ, Boston, MA; Laura E Niklason, Liqiong Gui, Yale Univ, New Haven, CT
M.H. Kural: None. G. Li: None. J. Wang: None. G. Dai: None. L.E. Niklason: 7. Ownership Interest; Significant; L.E.N. is a founder and shareholder in Humacyte, Inc., which is a regenerative medicine company. Humacyte produces engineered blood vessels from allogeneic smooth muscle cells for vascular surgery. L. Gui: None.

490
Enhanced Therapeutic Effects of MSC-derived Exosomes with an Injectable Hydrogel for Hindlimb Ischemia Treatment Zongjin Li, Kaiyue Zhang, Xiangnan Zhao, Deling Kong, Qiang Zhao, Na Liu, Fengxia Ma, Nankai Univ, Tianjin, China
Z. Li: None. K. Zhang: None. X. Zhao: None. D. Kong: None. Q. Zhao: None. N. Liu: None. F. Ma: None.

491
Cardiomyocyte Brf Promotes Hypertrophy and is Required for Hypertrophic Adaptation to Hypertension in Mice In Vivo, but Raf Inhibitors Have Differential Effects Daniel N Mejiles, St George’s Univ of London, London, United Kingdom; Kerry A Rostron, Stephen J Fuller, Peter H Sugden, Angela Clerk, Univ of Reading, Reading, United Kingdom
D.N. Mejiles: None. K.A. Rostron: None. S.J. Fuller: None. P.H. Sugden: None. A. Clerk: None.

492
Intra Mural Aortic Hematoma: An Unusual Case Presenting with Acute Limb Ischemia
Nethuja Salagundla, Dylan Richard Murray, Islam Asm, George H Parker, Anu Salwan, TTUHSC, Amarillo, TX

493
Serum Leptin and TNFa Levels in Relation to Systolic and Diastolic Heart Function in Obese and Normal-overweight Pregnant. First Trimester Data
Katherine Shreyder, Maira Carrillo, James Maher, Natalia Schlabritz-Lutsevich, Texas Tech Univ HSC, Odessa, TX

494
Comparing Cardiac Dynamics Between Neonatal and Adult Rats
Luther M Swift, James Hiebert, Morgan Burke, Manelle Ramadan, Rafael Jaimes, Nikki Posnack, Childrens Nati Medical Ctr, Washington, DC

495
The Loss of Pka Activity and Activation In Cardiomyocytes Does Not Induce Cardiac Abnormalities
Xiaoqing Zhang, Ying Zhang, Ying Li, Xiaojie Ai, Xiaoxiao Zhang, Chen Zhang, Mingxin Tang, TEMPLE UNIVERSITY, Philadelphia, PA; Hua Xiang, TEMPLE UNIVERSITY Fox Chase Cancer Centr, Philadelphia, PA; Steven Houser, Xiongwen Chen, TEMPLE UNIVERSITY, Philadelphia, PA

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497
Rtf1 Regulates Cardiac Development and Function
Jaunian Chen, Adam D Langenbacher, Fei Lu, Vincent Ren, Yibin Wang, Chen Gao, UCLA, Los Angeles, CA
J. Chen: None. A.D. Langenbacher: None. F. Lu: None. V. Ren: None. Y. Wang: None. C. Gao: None.

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498
Functional Annotation of TNNT2 Variants of Uncertain Significance with Induced Pluripotent Stem Cell-derived Cardiomyocytes
Wenjian Lv, Univ of Pennsylvania, Philadelphia, PA; Lyon Qiao, Harvard Univ, Cambridge, MA; Nataliya Petrenko, Wenjun Li, Anjali T Owens, Chris McDermott-Roe, Kiran Musunuru, Univ of Pennsylvania, Philadelphia, PA
Identification and Characterization of Lamin-Associated Domains in Cardiac Myocytes Isolated from Human Patients with Dilated Cardiomyopathy Caused by LMNA Pathogenic Variant and Their Effects on Gene Expression and DNA Methylation

Sirisha Cheedipudi Marreddy, Priyatansh Gurha, Univ of Texas Health Science, Houston, TX; Hin Hu, MD Anderson Cancer Ctr, Houston, TX; Mary Sweet, Matthew Taylor, Luisa Mestroni, Univ of Colorado, Denver, CO; Cristian Coarfa, Baylor Coll of Med, Houston, TX; Ali J Marian, Univ of Texas Health Science, Houston, TX


