



Cardiovascular Research Institute

Research Day - June 17, 2022

Katz Atrium & Lecture Theater

University of Alberta

Welcome

Director's Message

Welcome to the first Research Day being hosted by the new Cardiovascular Research Institute (CVRI). The CVRI is excited to pick up the torch to continue the long-standing tradition of celebrating cardiac research at the University of Alberta and across cardiac sciences in Alberta. This is the 24th annual event devoted to sharing our collective research progress and celebrating the accomplishments of our trainees and scientific teams. We are very pleased to gather everyone together in-person to share ideas, support one another and build collaborations – a key opportunity that has been missing for the last few years.

Science is a team sport and requires hard work, dedication and support. Today, we are focused on our trainees and work undertaken by their teams over the past year. We have selected several abstracts for oral presentations to highlight different approaches and themes of cardiovascular research, and in addition, over 75 abstracts have been selected to present during the day.

We are happy to welcome our visiting speakers; Drs. Sonia Anand from McMaster University and Slava Epelman from the University of Toronto. Both are skilled researchers, formidable in their respective fields of study, and sure to be both engaging and inspiring.

I want to thank both the Royal Alexandra and University Hospital Foundations and all our industry sponsors for their support. I also want to thank Dr. Christi Andrin and Ms. Lisa Soulard, as well as our Organizing Committee, Drs. Debraj Das, Jason Dyck, Michelle Graham, Zamaneh Kassiri, Roderick MacArthur, Sean McMurtry, for the creative thinking and time invested to make this event happen.

Enjoy the day!

Justin A. Ezekowitz, MBBCh, MSc
Professor of Medicine
Director, Cardiovascular Research, University of Alberta
Co-Director, CVC
Cardiologist, Mazankowski Alberta Heart Institute
AHS Chair in Cardiac Sciences



Acknowledgements:

This event is sponsored and supported by:

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Foundations

Royal Alexandra Hospital Foundation

University Hospital Foundation

Awards:

The trainee awards presented today are generously supported through the following:

Adarsh Gopal Education and Research Fund and University Hospital Foundation

Dr. Francis Witkowski Publication Award

Henry Anton Deutsch Medical PGME Research Award

Jose Galante Chicurel Award

Royal Alexandra Hospital Foundation



Visiting Speaker 1



Dr. Sonia Anand, MD, PhD, FRCPC
Professor of Medicine & Epidemiology
Director of Population Genomics Program
Canada Research Chair in Ethnic Diversity and Cardiovascular Disease
Heart & Stroke Foundation of Ontario/Michael G. DeGroote Chair in Population Health Research
McMaster University

Medical Grand Rounds & Dr. Joseph Dvorkin Memorial Lecture Presenter

Title: Neglected Patients and Populations: Future considerations to advance cardiovascular care in the Canadian context

Dr. Sonia Anand is a Professor of Medicine and Epidemiology at McMaster University, is the Director of the Chanchlani Research Centre focused on Health Equity Research, and is a Senior Scientist at the Population Health Research Institute. Dr. Anand received a Doctor of Medicine from McMaster in 1992, Internal Medicine Training at McMaster and a Fellowship of the Royal College of Physicians and Surgeons of Canada in 1996. After additional clinical training in thrombosis and in vascular medicine at Harvard's Brigham and Women's Hospital, Dr. Anand works as a vascular medicine specialist at Hamilton Health Sciences and McMaster University. Dr. Anand further received her Master's in Clinical Epidemiology at McMaster in 1996 and Ph.D. in Health Research Methodology at McMaster in 2002. She holds the Canada Research Chair in Ethnic Diversity and Cardiovascular Disease and the Heart and Stroke Foundation of Ontario/Michael G. DeGroote Chair in Population Health Research. Her present research focuses upon the environmental and genetic determinants of vascular disease in populations of varying ancestral origin, women and cardiovascular disease. Dr. Anand has been awarded more than 46 million dollars in research funding in the last 10 years including two recent COVID-19 observational studies. Dr. Anand's work is widely published amongst academic journals with over 415 scientific publications, and in 2019 she was inducted as a Fellow to the Canadian Academy of Health Sciences.



