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A. Education and Training:

09/1987 - 07/1995 Shandong University of Traditional Chinese Medicine, Bachelor of Medicine, Ji'nan, Shandong Province, China
09/1995 - 07/1998 China Academy of Chinese Medicine, M.D., Beijing, China
09/2000 - 07/2003 China Academy of Chinese Medicine, PhD., Beijing, China
10/2003 - 11/2005 Tsinghua University, Postdoctoral Training, Beijing, China

B. Positions and Employment

Clinical Training and Hospital Appointments

07/1998 - 09/2000 Resident in Medicine, Wangjing Hospital, China Academy of Chinese Medicine, Beijing, China

Academic Appointments

11/2005 - 08/2011 Assistant Investigator, Nonhuman Primate Research Center, The Institute of Molecular Medicine, Peking University, Beijing, China
08/2011 - 08/2013 Associate Investigator, Nonhuman Primate Research Center, The Institute of Molecular Medicine, Peking University, Beijing, China
07/2011 - 07/2012 Senior Research Associate, Case Cardiovascular Research Institute, Case Western Reserve University, Cleveland, OH, US.
07/2012 - present Research Scientist, Director, Cardiovascular Physiology Lab, Case Cardiovascular Research Institute, Case Western Reserve University, Cleveland, OH, US.

C. Research Interest

The primary goal of the Cardiovascular Physiology Lab is to assess in vivo physiology in health and disease using state-of-art murine models for basic and translational medicine research. Robust and reliable disease models related to cardiovascular, urinary, and central nervous system have been established. These models include, but are not limited to, Transverse Aortic Constriction (TAC), myocardial infarction, myocardial ischemia/reperfusion injury, heart failure, limb ischemia, Middle Cerebral Artery Occlusion (MCAO), kidney

ischemia/reperfusion injury, deep vein thrombosis. In addition, our lab is equipped with high definition echocardiography, hemodynamic measurement capabilities and telemetric assessment.

The Cardiovascular Physiology Lab closely collaborates with investigators from Case Cardiovascular Research Institute, Institute for Transformative Molecular Medicine, Harrington Discovery Institute and Harrington Heart & Vascular Institute to bring together researchers of multiple disciplines to link physiologic and pathologic function at the in vivo.