Low Aldehyde Dehydrogenase 2 (ALDH2) Potentiates Obesity in Leptin Receptor Mutant Mice

Guodong Pan, Henry Ford Health System, Detroit, MI

G. Pan: None.

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Anemia of Inflammation in an Exonuclease Deficient Lupus Mouse

Stephen Lee Rego, Scott Harvey, Sean R. Simpson, Wayne O. Hemphill, Jason M. Grayson, Fred W. Perrino, Wake Forest Sch of Med, Winston Salem, NC


Identifying Tetraspanins and Integrins Relevant to Cardiovascular Conditions Using Bioinformatics

Ge Sun, OUHSC, Oklahoma City, OK

G. Sun: None.

Modulation of ZIC3 Expression in Pluripotent Stem Cells Using CRISPR-interference to Model Heterotaxy

Bohao Liu, Roberta Lock, Gordana Vunjak-Novakovic, Barry Fine, Columbia Univ, New York, NY


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Modeling Premature Cardiac Aging by Induced Pluripotent Stem Cell from a Patient with Hutchinson-Gilford Progeria Syndrome


LAMP-2B Regulates Human Cardiomyocyte Function by Mediating Autophagosome-lysosome Fusion

Congwu Chi, Univ of Colorado Anschutz, Aurora, CO

C. Chi: None.

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Modulation of ZIC3 Expression in Pluripotent Stem Cells Using CRISPR-interference to Model Heterotaxy

Bohao Liu, Roberta Lock, Gordana Vunjak-Novakovic, Barry Fine, Columbia Univ, New York, NY


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Lower Nadir Cd4 T-cell Count is a Strong Predictor of Endothelial Dysfunction in HIV Infected Patients

Emad Mogadam, Huntington Hosp, Pasadena, CA; Kevin King, Huntington Medical Res Insts, Pasadena, CA; Kimberly Shriner, Huntington Hosp, Pasadena, CA; Karen Chu, Huntington Medical Res Insts, Pasadena, CA; Anders Sondergaard, Huntington Hosp, Pasadena, CA; Darlene Royal, Huntington Medical Res Insts, Pasadena, CA; Kristal Young, Huntington Hosp, Pasadena, CA; Robert Kloner, Keck Sch of Med of Univ of Southern California, Los Angeles, CA


Focal Adhesion Kinase Inhibition Prevents Prolonged Nuclear Factor-κB Activation and Reduces Atherosclerosis in ApoE-/- Mice

James M Murphy, Steve Lim, Univ of South Alabama, Mobile, AL

J.M. Murphy: None. S. Lim: None.

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515
Bariatric Surgery Reverses Vascular Pathology in Mice with Morbid Obesity and Type 2 Diabetes
Lufang Zhou, Univ of Houston, Houston, TX; Yong Wang, Univ of Missouri, Columbia, MO; Hanruiz Zhang, Columbia Univ Medical Ctr, New York, NY; Kevin D Dellsperger, Univ of Missouri, Columbia, MO; Barry J Potter, Louisiana State Univ Health Sciences Ctr, New Orleans, LA; Ji-min Cao, Cuihua Zhang, Univ of Missouri, Columbia, MO
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516
Pharmacological Inhibition of Phosphatase and Tensin Homolog Ameliorates Adipose Tissue Inflammation and Increases Splenic Regulatory B and T Cells in Rats with Metabolic Syndrome
Ayako Uchinaka, Yumeno Kawai, Kanako Komuro, Aoi Fujieda, Minami Wataya, Mamoru Yoneda, Yuki Komatsu, Kiyoshi Aoyama, Toyoaki Murohara, Kohzo Nagata, Nagoya Univ, Nagoya, Japan
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517
Pathogenic Mechanism of a Catecholaminergic Polymorphic Ventricular Tachycardia Causing-Mutation in Cardiac Calcium Release Channel RyR2
Zheng Liu, Tongji Univ Sch of Med, Shanghai, China
Z. Liu: None.
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518
Hemodynamic Instability in Atrial Flutter with Slow Ventricular Response
Nnamdi Arinze Nwafo, Rapid City Regional Hosp, Rapid City, SD
N.A. Nwafo: None.

