

# Chicago Regional Cardiovascular Research Symposium 2024

Friday, July 12<sup>th</sup>  
Loyola University Chicago  
Stritch School of Medicine

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7:30 – 8:45 AM

**Registration, Poster Setup, Refreshments**

Loyola University Chicago Stritch School of Medicine

8:45 – 8:50 AM

**Welcome Address**

**Dave Barefield** | Loyola University Chicago

Niehoff School of Nursing Lecture Hall

8:50 – 10:10 AM

**Session I: Trainee Oral Abstracts**

Moderator: **Monica Lee** | University of Illinois Chicago

8:50 **Hannah Cizauskas** | Loyola University Chicago

Myofilament proteolysis may underlie contractile remodeling in atrial fibrillation

9:02 **Asia Owais** | University of Illinois Chicago

Activation of the wnt signaling pathway in atrial myopathy induced atrial fibrillation in lamin A/C heart disease

9:14 **Edward Ouille** | Rush University

Active colitis promotes left ventricular remodeling through loss of t-tubule integrity via angiotensin ii signaling

9:26 **Amirala Bakhshiannik** | Medical College of Wisconsin

The role of Shroom3 protein in cardiac regeneration

9:38 **Karla Marquez Noguerras** | Loyola University Chicago

Cardiac localized polycystin-2 regulates natriuretic peptide production and its loss contributes to hypertension

9:50 **Asmaa Youssif** | Northwestern University

The role of angiopoietin 1 in the pathogenesis of choroidal neovascularization

10:10 – 11:00 AM

**Session II: Five-Minute Rapid-Fire Abstracts**

Moderators: **Dave Barefield** | Loyola University Chicago, **Paola Rosas** | University of Illinois Chicago

**Julia Pindaro** | Medical College of Wisconsin

Genetic mapping of cardiac macrophage heterogeneity using the hybrid rat diversity

**Michaela Door** | Loyola University Chicago

Glycogen synthase kinase 3b localization to the sarcomere z-disc is regulated by protein tyrosine phosphatase 1b

**Ghada Abu Irsheed** | University of Illinois Chicago

Impact of social determinants of health and sleep on cardiometabolic health in pregnant African American women

**Marisa Stachowski** | Northwestern University

The outer mitochondrial membrane protein Mtch2 regulates cardiac and whole-body metabolic homeostasis

**Alejandro Alvarez-Arce** | Loyola University Chicago

The N-terminal of MyBP-HL regulates sarcomere function

**Karim Ullah** | University of Chicago

Plasmalemma vesicle-associated protein regulates cardiac endothelial permeability and is ARNT-dependent

**Caelan Moreno** | Medical College of Wisconsin

Determining the role of IL13 signaling to cardiac myofibroblasts in the post myocardial infarction response

**Taylor Phillips** | Loyola University Chicago

Poison peptides may contribute to dysregulation of SERCA in heart failure

11:00 – 11:25 AM

**Refreshments**

11:25 – 12:25 PM

**Keynote Address**

Moderator: **Rongxue (Rosie) Wu** | University of Chicago

**Dawood Darbar** | University of Illinois Chicago

Translation from bench to bedside: personalizing therapy for atrial fibrillation

12:30 PM – 2:30 PM

**Lunch and Posters**

Stritch School of Medicine 2<sup>nd</sup> Floor Atrium

1:00 – 1:45 PM **Odd Number Posters**

1:45 – 2:30 PM **Even Number Posters**

2:30 – 4:00 PM

**Session III: Principal Investigator Talks**

Moderator: **Caitlin O'Meara** | Medical College of Wisconsin

2:30 **Grace Muller** | Loyola University Chicago

The cAMP-hydrolyzing PDE 1 and 3 show distinct cell signaling and function effects in the guinea pig heart

3:00 **Lothar Blatter** | Rush University

Atrial excitation-contraction coupling, calcium signaling and pro-arrhythmic alternans