D. Selected peer-reviewed publications (2011-2019)

1. Richard T. Premont, James D. Reynolds, **Rongli Zhang**, Jonathan S. Stamler. Role of Nitric Oxide Carried by Hemoglobin in Cardiovascular Physiology: Developments on a Three-Gas Respiratory Cycle. ***Circulation Research***. 2019, DOI:10.1161/CIRCRESAHA. 119.315626
2. Shuxin Han, Jonathan Ray, Preeti Pathak, David Sweet, **Rongli Zhang**, Huiyun Gao, Nisha Jain, Erik Koritzinsky, Keichiro Matoba, Weixiong Xu, Ernest Chan, Daniel Simon, and Mukesh Jain. KLF15 Regulates Endobiotic and Xenobiotic Metabolism. ***Nature Metabolism***, 1, 422-430 (2019).
3. Hua-Lin Zhou, **Rongli Zhang***, Puneet Anand*, Colin T. Stomberski, Zhaoxia Qian, Alfred Hausladen, Liwen Wang, Eugene P. Rhee, Samir M. Parikh, S. Ananth Karumanchi, Jonathan S. Stamler. Metabolic reprogramming by the S-nitroso-CoA Reductase system protects from kidney injury. ***Nature***, 2019, 96-100. (* ***Equal contribution***)
4. Hiroki Hayashi, Douglas T. Hess, **Rongli Zhang**, Keiki Sugi, Huiyun Gao, Bea L. Tan, Dawn E. Bowles, Carmelo A. Milano, Mukesh K. Jain, Walter J. Koch, Jonathan S. Stamler. S-Nitrosylation of β -Arrestins Biases Receptor Signaling and Confers Ligand Independence. ***Molecular Cell***, 2018, 70, 473–487.
5. Xudong Liao, Yuyan Shen, **Rongli Zhang**, Keiki Sugi, Neelakantan T. Vasudevan, M. Amer Alaiti, David R. Sweet, Lin Zhou, Yulan Qing, Stanton L. Gerson, Chen Fu, Anthony Wynshaw-Boris, Rui Hu, Martin A. Schwartz, Hisashi Fujioka, Brian Richardson, Mark J. Cameron, Hiroki Hayashi, Jonathan S. Stamler, Mukesh K. Jain. Distinct roles of resident and nonresident macrophages in nonischemic cardiomyopathy. ***Proceedings of the National Academy of Sciences***, 2018; 115(20): E4661–E4669.
6. Keiichiro Matoba, Yuan Lu, **Rongli Zhang**, Eric Chen, Benlian Wang, Domenick A. Prosdocimo, and Mukesh K. Jain. Adipose KLF15 controls lipid handling to adapt to nutrient availability. ***Cell Reports***, 2017, 21, 3129–3140.
7. Paishiun Hsieh, Guangjin Zhou, Yiyuan Yuan, **Rongli Zhang**, Domenick Prosdocimo, Panjamaporn Sangwung, Anna Borton, Evgenii Boriushkin, Anne Hamik, Hisashi Fujioka, Ciaran Fealy, John Kirwan, Maureen Peters, Yuan Lu, Xudong Liao, Diana Ramírez-Bergeron, Zhaoyang Feng, Mukesh Jain. A conserved KLF-autophagy pathway modulates nematode lifespan and mammalian age-associated vascular dysfunction. ***Nature Communications***, 8: 914, DOI: 10.1038/s41467-017-00899-5 (2017).
8. Qiming Duan, Sarah McMahon, Priti Anand, Hirsh Shah, Sean Thomas, Hazel T. Salunga, Yu Huang, **Rongli Zhang**, Aarathi Sahadevan, Madeleine E. Lemieux, Jonathan D. Brown, Deepak Srivastava, James E. Bradner, Timothy A. McKinsey, Saptarsi M. Haldar. BET bromodomain inhibition suppresses innate inflammatory and profibrotic transcriptional networks in heart failure. ***Science Translational Medicine***. 9(390): eaah5084 (2017).
9. **Rongli Zhang**, Jonathan W. Ray, Mukesh Jain, Shuxin Han. Ileectomy-induced Bile Over-accumulation in Mouse Intestine. ***Journal of Visualized Experiments***. e55728, doi:10.3791/55728 (2017). (invited by the ***JoVE***)
10. **Rongli Zhang**, Yuyan Shen, Lin Zhou, Panjamaporn Sangwung, Hisashi Fujioka, Lilei Zhang, Xudong Liao. Short-term administration of Nicotinamide Mononucleotide preserves cardiac mitochondrial homeostasis and prevents heart failure. ***Journal of Molecular and Cellular Cardiology***, 2017, 112: 64-73. doi:10.1016/j.yjmcc.2017.09.001