519
Mitochondrial-mediated Oxidative CaMKII Activation Induces Early Afterdepolarizations in Guinea Pig Cardiomyocytes: An in Silico Study
Ruilin Yang, Tianjin Univ, Tianjin, China; Patrick Ernst, Jiajia Song, Xiaoguang M Liu, Jianyi Zhang, Lufang Zhou, Univ of Alabama Birmingham, Birmingham, AL

520
Overexpression of a Non-muscle RBFOX2 Splice Isoform Induces Cardiac Arrhythmias in Myotonic Dystrophy
CHAITALI MISRA, SUSHANT BANGRU, DARREN J PARKER, Univ Of Illinois, Urbana, IL; SARA KOENIG, ELLEN LUBBERS, Ohio State Univ, Columbus, OH; JAMILA HEDHLI, Univ Of Illinois, Urbana, IL; THOMAS A COOPER, Baylor Coll of Med, Houston, TX; WAWRZYNIEC L. DOBRUCKI, Univ Of Illinois, Urbana, IL; PETER MOHLER, Ohio State Univ, Columbus, OH; AUINASH KALSOTRA, Univ Of Illinois, Urbana, IL
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521
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522
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Zheng Liu, Tongji Univ Sch of Med, Shanghai, China
Z. Liu: None.
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523
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Ayako Uchinaka, Yumeno Kawai, Kanako Komuro, Aoi Fujieda, Minami Wataya, Mamoru Yoneda, Yuki Komatsu, Kiyoshi Aoyama, Toyoaki Murohara, Kohzo Nagata, Nagoya Univ, Nagoya, Japan
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524
Pharmacological Inhibition of Phosphatase and Tensin Homolog Ameliorates Adipose Tissue Inflammation and Increases Splenic Regulatory B and T Cells in Rats with Metabolic Syndrome
Ayako Uchinaka, Yumeno Kawai, Kanako Komuro, Aoi Fujieda, Minami Wataya, Mamoru Yoneda, Yuki Komatsu, Kiyoshi Aoyama, Toyoaki Murohara, Kohzo Nagata, Nagoya Univ, Nagoya, Japan
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525
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Zheng Liu, Tongji Univ Sch of Med, Shanghai, China
Z. Liu: None.
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526
Pharmacological Inhibition of Phosphatase and Tensin Homolog Ameliorates Adipose Tissue Inflammation and Increases Splenic Regulatory B and T Cells in Rats with Metabolic Syndrome
Ayako Uchinaka, Yumeno Kawai, Kanako Komuro, Aoi Fujieda, Minami Wataya, Mamoru Yoneda, Yuki Komatsu, Kiyoshi Aoyama, Toyoaki Murohara, Kohzo Nagata, Nagoya Univ, Nagoya, Japan
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527
Pathogenic Mechanism of a Catecholaminergic Polymorphic Ventricular Tachycardia Causing-Mutation in Cardiac Calcium Release Channel RyR2
Zheng Liu, Tongji Univ Sch of Med, Shanghai, China
Z. Liu: None.
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528
Pathogenic Mechanism of a Catecholaminergic Polymorphic Ventricular Tachycardia Causing-Mutation in Cardiac Calcium Release Channel RyR2
Zheng Liu, Tongji Univ Sch of Med, Shanghai, China
Z. Liu: None.
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529
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Z. Liu: None.
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530
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Zheng Liu, Tongji Univ Sch of Med, Shanghai, China
Z. Liu: None.
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529
Asporin - Extracellular Matrix Protein Mitigates Pathological Remodeling
Ho nit PIplani, Smidt Heart Inst, Cedars-Sinai Medical Ctr, Los Angeles, CA; Ankush Sharma, Dept of Molecular Genetics, Erasmus Univ Medical Ctr, Rotterdam, Netherlands; Chengquin Huang, Jon Sin, Juliana de Freitas Germain, Robert M Mentzer Jr, Allen M Andres, Roberta A Gottlieb, Smidt Heart Inst, Cedars-Sinai Medical Ctr, Los Angeles, CA