Visiting Speaker 2



Dr. Slava Epelman MD, PhD,
FRCPC
Cardiovascular Research Group
Lead
Toronto General Hospital
Research Institute
Loretta Rogers Chair in
Immunobioengineering
Ted Rogers Centre for Heart
Research
Division of Cardiology,
University Health Network
Peter Munk Cardiac Centre
Assistant Professor of Medicine
Department of Immunology
University of Toronto
Heart & Stroke/Richard Lewar
Centre of Excellence

Title: **Cardio-immunology for Basic Scientists and Clinicians**

Dr. Slava Epelman MD, PhD is a Clinician-Scientist in the Department of Medicine, Division of Cardiology at the University Toronto, Peter Munk Cardiac Centre, a Senior Scientist and the Cardiovascular Research Group lead at the Toronto General Research Institute, University Health Network, and the Loretta Rogers Chair in Immunobioengineering for the Ted Rogers Centre for Heart Research, University of Toronto. Dr. Epelman obtained his MD / PhD (in Immunology) from the University of Calgary and then did his medical residency / clinical fellowships at the Cleveland Clinic, Baylor College of Medicine and Washington University. He is a staff cardiologist in the Peter Munk Cardiac Centre at the Toronto General Hospital. His scientific interests focus on the role of macrophages in cardiac tissue injury and regeneration.

This visit has been funded, in part, by the Walter Mackenzie Visiting Speaker Fund



Event Schedule

06:45 - 07:45 Registration & Poster Set-Up

07:45 - 08:00 Welcome & Introductions

08:00 - 09:00 *Medical Grand Rounds & Dr. Joseph Dvorkin Memorial Lecture Presenter*
Dr. Sonia Anand, McMaster University
“Neglected Patients and Populations: Future Considerations to Advance Cardiovascular Care in the Canadian Context”.

09:00 - 09:20 Coffee break

09:20 – 10:15

Podium Abstract Session #1: Acute Care **Co-Chaired by Slava Epelman and Spencer Proctor**

Presenter 1: Fulin Wang

F. Wang, P-H. Lou, E. Lucchinetti, D. H. Freed, M. Zaugg

“Optimizing resuscitation of the donation after circulatory death (DCD) heart by pharmacological postconditioning in ex vivo perfused porcine hearts”

Presenter 2: Chelsea Morin

Chelsea MD Morin MD, Po-Yin Cheung MBBS, PhD, Tze-Fun Lee PhD, Megan O'Reilly PhD, Georg M Schmölzer MD, PhD

“Sustained inflation during cardiopulmonary resuscitation in asphyxiated pediatric piglets - A randomized controlled animal study”

Presenter 3: Aleksandra Franczak

Aleksandra Franczak, Michael Joyce, Lorne Tyrrel, Paul Jurasz

“Unraveling the pathophysiological role of angiostatin in COVID-19”

Presenter 4: Matthew Martens

Shubham Soni, Matthew Martens, Sherif Shoieb, Zaid Maayah, Shingo Takahara, Heidi Silver, Mourad Ferdaoussi, Jason R.B. Dyck

“Ketone therapy reduces cardiac inflammation and cardiac dysfunction in sepsis”

10:15 - 10:45 Coffee & Poster Break



10:45 – 11:40

Podium Abstract Session #2: Atherosclerosis/Vascular
Co-Chaired by Drs. Sean Van Diepen and Gopinath Sutendra

Presenter 1: Joshua Kranrod

Joshua W Kranrod, Ahmed M Darwesh, John R Falck, John M Seubert

“Novel Synthetic Analogs of Omega-3 Fatty Acids Demonstrate Cardioprotective Properties”

Presenter 2: Pishoy Gouda

Pishoy Gouda, Sunjidatul Islam, Douglas Dover, Robert Welsh

“Outcomes of Management Strategies in Patients with Prior Coronary Artery Bypass Grafting Presenting with an Acute Coronary Syndrome”

Presenter 3: Rebecca Bodoarca

Rebecca Bodoarca, Roseanne O Yeung, Darren Lau

“New Diabetes Guidelines: Impact on Eligibility for SGLT-2 Inhibitors and GLP-1 Receptor Agonists in Canada”

Presenter 4: Olivia Weaver

Olivia Weaver, Ming Ye, Jennifer Vena, Dean Eurich, Spencer Proctor

“Non-fasting remnant cholesterol compared to traditional lipid biomarkers for cardiovascular disease risk prediction in Alberta Tomorrow Project participants with diabetes mellitus”

11:40 - 11:50

Hospital Foundation Introductions
Royal Alexandra Hospital Foundation
University Hospital Foundation

11:50 - 13:00

Lunch & Poster Session

13:00 - 14:00

Visiting Speaker

Dr. Slava Epelman, University of Toronto

“Cardio-immunology for Basic Scientists and Clinicians”.