11. Lilei Zhang, **Rongli Zhang**, Chih-Liang Tien, Ricky E. Chan, Keiki Sugi, Chen Fu, Austin C. Griffin, Yuyan Shen, Thomas P. Burris, Xudong Liao, Mukesh K. Jain. REV-ERB α ameliorates heart failure through transcription repression. *JCI Insight*. 2017; 2(17): e95177. doi:10.1172/jci.insight.95177.
12. Panjamaporn Sangwung, Guangjin Zhou, Lalitha Nayak, Ernest Chan, Sandeep Kumar Dong-Won Kang, **Rongli Zhang**, Xudong Liao, Yuan Lu, Keiki Sugi, Hisashi Fujioka, Hong Shi, Stephanie Lapping, Chandra Ghosh, Sarah Higgins, Samir Parikh, Hanjoong Jo, Mukesh Jain. KLF2 and KLF4 control endothelial identity and vascular integrity. *JCI Insight*, 2017; 2(4):e91700. doi:10.1172/jci.insight.91700.
13. Sanjoy K. Chowdhury, Wei Liu, Min Zi, Yatong Li, Shunyao Wang, Hoyee Tsui, Sukhpal Prehar, Simon J. Castro, Henggui Zhang, Yong Ji, Xiuqin Zhang, Rui-ping Xiao, **Rongli Zhang**, Ming Lei, Lukas Cyganek, Kaomei Guan, Catherine B. Millar, Xudong Liao, Mukesh K. Jain, Mark R. Boyett, Elizabeth J. Cartwright, Holly A. Shiels, Xin Wang. Stress-Activated Kinase MKK7 Governs Epigenetics of Cardiac Repolarization for Arrhythmia Prevention. *Circulation*, 2017; 135:683-699
14. Chao Zhang, Dustin Voort, Hong Shi, **Rongli Zhang**, Yulan Qing, Shuichi Hiraoka, Minoru Takemoto, Koutaro Yokote, Joseph Moxon, Paul Norman, Helena Kuivaniemi, Brandon Atkins, Stanton L. Gerson, Guo-Ping Shi, Nianguo Dong, Jonathan Golledge, Bernard Perbal, Domenick A. Prosdocimo, Zhiyong Lin. Matricellular Protein CCN3 Mitigates Abdominal Aortic Aneurysm. *Journal of Clinical Investigation*, 2016; 126 (4):1282-1299.
15. **Rongli Zhang**, Douglas T. Hess, James R. Reynolds, Jonathan S. Stamler. Hemoglobin S-nitrosylation plays an essential role in cardioprotection. *Journal of Clinical Investigation*, 2016; 126(12): 4654-4658.

(**Commentary**: Claude A. Piantadosi. Cardioprotective role of S-nitrosylated hemoglobin from rbc. *Journal of Clinical Investigation*. doi:10.1172/JCI91303,
JCI Editor's picks: https://asci_content_assets.s3.amazonaws.com/impact/pdf/49/jci_tm_2016_12.pdf;
Scientific Show Stopper: <http://www.jci.org/posts/506>)
16. **Rongli Zhang**, Douglas T Hess, Zhaoxia Qian, Alfred Hausladen, Fabio Fonseca, Ruchi Chaube, James D Reynolds, Jonathan S Stamler. Hemoglobin β Cys93 is essential for cardiovascular function and integrated response to hypoxia. *Proceedings of the National Academy of Sciences*, 2015; 112(20): 6425-6430.

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17. **Rongli Zhang***, Shila Gilbert*, Xinsheng Yao*, Jefferson Vallance, Kris Steinbrecher, Richard Moriggl, Dongsheng Zhang, Madhu Eluri, Haifeng Chen, Huiqing Cao, Noah Shroyer, Lee Denson, Xiaonan Han. Natural compound methyl protodioscin protects against intestinal inflammation through modulation of intestinal immune responses. *Pharma Res Per*, 3(2), 2015, e00118 doi: 10.1002/prp2.118. (* **Co-first author**)
18. Shuxin Han*, **Rongli Zhang***, Rajan Jain, Hong Shi, Guangjin Zhou, Panjamaporn Sangwung, Derin Tugal, Lilei Zhang, Lalitha Nayak, Brandon Atkins, Domenick A. Prosdocimo, Yuan Lu, Xudong Liao, Jonathan A. Epstein, Mukesh K Jain. Circadian Control of Bile Acid Synthesis by a KLF15-Fgf15 axis. *Nature Communications*, 7:7231 doi: 10.1038/ncomms8231 (2015). (* **Co-first author**)
19. Xudong Liao, **Rongli Zhang**, Yuan Lu, Domenick A Prosdocimo, Panjamaporn Sangwung, Lilei Zhang, Guangjin Zhou, Puneet Anand, Ling Lai, Teresa C Leone, Hisashi Fujioka, Fang Ye, Mariana G Rosca, Charles L Hoppel, P Christian Schulze, E Dale Abel, Jonathan S Stamler, Daniel P Kelly, Mukesh K Jain. Kruppel-like factor 4 is critical for transcriptional control of cardiac mitochondrial homeostasis. *Journal of Clinical Investigation*, 2015;125(9):3461–3476. doi:10.1172/JCI79964.