530
The Ufm1 Specific Ligase 1 Regulates Endoplasmic Reticulum Homeostasis and Protects Against Heart Failure
Jie Li, Guihua Yue, Wenxia Ma, Aizhen Zhang, Jianqiu Zou, Augusta Univ, Augusta, GA; Jun Wang, Texas Heart Inst, Houston, TX; Honglin Li, Huabo Su, Augusta Univ, Augusta, GA
J. Li: None. G. Yue: None. W. Ma: None. A. Zhang: None. J. Zou: None. J. Wang: None. H. Li: None. H. Su: None.
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531
A Lack in Endogenous Proteasome Regulation Provokes Exacerbated Cardiac Remodeling and Premature Heart Failure Following Catecholamine Challenge
Felix A Trogisch, Franziska Koser, Dept of Cardiovascular Physiology, Heidelberg Univ, Heidelberg, Germany; Andreas Jungmann, Dept of Internal Med III, Univ Medical Ctr Heidelberg, Heidelberg, Germany; Oliver J Muller, Dept of Internal Med III, Univ Medical Ctr Kiel, Kiel, Germany; Markus Hecker, Dept of Cardiovascular Physiology, Heidelberg Univ, Heidelberg, Germany; Oliver Drews, DZHK (German Ctr for Cardiovascular Res), partner site Heidelberg/Mannheim, Germany

532
Titin's N2B Element is Critical to Cardiac Mechanotransduction during Volume Overload, but not Pressure Overload
Joshua Strom, Mathew Bull, Chandra Saripalli, Jochen Gohlke, Univ of Arizona, Tucson, AZ; Michael Gotthardt, Max Delbrück Ctr for Molecular Med, Berlin, Germany; Henk Granzier, Univ of Arizona, Tucson, AZ
533
Modulatory Effect of Nkx2.5+ Cardiomyoblast Secreted Exosomes in Cardiometabolism
Wen-Pin Chen, Wei-Ping Lian, Min-Yi You, You-Yi Li, Natl Taiwan Univ, Taipei, Taiwan
W. Chen: None. W. Lian: None. M. You: None. Y. Li: None. 535
Differences in Energetic Remodeling Between Right and Left Atria in Patients with Atrial Fibrillation
Larisa Emelyanova, Ctr for Integrative Res on Cardiovascular Aging (CIRCA), Milwaukee, WI; Steve Komas, Medical Coll of Wisconsin, Milwaukee, WI; Susan Olet, Aurora Res Inst, Aurora Health Care, Milwaukee, WI; Sean Ryan, Catherine Warner, Farhan Rizvi, Gracious R. Ross, Ctr for Integrative Res on Cardiovascular Aging (CIRCA), Milwaukee, WI; David C. Kress, Daniel P. O’Hair, Francis Downey, Aurora Cardiovascular Services, Aurora Sinai/Aurora St. Luke’s Medical Ctr, Milwaukee, WI; Arshad Jahangir, Ctr for Integrative Res on Cardiovascular Aging (CIRCA), Milwaukee, WI

534
Increased O-linked Glycosylation in Diabetic Myocardium of Mice and Human
Vahid Agbortoko, Yuhong Liu, Guangbin Shi, Anny Usheva, Arun K Singh, Frank W Sellke, Jun Feng, Rhode Island Hosp, Providence, RI
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535
Identifying Novel Regulators of Mitochondrial Complex I Biogenesis
Christian J Garcia, Columbia Univ Medical Ctr, New York, NY
C. J. Garcia: None.

536
Reduced Protein and mRNA Levels of Velosin Containing Protein in Left Ventricular Myocardium of Dogs with Advanced Heart Failure Are Restored Following Chronic Therapy With Elamipretide
Ramesh C Gupta, Henry Ford Hosp, Detroit, MI; Vinita S Gupta, Henry Ford Hosp, Shelby Township, MI; Hani Sabbah, Henry Ford Hosp, Detroit, MI
R. C. Gupta: None. V. S. Gupta: None. H. Sabbah: 9. Other; Modest; Stealth BioTherapeutics, Inc.
MCUB Regulates the Macromolecular Composition of the Mitochondrial Calcium Unipporter Channel to Limit Mitochondrial Calcium Overload During Ischemic Cardiac Injury


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Magnesium Improves Cardiac Diastolic Function by Modulating Mitochondria

Man Liu, Univ of Minnesota, Minneapolis, MN; Euy-Myoung Jeong, Brown Univ and Lifespan Rhode Island Hosp, Providence, RI; An Xie, Univ of Minnesota, Minneapolis, MN; Eui Yong So, Brown Univ and Lifespan Rhode Island Hosp, Providence, RI; Guangbin Shi, Lifespan Rhode Island Hosp, Providence, RI; Go Eun Jeong, Brown Univ, Providence, RI; Anyu Zhou, Brown Univ and Lifespan Rhode Island Hosp, Providence, RI; Samuel C. Dudley Jr., Univ of Minnesota, Minneapolis, MN