This visit has been funded, in part, by the Walter Mackenzie Visiting Speaker Fund



14:00 - 15:00

Podium Abstract Session #3: Genes, Development & Adaptation
Co-Chaired by Sandra Davidge and Andrew Mackie

Presenter 1: Yana Kibalnyk

Yana Kibalnyk, Ronan Noble, Maria Alexiou, Kara Goodkey, Nicole Dittmann, Daniela Roth, Daniel Graf, Stephane Bourque and Anastassia Voronova

“The role of Ankrd11, an epigenetic regulator and KBG syndrome risk gene, in cardiovascular development”

Presenter 2: Amy Wooldridge

Amy Wooldridge, Mazhar Pasha, Raven Kirschenman, Floor Spaans, Sandra T. Davidge, Christy-Lynn Cooke

“Advanced maternal age alters cardiac adaptations to pregnancy in rats”

Presenter 3: Mitchell Wagner

Mitchell Wagner, Kasia Dzierlega, Xavier Clemente-Casares

“Hematopoietic deficiency of Bcl-2-like protein 11 (BIM) attenuates doxorubicin induced cardiac muscle atrophy”

Presenter 4: Yongneng Zhang

Yongneng Zhang, Maria Areli Lorenzana-Carrillo, Saymon Tejay, Yongsheng Liu, Alois Haromy, Gopinath Sutendra, Evangelos D. Michelakis

“A critical contribution of cardiac myofibroblasts in RV failure and the role of UCP2 SNPs in the predisposition to RV decompensation in pulmonary arterial hypertension”

15:00 - 15:30

Coffee & Poster Break

15:30 - 16:30

Podium Abstract Session #4: Heart Failure, Atrial Fibrillation & Transplant
Co-Chaired by Nadia Jahroudi and Padma Kaul

Presenter 1: Maria Areli Lorenzana-Carrillo

Maria Areli Lorenzana-Carrillo, Keshav Gopal, Nicole J. Byrne, Saymon Tejay, Bruno Saleme, Subhash K. Das, Yongneng Zhang, Alois Haromy, Farah Eaton, Michelle Mendiola Pla, Dawn E. Bowles, Jason R. B. Dyck, John R. Ussher, Evangelos D. Michelakis, Gopinath Sutendra

“Nuclear PKM2 can Function as a Molecular Platform to Stabilize the GATA4/6 Transcription Factors and/or Promote MDM2-Mediated P53 Reduction in Cardiomyocytes; Implications for Heart Failure”



15:30 – 16:30

Podium Abstract Session #4: Heart Failure, Atrial Fibrillation & Transplant
Co-Chaired by Nadia Jahroudi and Padma Kaul

Presenter 2: Douglas Dover

Haran Yogasundaram, MD, MSc, Douglas C. Dover, PhD, Nathaniel M. Hawkins, MBChB, MD, MPH, CCDS, Finlay A. McAlister, MD, MSc, Shaun G. Goodman, MD, MSc, Justin Ezekowitz, MBBCh, MSc, Padma Kaul, PhD, Roopinder K Sandhu, MD, MPH

“Trends in Uptake and Adherence to Oral Anticoagulation for Patients with Incident Atrial Fibrillation at High Stroke Risk across Healthcare Settings”

Presenter 3: Qiuyu Sun

Qiuyu Sun, Berna Güven, Cory S. Wagg, Amanda A. Oliveira, Heidi Silver, Qutuba G. Karwi, Faqi Wang, Liyan Zhang, Gavin Y. Oudit, Gary D. Lopaschuk

“The Balance Between Cardiac Glucose Oxidation and Fatty Acid Oxidation is Disrupted in Heart Failure with Preserved Ejection Fraction (HFpEF)”

Presenter 4: Nariman Sepehrvand

Nariman Sepehrvand, Majid Nabipoor, Erik Youngson, Finlay A. McAlister, Justin A. Ezekowitz

“Time to guideline-determined medical therapy in patients with de novo heart failure: a retrospective population-based study from Alberta, Canada”