20. Lilei Zhang, Domenick A. Prosdocimo, Xiaodong Bai, Chen Fu, **Rongli Zhang**, Frank Campbell, Xudong Liao, Jeff Coller, Mukesh K. Jain. KLF15 Establishes the Landscape of Diurnal Expression in the Heart. ***Cell Reports***, 2015, 13:2368–2375.
21. Domenick A. Prosdocimo, Jenine E. John, Lilei Zhang, Elizabeth S. Efraim, **Rongli Zhang**, Xudong Liao, and Mukesh K. Jain. KLF15 and PPAR α cooperate to regulate cardiomyocyte lipid gene expression and oxidation. ***PPAR Research***, 2015. doi:10.1155/2015/201625
22. Jiayu Chen*, Zhiyu Peng*, **Rongli Zhang***, Xinzhuang Yang, Bertrand Chin-Ming Tan, Huaying Fang, Chujun Liu, Mingming Shi, Zhiqiang Ye, Yong E. Zhang, Minghua Deng, Xiuqin Zhang, Chuan-Yun Li. RNA Editome in rhesus macaque shaped by purifying selection. ***PLoS Genet***, 2014; 10(4):e1004274. doi:10.1371/journal.pgen. 1004274. (* **Co-first author**)
23. Lulu Sun, Chao Chen, Beibei Jiang, Yanli Li, Qiuping Deng, Min Sun, Xiangbo An, Xiao Yang, Ying Yang, **Rongli Zhang**, Yao Lu, De-Sheng Zhu, Yingqing Huo, Gen-Sheng Feng, Youyi Zhang, Jincal Luo. Grb2-associated binder 1 is essential for cardioprotection against ischemia/reperfusion injury. ***Basic Research in Cardiology***, 2014; 109(4):420.
24. Mohammad A. Shatat, Hongmei Tian, **Rongli Zhang**, Gaurav Tandon, Andrew Hale, Jason S. Fritz, José Martínez-González, Cristina Rodríguez, Guangjin Zhou, Hunter C. Champion, Mukesh K. Jain, Anne Hamik. Endothelial Krüppel-Like Factor 4 modulates pulmonary arterial hypertension. ***Am J Respir Cell Mol Biol***, 2014; 50 (3): 647-53.
25. Huiliang Zhang, Wei Shang, Xing Zhang, Jingli Gu, Xianhua Wang, Ming Zheng, Yanru Wang, Zhuan Zhou, Ji-Min Cao, Guangju Ji, **Rongli Zhang***, Heping Cheng**. β -adrenergic-stimulated L-type channel Ca²⁺ entry mediates hypoxic Ca²⁺ overload in intact heart. ***Journal of Molecular and Cellular Cardiology***, 2013, 65:51-58. (* **Corresponding author**, ** **co-corresponding author**)
26. Priti Anand, Jonathan D. Brown, Charles Y. Lin, Jun Qi, **Rongli Zhang**, Pedro Calderon Artero, M. Amer Alaiti, Jace Bullard, Kareem Alazem, Kenneth B. Margulies, Thomas P. Coppola, Madeleine Lemieux, Jorge Plutzky, James E. Bradner, Saptarsi M. Haldar. BET bromodomains mediate transcriptional pause release in heart failure. ***Cell***, 2013, 154, 569–582. (Highlighted in: ***Nature Reviews Drug Discovery***, ***Science Translational Medicine***, ***Nature Publishing Group SciBX***).
27. Yan Xiong, Zhenqian Hu, Xiaofan Han, Beibei Jiang, **Rongli Zhang**, Xiaoyu Zhang, Yao Lu, Chengyang Geng, Wei Li, Yulong He, Yingqing Huo, and Masabumi Shibuya, Jincal Luo. Hypertensive stretch regulates endothelial exocytosis of Weibel-Palade bodies through VEGF receptor 2 signaling pathways. ***Cell Research***, 2013, 23 (6):820-834.
28. Shijian Zhang, Chujun Liu, Mingming Shi, Lei Kong, Jiayu Chen, Weizhen Zhou, Xiaotong Zhu, Peng Yu, Jue Wang, Xinzhuang Yang, Ning Hou, Zhiqiang Ye, **Rongli Zhang**, Ruiping Xiao, Xiuqin Zhang, Chuanyun Li. RhesusBase: a Knowledgebase for the monkey research community. ***Nucleic Acids Research***, 2013; 41: D892-D905, doi:10.1093/nar/gks835.
29. Hong Shi, Baiyang Sheng, Feng Zhang, Chunying Wu, **Rongli Zhang**, Junqing Zhu, Kui Xu, Youzhi Kuang, Stephen C. Jameson, Zhiyong Lin, Yanming Wang, Jun Chen, Mukesh K. Jain, G. Brandon Atkins. Kruppel-like factor 2 protects against ischemic stroke by regulating endothelial blood brain barrier function. ***Am J Physiol Heart Circ Physiol***, 2013; 304: H796–H805.
30. Sanchita Basu, Dinesh Kumar Srinivasan, Ke Yang, Hema Raina, Suhanti Banerjee, **Rongli Zhang**, Steven A. Fisher, Aaron Proweller. Notch Transcriptional control of vascular smooth muscle regulatory gene expression and function. ***J. Biol. Chem***, 2013; 288 (16):11191-202.
31. Shila Gilbert, **Rongli Zhang**, Lee Denson, Richard Moriggl, Kris Steinbrecher, Noah Shroyer, James Lin, Xiaonan Han. Enterocyte STAT5 promotes mucosal wound healing via suppression of myosin light chain kinase-mediated loss of barrier function and Inflammation. ***EMBO Molecular Medicine***, 2012; 4(2):109-124.