LPP3 Deficiency Impairs Mitochondrial Function and Enhances Myocardial LPA Mediated Signaling

Sumitra Miriyala, Susmita Bhattachari, Sudha Sharma, Timothy Michael LaBrie, Hailey D Tupper, Diana Escalante-Alcalde, Md. Shenuarin Bhuiyan, Mini Chandra, Manikandan Panchatcharam, LSUHSC-Shreveport, Shreveport, LA


Manipulation of Beta Adrenergic Receptor in Pressure-Overloaded Murine Hearts Mimics Adverse Cardiac Remodeling and Reverse Remodeling

Koichi Nishimura, Masanori Asakura, Yoshitaka Okuhara, Yoshito Naito, Hyogo Coll of Med, Nishinomiya, Japan; Shinachi Hirotani, Kawachi General Hosp, Osaka, Japan; Masaharu Ishihara, Tohru Masuyama, Hyogo Coll of Med, Nishinomiya, Japan


Uncovering the Mechanisms by Which Fatty Acid Oxidation Suppresses Cardiomyocyte Hypertrophy

Julia Ritterhoff, Dan Shao, Stephen C Kolwicz Jr, Zhenglong Liu, Rong Tian, Univ of Washington, Seattle, WA


Gja1-20k Uses the Actin Cytoskeleton to Promote Both Mitochondrial Fission and Fusion

Daisuke Shimura, Rachel Baum, Shaohua Xiao, TingTing Hong, Robin M Shaw, Smidt Heart Inst, Cedars-Sinai Medical Ctr, Los Angeles, CA

D. Shimura: None. R. Baum: None. S. Xiao: None. T. Hong: None. R.M. Shaw: None.

Adropin Mediated Regulation of Lipid and Glucose Metabolism in Diet Induced Obesity

Dharendra Thapa, Janet R Manning, Manling Zhang, Danielle A Guimaraes, Michael W Stoner, Michael Jurczak, Sruli Shiva, Iain Scott, UNIVERSITY OF PITTSBURGH, Pittsburgh, PA


Adropin Mediated Regulation of Lipid and Glucose Metabolism in Diet Induced Obesity

R. Tian: None. Z. Liu: None. R. Tian: None.

Mitochondrial Fission and Fusion

Zhenglong Liu, Rong Tian, Univ of Washington, Seattle, WA


GJA1-20k Protects the Heart from Ischemic Injury by Inducing Mitochondrial Biogenesis and Metabolic Quiescence

Wassim A Basheer, Ying Fu, Shaohua Xiao, TingTing Hong, Robin M Shaw, Cedars-Sinai Medical Ctr, Los Angeles, CA

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R. Tian: None. Z. Liu: None. R. Tian: None.

Uncovering the Mechanisms by Which Fatty Acid Oxidation Suppresses Cardiomyocyte Hypertrophy

Julia Ritterhoff, Dan Shao, Stephen C Kolwicz Jr, Zhenglong Liu, Rong Tian, Univ of Washington, Seattle, WA


Gja1-20k Uses the Actin Cytoskeleton to Promote Both Mitochondrial Fission and Fusion

Daisuke Shimura, Rachel Baum, Shaohua Xiao, TingTing Hong, Robin M Shaw, Smidt Heart Inst, Cedars-Sinai Medical Ctr, Los Angeles, CA

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Mitochondrial Fission and Fusion

Zhenglong Liu, Rong Tian, Univ of Washington, Seattle, WA

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548 Evolutionarily Conserved Functions for Valosin Containing Protein (VCP) in Cardiac and Skeletal Muscle Reveal Mechanistic Insights into Multisystem Proteinopathy

Matthew J Brody, Davy Vanhouthe, Cincinnati Childrens Hosp, Cincinnati, OH; Meera C Viswanathan, Tran Nguyen, Johns Hopkins Univ, Baltimore, MD; Marjorie Maillet, Cincinnati Childrens Hosp, Cincinnati, OH; Allen J York, Michelle A Sargent, Cincinnati Childrens Hosp, Howard Hughes Medical Inst, Cincinnati, OH; Anthony Cammarato, Johns Hopkins Univ, Baltimore, MD; Jeffery D Molkentin, Cincinnati Childrens Hosp, Howard Hughes Medical Inst, Cincinnati, OH