16:30 - 16:45

Networking Break (Q&A with Speakers)

16:45 - 17:00

Concluding Remarks & Awards

17:00

Reception – Katz Atrium



Poster Presentations

- | BOARD # | TITLE / <u>Presenter</u> , Authors |
|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| #1 | Nutritional Status and Cannula Infections in Pediatric VAD Patients
<i><u>Mostafa Abbasi Dezfouly</u>; Tara Pidborochynski; Holger Buchholz; Darren H. Freed; I. De Villiers Jonker; Paula Holinski; Kylie Lewis; Guen Kernalguen; Diana Ly; Kailee Brownbridge; Jennifer Conway</i> |
| #2 | Correlation of cell senescence with the age-associated increase in VWF expression
<i><u>Parnian Alavi</u>, Douglas Brown, Rada Yousef Abdualla, Stephane Bourque, Jayan Nagendran, John Lewis, Nadia Jahroudi</i> |
| #3 | Ventricular Tachycardia Storm In Ischemic Cardiomyopathy: Treated With Gamut Of Therapies Culminating In Extra Corporeal Membrane Oxygenation Supported Ablation
<i><u>Ahmed Almarzuqi</u>, Evan Martow, Janek Senaratne, Omar Gilani, Kenneth Quadros</i> |
| #4 | Computational approaches towards the rational design of rescue drugs for hERG mutations
<i><u>Sara AlRawashdah</u> and Khaled H Barakat</i> |
| #5 | Utilization trends and predictors of outcomes in patients treated with IABP: A 10-year Canadian center experience
<i><u>Amendezo Etienne</u>, Tyrrell Benjamin, Dorsch Micha, Brass Neil</i> |
| #6 | A Comparison of eNOS-based Platelet Subpopulation Ratios and Platelet VEGF Content within COVID-19
<i><u>Amir Asqari</u>, Bruce Ritchie, Paul Jurasz</i> |
| #7 | Extracorporeal membrane oxygenation (ECMO) in severe influenza infection: A case series
<i><u>Eitan Aziza</u>, Gurmeet Singh, Wendy Sligl</i> |
| #8 | Optimization of Stroke Prophylaxis for Atrial Fibrillation within Calgary Co-op: Impact of A Quality Improvement Initiative
<i><u>Tammy J Bungard</u>, BSP, PharmD (University of Alberta); Sonal Ejner, BScPharm, APA, CRE (Calgary Co-operative Association Limited)</i> |



- #9 **Patient-Centred Care for Warfarin Management: A Pilot Study to Transition Care to High Risk Patients**
Tammy J Bungard, BSP, PharmD; Michael S McMurtry, MD; Steven Meyer, MD; Bruce Ritchie, MD; Ross T Tsuyuki, PharmD
- #10 **Fully Automated Segmentation of the Right Ventricle from Magnetic Resonance Imaging Using Convolutional Neural Networks**
Adam Carscadden, Michelle Noga, Kumaradevan Punithakumar
- #11 **Utilizing a Quartz Crystal Microbalance with dissipation (QCM-D) to Study Platelet NO-Signaling Under Flow Conditions**
D. Castaneda-Zaragoza, M. Saito, P. Jurasz
- #12 **Growth Differentiation Factor 15 Alleviates Diastolic Dysfunction in a Mouse Model of Diabetic Cardiomyopathy**
Jordan S.F. Chan, Keshav Gopal, Seyed Amirhossein Tabatabaei Dakhili, Amanda A. Greenwell, Christina T. Saed, Kunyan Yang, Farah Eaton and John R. Ussher
- #13 **Assessing Left Atrial Strain in Patients with Cancer: Are We Obtaining Normal Values?**
Adrian Chikwanha, Jonathan Windram, Harald Becher and Sudhir Nishtala
- #14 **Strain measurement on 2D recordings with ultrasound enhancing agents can be performed with software for non-enhanced recordings**
Matthew Church, Bernadette Foster, Jonathan Choy, Edith Pituskin, Ian Paterson, Harald Becher
- #15 **Retrospective Review of Anticoagulant Prescribing Patterns in Postoperative Atrial Fibrillation**
Kaitlyn Krahn, Sheri Koshman, Tammy Bungard, Ting Wang, Jian Song Zhou, June Chen, Mohamed A Omar and Emily Cowley
- #16 **Interhospital differences in the use of critical care therapies in coronary intensive care units and its association with in-hospital mortality: Insights from the Critical Care Cardiology Trials Network**
Sarah Donnelly, MD, MSc; Jason N. Katz MD, MHS; Wayne J. Tymchak, MD; Erin A. Bohula, MD DPhil; Jianping Guo MAS; David D. Berg MD; David A Morrow MD; Sean van Diepen MD, MSc, on behalf of the CCCTN investigators