3:30 **J-P Jin** | University of Illinois at Chicago

Targeting troponin functions to adjust myocardial kinetics and improve pumping efficiency

4:00 – 4:15 PM

**Refreshments**

4:15 – 5:45 PM

**Session IV: Principal Investigator Talks**

Moderator: **Abeer Mohamed** | University of Illinois Chicago

4:15 **Bin Zhou** | University of Chicago

Endocardial cells in heart development and disease

4:45 **Hossein Ardehali** | Northwestern University

Hexokinase-1 mitochondrial dissociation and protein O-GlcNAcylation drive HFpEF

5:15 **Lu Han** | Medical College of Wisconsin

Cardiac regeneration: from nuclear lamina to centrosomes

5:45 PM

**Announcement of Awards**

**Paola Rosas** | University of Illinois Chicago

**Monica Lee** | University of Illinois Chicago

**Abeer Mohamed** | University of Illinois Chicago

**Dave Barefield** | Loyola University Chicago

6:00 – 8:00 PM

**Reception and Posters**

Stritch School of Medicine 2<sup>nd</sup> Floor Atrium

## Acknowledgements

### 2024 Co-organizers

**Paola Rosas** | University of Illinois Chicago  
**Monica Lee** | University of Illinois Chicago  
**Abeer Mohamed** | University of Illinois Chicago  
**Dave Barefield** | Loyola University Chicago

**We thank the 2024 organizing committee for their help producing a high-quality symposium.**

Jonathan Kirk (LUC), Jaroslava Seflova (LUC), Ivana Kuo (LUC), Grace Muller (LUC), Rongxue (Rosie) Wu (UC), Caitlin O'Meara (MCW), Brian Lin (MCW), Kathrin Banach (Rush), Lothar Blatter (Rush), Prasanth Puthanveetil (MU).

**THANKS TO OUR SPONSORS FOR FUNDING THIS SYMPOSIUM AND PROVIDING THE PRIZES.**

### Loyola University Chicago

- **Cardiovascular Research Institute and**
- **Department of Cell and Molecular Physiology**

### University of Illinois Chicago

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**SPECIAL THANKS** to **Kiara Meza (Northwestern)** for coordinating all the abstracts and **Nayelly Villalobos (Loyola)** for organizing the logistics for this meeting.

### Abstract List

Abstract numbers correspond to poster board numbers.

1. **Daniel Acciani** | *Characterization and Deployment of Validated Atrial Fibrillation Polygenic Risk Score.* | Northwestern University
2. **Alejandro Alvarez-Arce** | *The 62 amino terminal residues of MyBP-HL contain a unique domain that can regulate sarcomere function.* | Loyola University Chicago