549 Interleukin-6 Trans-Signaling in Acute Myocardial Infarction in Male BALB/c Mice

Nathan A Holland, Robert M Lust, East Carolina Univ - BSOM, Greenville, NC; Christopher J Wingard, Bellarmine Univ, Louisville, KY; David A Tulis, East Carolina Univ - BSOM, Greenville, NC


550 Exosomes Released by Human Induced Pluripotent Stem Cell-Cardiomyocytes Induce In-Vitro Angiogenesis: A New Strategy for Cell-Free Therapeutics

Julie A Dougherty, Naresh Kumar, Mohammad Noor, Mark G Angelos, Chun-An Chen, Mahmood Khan, Ohio State Univ, Columbus, OH


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551 p22phox Protects the Heart Against Pressure Overload

Wataru Mizushima, Rutgers New Jersey Medical Sch, Newark, NJ; Yanfei Yang, BWH-Harvard Medical Sch, Boston, MA; Peiyong Zhai, Chun-An Chen, Mahmood Khan, Ohio State Univ, Columbus, OH

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552 Harnessing the Versatility of PLGA Nanoparticles for Targeted Cre-Mediated Recombination

Ngoc Nguyen, Cheng-Han Chen, Yulong Zhang, Peng Zhao, Benjamin Wu, Reza Ardehali, Univ of California, Los Angeles, Los Angeles, CA

N. Nguyen: None. C. Chen: None. Y. Zhang: None. P. Zhao: None. B. Wu: None. R. Ardehali: None.

553 Inhibition of Microrna-21 Prevents Myocardial Remodelling and Dysfunction in a Pig Model of Ischemia/reperfusion Injury

Deepak Prabhu Ramanujam, Inst für Pharmakologie und Toxikologie, Technische Univ München (TUM), Munich, Germany; Rabea Hinkel, Veronika Kaczmarek, Andrea Howe, Katharina Klett, 1. Medische Klinik und Poliklinik, Klinikum Rechts der Isar, TU München, Munich, Germany; Anne Dueck, Inst für Pharmakologie und Toxikologie, Technische Univ München (TUM), Munich, Germany; Thomas Thum, Inst of Molecular and Translational Therapeutic Strategies (IMTTS), Hannover Medical Sch, Hannover, Germany; Karl-Ludwig Laugwitz, Christian Kupatt, 1. Medische Klinik und Poliklinik, Klinikum Rechts der Isar, TU München, Munich, Germany; Stefan Engelhardt, Inst für Pharmakologie und Toxikologie, Technische Univ München (TUM), Munich, Germany


554 Mechanism of Action for the Beneficial Effects of Cortical Bone Stem Cells on the Heart After Myocardial Infarction

Giana J. Schena, Hajime Kubo, Eric Feldsott, Remus Berretta, Sadia Mohsin, Steven R. Houser, Temple Univ, Philadelphia, PA


555 Exosomal MicroRNAs Contribute to Chronic Heart Failure Through Dysregulating Nuclear Factor Erythroid 2-Related Factor 2/Antioxidant Response Element Signaling

Changhai Tian, Lie Gao, Irving H Zucker, Univ of Nebraska Medical Cent, Omaha, NE

C. Tian: None. L. Gao: None. I.H. Zucker: None.

556 Intramyocardial EphrinA1-Fc Preserves Mitochondrial Structure and Bioenergetics Post-Myocardial Infarction

Julie Horton, Maria Torres, Kelsey McLaughlin, Randall Renegar, Uma Sharma, Smriti Valsaraj, Omar Sharaf, K’Slyah Whitehurst, Brinda Sarathy, Darrell Neuffer, Jitka A Virag, ECU, Greenville, NC


557 Exosome Biogenesis/Uptake Mediates Cardioprotection by Globular Adiponectin but Not High Molecular Weight Adiponectin

Yajing Wang, Lu Gan, Dina Xie, Dajun Zhao, Thomas Jeffersosn Univ, Philadelphia, PA; Erhe Gao, Temple Univ, Philadelphia, PA; Walter J. Koch, Xinliang Ma, Thomas Jeffersosn Univ, Philadelphia, PA