- #17** **Family centered cardiac arrest care: An experience-based co-design project**
Matthew J Douma, Timothy AD Graham, Samina Ali, Katie N Dainty, Allison Bone, Katherine E Smith, Liz Dennet, Peter G Brindley, Thilo Kroll, Kate Frazer
-
- #18** **Dwarf open reading frame (DWORF) is a direct activator of the sarcoplasmic reticulum calcium pump SERCA**
Fisher, M., Young, H.
-
- #19** **PROTOCOL FOR 24-HOUR NEGATIVE PRESSURE VENTILATION EX-SITU LUNG PERFUSION WITH A PORCINE TRANSPLANTATION MODEL**
Keir Forgie, Abeline Watkins, Katie Du, Nick Fialka, Darren Freed, Jayan Nagendran
-
- #20** **Angiostatin and plasminogen levels as risk factors for mortality in hospitalized COVID-19 patients**
Aleksandra Franczak, Sarah Rathwell, Wendimagegn Alemayehu, Paul Jurasz
-
- #21** **Clinical Features and Complications of Loey's-Dietz Syndrome: A Systematic Review**
Pishoy Gouda, Robert Kay, Marina Habib, Amir Aziz, Eitan Aziza, Robert Welsh
-
- #22** **Clinical Phenotypes of Heart Failure across the spectrum of Ejection Fraction: A Cluster Analysis**
Pishoy Gouda, Wendimagegn Alemayehu, Sarah Rathwell, D. Ian Paterson, Todd Anderson, Jason R. B. Dyck, Jonathan G. Howlett, Gavin Y. Oudit MD, Finlay A. McAlister, Richard B. Thompson, Justin Ezekowitz
**On behalf of the Alberta HEART Study Investigators*
-
- #23** **Inhibition of Ketone Body Oxidation Does Not Worsen Diastolic Dysfunction in a Mouse Model of Type 2 Diabetes**
Amanda A. Greenwell, Christina T. Saed, Seyed Amirhossein Tabatabaei Dakhili, Keshav Gopal, Jordan S.F. Chan, Kunyan Yang, Farah Eaton, Cory Wagg, Gary D. Lopaschuk, John R. Ussher
-
- #24** **Atherosclerotic diseases and cardiovascular risk in Alberta patients with Abdominal Aortic Aneurysms: a population-based retrospective cohort study**
Hall SE, Dover DC, Welsh R



- #25** **A population-based retrospective cohort study: atherosclerotic diseases and cardiovascular risk factors in Alberta patients with Abdominal Aortic Aneurysms**
Hall SE, Dover D, Welsh R
-i
- #26** **The Ketogenic Diet Blunts Insulin-Stimulated Glucose Oxidation in the Failing Heart**
Kim L. Ho, Qutuba Karwi, Brandon Chen, Faqi Wang, Cory Wagg, Liyan Zhang, Sai Panidarapu, Simran Pherwani, Amanda Greenwell, Gavin Oudit, John R. Ussher, Gary D. Lopaschuk
-i
- #27** **Perinatal iron deficiency causes sex-specific mitochondrial responses in neonatal rat hearts**
Claudia D. Holody, Chunpeng Nie, Andrew G. Woodman, Rowan Carpenter, Ronan M.N. Noble, H el ene Lemieux, Stephane L. Bourque
-i
- #28** **Sex-Specific Effects of Prenatal Hypoxia on Adult Offspring Coronary Artery Function**
Nataliia Hula, Ricky Liu, Floor Spaans, Mazhar Pasha, Anita Quon, Raven Kirschenman, Christy-Lynn Cooke, Sandra T. Davidge
-i
- #29** **Small molecule RPI-194 stabilizes activated troponin to increase the calcium sensitivity of striated muscle contraction**
Zabed Mahmud, Svetlana Tikunova, Natalya Belevych, Corey Wagg, Pavel Zhabyeyev, Philip B. Liu, David V. Rasicci, Richard Schulz, Christopher M. Yengo, Gavin Y. Oudit, Gary D. Lopaschuk, Peter J. Reiser3, Jonathan P. Davis, and Peter M. Hwang
-i
- #30** **Sex Differences in the Management of Oral Anticoagulation and Outcomes for Emergency Department Presentation of Incident Atrial Fibrillation**
Sunjidatul Islam, MBBS, MSc, Douglas C Dover, PhD, Patrick Daniele, MSc, Nathaniel M Hawkins, MBChB, MD, MPH, Karin H Humphries, DSc, Padma Kaul, PhD, Roopinder K Sandhu, MD, MPH
-i
- #31** **17-(R/S)-Hydroxyeicosatetraenoic acid (HETE) induces the transcription of CYP1B1 and increases its catalytic activity**
Fadumo Ahmed Isse, Ayman O.S. El-Kadi
-i
- #32** **Development of a Preclinical Model of Late Onset Sepsis in Rats**
Forough Jahandideh 1,2, Kimberly Tworek 2, Ronan Noble 2,3, Kimberly Macala 1,2,4, Stephane Bourque 1,2