3. **Anokhi Amara** | *Regulation of HSPB8 in Cardiac Stress: Insights from Ischemia Reperfusion Injury and the CASA Pathway.* | Loyola University Chicago
4. **Olivera Antic** | *Analysis of Baroreflex and Heart Rate Variability – Tools in Cardiovascular Pre-clinical Safety Studies.* | AbbVie
5. **Kelly Araujo** | *Evaluating MYBPC3 and MYBPHL missense mutations on sarcomere incorporation.* | Loyola University Chicago
6. **Amirala Bakhshiannik** | *The Role of Shroom3 Protein in Cardiac Regeneration.* | Medical College of Wisconsin
7. **Sorab Bedi** | *Cardiac glycogen fluctuates following short- and long-term binge drinking in a sex specific manner.* | Midwestern University
8. **Anna Berthiaume** | *E2F7/8 Ablation Increases Cardiomyocyte Division In Non-Regenerative Heart.* | Medical College of Wisconsin
9. **Hannah Cizauskas** | *Myofilament proteolysis may underlie contractile remodeling in atrial fibrillation.* | Loyola University Chicago
10. **Christine Delligatti** | *Methylglyoxal glycation competes with ubiquitination, disrupting sarcomere function.* | Loyola University Chicago
11. **Michaela Door** | *Glycogen Synthase Kinase 3b localization to the sarcomere z-disc is regulated by Protein Tyrosine Phosphatase 1B.* | Loyola University Chicago
12. **Michael Fitch** | *The cAMP-hydrolyzing phosphodiesterases (PDEs) 1 and 3 show distinct cAMP signaling and cell function effects in the guinea pig heart.* | Loyola University Chicago
13. **Michael Flinn** | *Myofibroblast Ccn3 Contributes to Adverse Cardiac Outcomes Following Myocardial Infarction.* | Medical College of Wisconsin
14. **Henry Gong** | *BAG1 and BAG3 do not compensate for each other during disease development.* | Loyola University Chicago
15. **Sameer Ahmad Guru** | *TRPC6 pharmacological inhibition as a therapeutic strategy to treat DMD associated cardiovascular phenotypes in the D2.mdx model of DMD.* | Medical College of Wisconsin
16. **Bayan A. Hammad** | *A Sweet Surprise: Evaluating Impact of Diabetes on Transcatheter Aortic Valve Replacement Outcomes.* | University of Illinois at Chicago
17. **Hana Pak** | *Short duration space travel does not significantly affect cardiomyocyte sarcomere function.* | Loyola University Chicago