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Abstracts (continued)

558 Melatonin Exerts Cardioprotective Effects Under Chronic Neuropathic Pain Through Rip1-rip3-mikl and Rip3-camkii Pathway Mediating Myocardial Necroptosis in Ischemia Reperfusion Injury
Zheng Yang, Dept of Pathophysiology, Fourth Military Medical Univ, Xi’an, China; Chen Li, Dept of Physiology, Fourth Military Medical Univ, Xi’an, China; Han Xue, Fourth Military Medical Univ, Xi’an, China; Yishi Wang, Dept of Physiology, Fourth Military Medical Univ, Xi’an, China; Heng Ma, Dept of Pathophysiology, Fourth Military Medical Univ, Xi’an, China
Z. Yang: None. C. Li: None. H. Xue: None. Y. Wang: None. H. Ma: None.

559 AMP-Activated Protein Kinase and Estrogen-Dependent Mechanisms Underlying Increased Susceptibility To Cardiovascular Disease During Menopause
Marissa Anne Pier, John Konhilas, Univ of Arizona, Tucson, AZ
M.A. Pier: None. J. Konhilas: None.

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560 Coxsackievirus Infection During the First Trimester of Pregnancy Suppresses Cardiomyocyte Proliferation Leading to Congenital Heart Defects
Vipul Sharma, Washington Univ Sch of Med, Saint Louis, MO; Lisa Goessling, Washington Univ Sch of Med, St.Louis, MO; Sara Rohrbaugh, Anoop Brar, Washington Univ Sch of Med, Saint Louis, MO; Pirooz Eghtesady, Washington Univ Sch of Med, St.Louis, MO
V. Sharma: None. L. Goessling: None. S. Rohrbaugh: None. A. Brar: None. P. Eghtesady: None.

565 Activin A Regulates SERCA2a Expression in Cardiomyocytes Through Ubiquitin-proteasome Mediated Degradation
Ryan Hobson, Vinita Chaudhari, Anthony Rosenzweig, Jason D Roh, Massachusetts General Hosp, Boston, MA
R. Hobson: None. V. Chaudhari: None. A. Rosenzweig: None. J.D. Roh: None.

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570 MYBPC3 Mutations Cause Hypertrophic Cardiomyopathy by Dysregulating Myosin: Implications for Therapy
Christopher N Toepfer, Hiroko Wakimoto, Amanda C Garfinkel, Barbara McDonough, Harvard Medical Sch, Boston, MA; Dan Liao, NUS, Singapore, Singapore; Jianming Jiang, NUS, Singapore, Singapore; Angela Tai, Josh Gorham, Harvard Medical Sch, Boston, MA; Ida G Lund, Ida G Lund, University of Oslo, Oslo, Norway; Mingyue Lun, Brigham and Womens Hosp, Boston, MA; Thomas L Lynch, Loyola University of Chicago, Chicago, IL; Sakthivel Sadayappan, University of Cincinnati, Cincinnati, OH; Charles S Redwood, Hugh Watkins, Univ of Oxford, Oxford, United Kingdom; Jonathan Seidman, Christine Seidman, Harvard Medical Sch, Boston, MA

572 Role of Human Cardiac RLC In Modulating The Super-relaxed State Of Myosin: A Cardiomyopathy Perspective
Na Sa, Ivan Tomasic, Sampath Gollapudi, Ferdinand Evangelista, Kristina Green, Suman Nag, Myokardia, South San Francisco, CA
N. Sa: None. I. Tomasic: None. S. Gollapudi: None. F. Evangelista: None. K. Green: None. S. Nag: None.

573 Mechanical Stress Alters Cell Signaling and Extracellular Matrix Genes in Fetal Cardiac Valves
Rebekah Macfie, Alex Bridges, Herbert M Espinoza, Isa Lindgren, Samantha Louey, George Giraud, Kent Thornburg, Frederick Tibayan, OHSU, Portland, OR

574 An Amino-Terminal Peptide of GRK5 Prevents Pathological Cardiac Hypertrophy in Response to Pharmacological and Surgical Stress
Ryan Coleman, Lewis Katz Sch of Med, Philadelphia, PA
R. Coleman: None.