- #33** **A Computational Study of the interaction of SHP-2 Allosteric Inhibitors: Comparing the Wildtype SHP2 to Activating Mutant SHP-2**
Maryam Jama, Michael Overduin and Khaled Barakat
-
- #34** **PCSK9-mediated LDLR degradation pathway: clathrin or caveolae dependent**
Suha Jarad, Hong-mei Gu, Ziyang Zhang, Da-wei Zhang
-
- #35** **Developmental effects of particular matter on cardiovascular outcomes**
Peter Anto Johnson, John Christy Johnson, Austin Mardon
-
- #36** **The case for Prophylactic Appendectomy and Cholecystectomies prior to extreme Antarctic expeditions**
John Christy Johnson, Peter Anto Johnson, Austin Albert Mardon
-
- #37** **Inhibition of Branched-Chain Amino Acid Oxidation Aggravates Adverse Remodeling in the Failing Heart**
Qutuba G. Karwi, Liyan Zhang, Cory S. Wagg, Keshav Gopal, Kim L. Ho, Jody Levasseur, Qiuyu Sun, Sai Panidarapu, John R. Ussher, Jason R. B. Dyck, Gary D. Lopaschuk
-
- #38** **Repurposing TTE predictors of Cardiac amyloid to risk stratify the severe Aortic Stenosis population referred for TAVI**
Dr. Robert Kay, Dr. Waleed Alhumaid, Dr. Harald Becher, Dr. Miriam Shanks, Dr. Robert Welsh
-
- #39** **CD38 inhibition decreases myocardial glucose utilization and impairs post-ischemic recovery without altering protein acetylation status**
Ezra B. Ketema, Liyan Zhang, Qutuba G. Karwi, and Gary D. Lopaschuk
-
- #40** **Transition Preparation for Young Adolescents with Congenital Heart Disease: A Clinical Trial**
Andrew S. Mackie, Kathryn N. Rankin, Maryna Yaskina, Jody Gingrich, Elina Williams, Michelle Schuh, Adrienne H. Kovacs, Brian W. McCrindle, David Nicholas, Gwen R. Rempel
-
- #41** **Outcomes of Pregnancy in Women with Hypertrophic Cardiomyopathy: A Systematic Review**
Muhammad Moolla, Anoop Mathew, Kevin John, Haran Yogasundaram, Waleed Alhumaid, Sandra Campbell, Jonathan Windram