18. **Jomana Hatahet** | *Elevated Beat Rate Induces Benign Cardiac Troponin I Release due to Bleb Formation in Human Induced Pluripotent Stem Cell-Derived Cardiomyocytes (hiPSC-CMs).* | AbbVie
19. **Ghada Abu Irsheed** | *Impact of Multidimensional Sleep Health on Glycemic Control and Self-Reported Health Outcomes in Type 1 Diabetes.* | University of Illinois at Chicago
20. **Ghada Abu Irsheed** | *Impact of Social Determinants of Health and Sleep on Cardiometabolic Health in Pregnant African American Women.* | University of Illinois at Chicago
21. **Giedrius Kanaporis** | *Activation of small conductance Ca<sup>2+</sup>-activated K<sup>+</sup> channels reduce risk of cardiac alternans in Long QT syndrome.* | Rush University
22. **Ullah Karim** | *Plasmalemma Vesicle-Associated Protein (PLVAP) regulates Cardiac Endothelial Permeability and is ARNT-dependent.* | University of Chicago
23. **Shreya Kurup** | *Cardiac and Intestinal Tissue Conduct Developmental and Reparative Processes in Response to Lymphangiocrine Signaling.* | Northwestern University
24. **Liomar Neves** | *Validation of rodent echocardiography for evaluating cardiac function and morphology in preclinical safety assessment.* | AbbVie
25. **Siqi Li** | *Microtubule Organizing Centers in Cardiomyocyte Development.* | Medical College of Wisconsin
26. **Dan Marian** | *Caspase 12 Deficiency Protects Heart Failure and Remodeling in Mice.* | University of Illinois at Chicago
27. **Dan Marian** | *UIC Cardiovascular Research Core: a Platform to Study Cardiovascular Diseases.* | University of Illinois at Chicago
28. **Karla M. Márquez Nogueras** | *Cardiac Localized Polycystin-2 regulates Natriuretic Peptide Production and its loss contributes to Hypertension.* | Loyola University Chicago
29. **Tanner Monroe** | *Combining Noncoding and Coding Genetic Variation Improves Arrhythmia Risk Prediction.* | Northwestern University
30. **Caelan W Moreno** | *Determining the role of IL13 signaling to cardiac myofibroblasts in the post myocardial infarction response.* | Medical College of Wisconsin
31. **Nicholas Olivieri** | *Comparison of polycystin 2 mutation severity and cardiac dysfunction in autosomal dominant polycystic kidney disease (ADPKD) type 2 patients.* | Loyola University Chicago
32. **Yuriana Oropeza-Almazán** | *Role of 5'AMP-protein kinase (AMPK) in pacing-induced calcium alternans in atrial myocytes.* | Rush University
33. **Edward Ouille** | *Active Colitis Promotes Left Ventricular Remodeling Through Loss of T-Tubule Integrity via Angiotensin II Signaling.* | Rush University
34. **Asia Owais** | *Epigenetic Activation of Endothelial to Mesenchymal Transition (EndMT) Links Endothelial Dysfunction to Atrial Fibrillation in Lamin A/C Cardiomyopathy.* | University of Illinois at Chicago
35. **Asia Owais** | *Activation of the Wnt Signaling Pathway in Atrial Myopathy induced Atrial Fibrillation in Lamin A/C Heart Disease.* | University of Illinois at Chicago
36. **Taylor A. Phillips** | *Poison Peptides May Contribute to Dysregulation of SERCA in Heart Failure.* | Loyola University Chicago
37. **Lin Piao** | *Mitigating Oxygen Toxicity Post-Cardiac Arrest Through Targeting Dynamin Related Protein 1 (Drp1).* | University of Chicago
38. **Julia Pindaro** | *Genetic Mapping of Cardiac Macrophage Heterogeneity Using the Hybrid Rat Diversity Panel.* | Medical College of Wisconsin
39. **Arpita Roy** | *Identification of the Molecular Mechanisms by which the Lymphangiocrine Factor Reelin Regulates Cardiac Development.* | Northwestern University
40. **Rohan Sethi** | *Elucidating PI3K/PTEN Regulation of Phagocytosis in Macrophages.* | Loyola University Chicago
41. **Laura Sherer** | *Elevated Hsp70 Does Not Rescue BAG3 Levels After Hypoxia-Reperfusion Stress or Ischemia-Reperfusion Injury* | Loyola University Chicago
42. **Marisa Stachowski** | *The outer mitochondrial membrane protein Mtch2 regulates cardiac and whole-body metabolic homeostasis* | Northwestern University
43. **Walter Thompson** | *The 14-3-3g interactome integrates changes in myofilament mechanotransduction with the metabolic machinery in the heart.* | University of Illinois at Chicago
44. **Thai My Duyen Tran** | *Intestinal atrophy contributes to low-grade inflammation, cardiac dysfunction and metabolic syndrome-like phenotype in a model of heart failure with preserved ejection fraction.* | University of Illinois at Chicago
45. **Micah Yoder** | *Sweet Taste Receptor Activation Regulates Calcium Handling and Contractility in Cardiomyocytes* | Loyola University Chicago
46. **Asmaa Youssif** | *The role of angiopoietin 1 in the pathogenesis of choroidal neovascularization* | Northwestern University

47. **Ahmed Zied** | *Unveiling the regulatory mechanisms and functional significance of BAG3 cleavage in ischemic cardiomyopathy.* | Loyola University Chicago
48. **Abeer M. Mohamed** | *MicroRNA dysregulation as a mechanism of cadmium-induced atherosclerosis.* | University of Illinois at Chicago
49. **Imaduddin Mirza** | *Sulforaphane Prevents High-fat Diet-induced Cardiometabolic Dysfunction and Muscle Atrophy.* | University of Illinois at Chicago
50. **Amro Mostafa** | *Adiposomal lipidomics and cardiometabolic risk factors in obese and non-obese individuals.* | University of Illinois at Chicago
51. **Hiroki Kittaka** | *Atrial myocyte remodeling induced by active colitis, characterized by electrophysiology.* | Rush University
52. **Alexander Glasco** | *Linking Radionuclide Exposure and Cardiovascular Diseases: An Investigation of the UC-Davis Strontium-90 Ingestion Beagle Study.* | Northwestern University
53. **Shreeya Gandhi** | *The Effects of Conditional Loss of Myosin Binding Protein H-Like on Cardiac Function.* | Loyola University Chicago