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575 Primary Cilia of Cardiac Neural Crest Cells Orchestrate Multiple Aspects of Cardiovascular Development

576 Nrf2 is a Key Regulator on Puerarin Preventing Cardiac Hypertrophy and Upregulating Metabolic Enzymes Ugt1a1 and Ugt1a9 in Rats
Ning Hou, Ganjian Zhao, Shaoai Cai, Xiwen Liu, Aiqun Li, Yin Huang, Lirong Li, Chengfeng Luo, Guangzhou Medical Univ, Guangzhou, China
N. Hou: None. G. Zhao: None. S. Cai: None. X. Liu: None. A. Li: None. Y. Huang: None. L. Li: None. C. Luo: None.
577

Beclin1 Regulates UVRAG and Rab5-Mediated Endosomal Degradation Pathway

Mark Lampert, Rita Najor, Leonardo Leon, Asa Gustafsson, UCSD, La Jolla, CA

M. Lampert: None. R. Najor: None. L. Leon: None. A. Gustafsson: None.

578

β-arrestin-Biased β2-Adrenergic Receptor Signaling Enhances Cardiomyocyte Contractility via ROCK-Dependent Signaling


579

Beta-blockers Regulate Hypoxia Sensing of Beta Adrenergic Receptors

Yu Sun, Manveen K. Gupta, Sathyamangla V. Naga Prasad, Cleveland Clinic Fndn, Cleveland, OH

Y. Sun: None. M.K. Gupta: None. S.V. Prasad: None.

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A β-arrestin-Biased β2-Adrenergic Receptor-Specific Pepducin Confers Cardioprotection


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581

Determining the Nuclear Transcription Factor Network Controlling Expression of the Cardiac Inotropic Factor S100A1

Martin Busch, Lukas Adrian, Fabian Guenther, Christoph Dieterich, Hugo A Katus, Heidelberg Univ Hosp, Heidelberg, Germany; Melanie Boerries, Univ of Freiburg, Freiburg, Germany; Patrick Most, Heidelberg Univ Hosp, Heidelberg, Germany


582

Determining and Modeling of the Cardiac Protein-Protein Interaction Network of the Inotropic Factor S100A1 by AP-MS/MS

Michael Egger, Zegeye Jebessa, Div of Molecular and Translational Cardiology, Dept of Med III, Heidelberg Univ Hosp, Heidelberg, Germany; Rebecca Wade, Heidelberg Inst for Theoretical Studies (HITS), Heidelberg, Germany; Hugo A. Katus, Martin Busch, Patrick Most, Div of Molecular and Translational Cardiology, Dept of Med III, Heidelberg Univ Hosp, Heidelberg, Germany

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583

Cardiac Compensation in ErbB2-deficient Zebrafish Embryos

Nicole D Fleming, Leigh Ann Samsa, Univ of North Carolina at Chapel Hill, Chapel Hill, NC; David Hassel, Univ of Heidelberg, Heidelberg, Germany; Li Qian, Jiandong Liu, Univ of North Carolina at Chapel Hill, Chapel Hill, NC


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584

FTO-Dependent m6A Regulates Cardiomyocyte and Cardiac Function During Remodeling and Repair

Prabhu Mathiyalagan, Marta Adamiak, Joshua Mayourian, Yaxuan Liang, Yassine Sassi, Neha Agarwal, Divya Jha, Kiyotake Ishikawa, Shihong Zhang, Erik Kohlbrenner, Ichan Sch of Med Mount S, New York, NY; Xiaoke Yin, King’s British Heart Fndn Ctr, King’s Coll London, London, United Kingdom; Elena Chepurko, Jiqiu Chen, Maria G Trivieri, Rajvir Singh, Ichan Sch of Med Mount S, New York, NY; Manuel Mayr, King’s British Heart Fndn Ctr, King’s Coll London, London, United Kingdom; Kenneth Fish, Djamel Lebeche, Roger J Hajjar, Susmita Sahoo, Ichan Sch of Med Mount S, New York, NY


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585

CDK8 Activity-dependent Regulation of Heart Disease

Rachel Minerath, Allison Vaske, Duane Hall, Chad Grueter, Univ of Iowa, Iowa City, IA

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586

Early Characterization of the Mechanisms of ATRA-mediated Suppression of Cardiac Hypertrophy

Lauren Parker, Brian O’Rourke, D. Brian Foster, Johns Hopkins Univ, Baltimore, MD

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