- #42** **Sex-specific differences in the expression of cardiac cytochrome P450 hydroxylases and epoxygenases in Sprague Dawley rats**
Samar H. Gerges, Ayman O.S. El-Kadi
-
- #43** **The therapeutic potential of neutrophil-derived Activin A inhibition in doxorubicin mediated cardiomyopathy**
Derek Parker, Kasia Dzierlega, Masoud Akbari, Xavier Clemente-Casares
-
- #44** **Maturation of cardiomyocytes is associated with a decrease in the Warburg effect due primarily to a decrease in glycolysis**
Kaya L. Persad, D. Andre, L. Zhang, B. Güvenç, M. Houncaren, J. Greenwood, G. Lopaschuk
-
- #45** **Ketones Provide an Extra Source of Fuel for the Failing Heart Without Impairing Glucose Oxidation**
Simran Pherwani, David Connolly, Qutuba G. Karwi, Michael Carr, Kim L. Ho, Cory S. Wagg, Quiyu Sun, Liyan Zhang, Jody Levasseur, Heidi Silver, Jason R. Dyck, Gary D. Lopaschuk
-
- #46** **Acute Myocardial Infarction in the Young: Comparing STEMI to NSTEMI**
Thomas M. Roston, Vivian Ghanya, Anamaria Savu, Janek Senaratne, Sean Van Diepen, Padma Kaul
-
- #47** **Selective angiotensin neutralization promotes endothelial migration an early stage of angiogenesis**
Max S. Saito and Paul Jurasz
-
- #48** **Deep and shallow learning for prediction of cardiovascular conditions using ECGs**
Amir Salimi, Sunil Kalmady Vasu, Weijie Sun, Nariman Sepehrvand, Eric Ly, Abram Hindle, Paul W. Armstrong, Kevin Bainey, Justin A. Ezekowitz, Finlay A. McAlister, Roopinder Sandhu, Padma Kaul
-
- #49** **Contrast Enhanced Cardiac Computed Tomography and the Presence of Intravascular Gas: A Patient Safety Study**
Karim Samji, Wasim Khan, Hefin Jones, Richard Owen, Dilini Vethanayagam
-
- #50** **Sodium restriction in patients with heart failure: A systematic review and meta-analysis of randomized clinical trials**
Nariman Sepehrvand, MD, PhD, Eloisa Colin-Ramirez, PhD*, Sarah Rathwell, MSc, Heather Ross, MD, MHSc, Jorge Escobedo MD, Peter Macdonald, MD, Richard Troughton, MBChB, Clara Saldarriaga, MD, Fernando Lanas, MD, Robert Doughty, MD, Finlay A. McAlister, MD, MSc, Justin A. Ezekowitz, MBChB, MSc*



** both contributed equally to this manuscript*

#51 Maternal Ketone Supplementation during Pregnancy Blunts the Adverse Cardiac Programming Effects Induced by Iron Deficiency in Neonatal Rats

***Shubham Soni**, Si Ning Liu, Ronan Noble, Claudia Holody, Jad-Julian Rachid, Alyssa Wiedemeyer, Mourad Ferdaoussi, Stephane Bourque, Jason RB Dyck*



#52 Anti-glycosaminoglycan monoclonal antibody prevents cardiac hypertrophy in a rat model of metabolic syndrome

***Yosdel Soto**^{1,2}, Rabban Mangat², Sandra Kelly², Ana M. Vázquez³, and Spencer Proctor²*



#53 Long term outcomes of alcohol septal ablation

***Joon Heng Tan**, Dickson Leung, Benjamin Tyrrell, Po Kee Cheung*



#54 Chemotherapy-Mediated Degradation of Myocardial Grb7 Promotes Assembly of the Mitochondrial Permeability Transition Pore and Susceptibility to Apoptosis in Cardiomyocytes; Implication for Chemotherapy-Induced Heart Failure

***Saymon Tejay**, Maria Areli Lorenzana Carillo, Alois Haromy, Yongsheng Liu, Farah Eaton, John Ussher, Evangelos Michelakis, Gopinath Sutendra*



#55 HLA Sensitization within One-Year of VAD Implantation: Prospective Study in Adults and Pediatrics

***Madeleine Townsend, MD**; Tara Pidborochynski, MSc; Patricia Campbell, MD; Anne Halpin, MSc; Simon Urschel, MD; Daniel Kim, MD; Susan Nahirniak, MD; Lori West, MD, PhD; Holger Buchholz, MD; Jennifer Conway, MD*



#56 Linoleic Acid-Derived Diol 12,13-DiHOME Modulates THP-1 Macrophage NLRP3 Inflammasome Activation

***Robert Valencia**, Brandon Azer, John M. Seubert*



#57 Age and Sex Differences in the Role of Soluble Epoxide Hydrolase in Cardiac Injury

***Ala Yousef**, Deanna Sosnowski, Liye Fang, John M Seubert*



#58 Comparing the Effectiveness of Two Cardiac Rehabilitation Exercise Therapy Programs

***Yuen T**, Buijs D, Hong Y, Van Damme A, Meyer T, Nagendran J, Gyenes GT*