32. Chen Xie, Yong E. Zhang, Jia-Yu Chen, Chu-Jun Liu, Wei-Zhen Zhou, Ying Li, Mao Zhang, **Rongli Zhang**, Liping Wei, Chuan-Yun Li. Hominoid-specific de novo protein-coding genes originating from long non-coding RNAs. *PLoS Genet*, 2012; 8(9):e1002942. doi: 10.1371/journal.pgen.1002942
33. Qionglian Liang, Xiaoping Liang, Yiming Wang, Yuanyuan Xie, **Rongli Zhang**, Xi Chen, Rong Gao, Yijun Cheng, Jun Wu, Qingbo Xu, Qingzhong Xiao, Xue Li, Shufeng Lv, Xuemei Fan, Hongyang Zhang, Qingli Zhang, Guoan Luo. Effective components screening and anti-myocardial infarction mechanism study of the Chinese medicine NSLF6 based on "system to system" mode. *Journal of Translational Medicine*, 2012; 10: 26.
34. Xiuqin Zhang *, **Rongli Zhang** *, Susanne Raab, Wen Zheng, Jue Wang, Na Liu, Tiangang Zhu, Lifang Xue, Zhentao Song, Jiaming Mao, Kaitao Li, Huiliang Zhang, Yan Zhang, Chao Han, Yi Ding, Hui Wang, Ning Hou, Yuli Liu, Shujiang Shang, Chuanyun Li, Elena Sebkova, Heping Cheng, Paul Huang. Rhesus macaques develop metabolic syndrome with reversible vascular dysfunction responsive to pioglitazone. *Circulation*, 2011; 124:77-86. . (* **Co-first author**)
35. Yao Lu, Yan Xiong, Yingqing Huo, Jingyan Han, Xiao Yang, **Rongli Zhang**, Desheng Zhu, Stefan Klein-Heßling, Jun Li, Xiaoyu Zhang, Xiaofan Han, Yanli Li, Bin Sheng, Yulong He, Masabumi Shibuya, Gen-Sheng Feng, Jincai Luo. Grb-2–associated binder 1 (Gab1) regulates postnatal ischemic and VEGF-induced angiogenesis through the protein kinase A – endothelial NOS pathway. *Proceedings of the National Academy of Sciences*, 2011; 108(7):2957-2962.
36. Peidong Han, Wenfeng Cai, Yanru Wang, Chi Keung Lam, Demetrios Arvanitis, Vivek Singh, Shan Chen, Huilang Zhang, **Rongli Zhang**, Heping Cheng, Evangelia Kranias. Catecholaminergic induced arrhythmias in failing cardiomyocytes associated with human HRC^{S96A} variant overexpression. *Am J Physiol Heart Circ Physiol*, 2011; 301:H1588-H1595.