

## **CURRICULUM VITAE (update 1/2023)**

**NAME:** Hanming Zhang

**ADDRESS:** Yale University School of Medicine  
Amistad Research Building, Room 320  
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New Haven, CT 06520-8089  
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### **EDUCATION:**

2019 Ph.D., Basic Biomedical Sciences (Cardiovascular Biology),  
University of South Dakota, Vermillion, SD (Mentor: Xuejun  
Wang)  
Thesis title: PDE1 inhibition facilitates proteasomal  
degradation of misfolded proteins and protects against cardiac  
proteinopathy

2012 B.Sc., Biotechnology, Zhejiang Sci-Tech University,  
Hangzhou, Zhejiang, China

### **APPOINTMENTS**

7/2021-present Postdoctoral Fellow, Department of Comparative Medicine,  
Yale University School of Medicine (Mentor: Carlos Fernandez-  
Hernando)  
Focus: Coronavirus infection, Atherosclerosis, lipid metabolism

7/2019-6/2021 Postdoctoral Fellow, Section of Cardiovascular Medicine,  
Yale University School of Medicine (Mentor: Hyung Joon Chun)  
Focus: Pathophysiology of COVID-19 induced coagulopathy

7/2012-7/2013 Research Assistant, Zhejiang Provincial Key Laboratory of Applied  
Enzymology, Yangtze Delta Region Institute of Tsinghua  
University (Mentor: Zong Lin)  
Project: Characterization of human brain type creatine kinase  
dimer and its activity

### **HONOR & AWARDS:**

2018 Gary N. Piquette PhD memorial scholarship, University of  
South Dakota

2017 1<sup>st</sup> place graduate poster presentation, Nebraska Physiological  
Society

2017	2 <sup>nd</sup> place in poster presentation (graduate/post doctorate/staff division), Center for Brain and Behavior Research, University of South Dakota
2017	New Investigator Travel Award, Council on Basic Cardiovascular Sciences, AHA
2016	Best Abstract-based Oral Presentation-Graduate Category, Nebraska Physiological Society
2016	Outstanding Young Investigator Award, The Academy of Cardiovascular Research Excellence
2012	Zhejiang Sci-Tech University's TOP 100 thesis, Zhejiang Sci-Tech University
2010	3 <sup>rd</sup> class scholarship, College of Life Sciences, Zhejiang Sci-Tech University
2009	2 <sup>nd</sup> class scholarship, College of Life Sciences, Zhejiang Sci-Tech University

## **OTHER PROFESSIONAL ROLES**

### Editorial Board Memberships

2020 -present Editorial Board, *Frontiers in Aging*

2022 -present Guest Associate Editor, *Frontiers in Genetics*

### Ad hoc reviewer

*Physiological Reviews*

*JACC: Basic to Translational Science*,

*Frontiers in Physiology*

*AJP Cell Physiology*

*Frontiers in Cardiovascular Medicine*

*Journal of Vascular Research*

*Journal of Applied Physiology*

*Journal of Clinical Medicine*

*AJP Regulatory, Integrative and Comparative Physiology*

## **PUBLICATIONS:**

### ***Original Papers***

1. Singh I, Leitner B, Wang Y, **Zhang H**, Joseph P, Lutchmansingh DD, Gulati M, Possick JD, Damsky W, Hwa J, Heerdt PM, Chun HJ. Proteomic profiling demonstrates inflammatory and endotheliopathy signatures associated with impaired cardiopulmonary exercise hemodynamic

profile in post-acute sequelae of SARS-CoV-2 infection (PASC) syndrome (*Pulmonary Circulation*, under review)

2. Adachi T, **Zhang H**, Kowalski P, Mehrotra D, Clapham KR, EI-Hely O, Park S, Hu J, Kang Y, Hwangbo C, Kojima Y, Lee A, Kim J, Morrison AR, Anderson D, Papangelis I, Chun HJ. Endothelial microRNA-335 promotes a vascular and metabolic inflammatory milieu. (*Nature Communications*, in revision)
3. Ma L, Sahu SK, Cano M, Kuppaswamy V, Bajwa J, McPhatter J, Pine A, Meizlish ML, Goshua G, Chang CH, **Zhang H**, Price C, Bahel P, Rinder H, Lei T, Day A, Reynolds D, Wu X, Schriefer R, Rauseo AM, Goss CW, O'Halloran JA, Presti RM, Kim AH, Gelman AE, Dela Cruz C, Lee AI, Mudd P, Chun HJ, Atkinson JP, Kulkarni HS. Increased complement activation is a distinctive feature of severe SARS-CoV-2 infection. *Science Immunology* 2021 May 13;6(59):eabh2259
4. Meizlish ML, Pine AB, Bishai JD, Goshua G, Nadelmann ER, Simonov M, Chang CH, **Zhang H**, Shallow M, Bahel P, Owusu K, Yamamoto Y, Arora T, Atri DS, Patel A, Gbyli R, Kwan J, Won CH, Dela Cruz C, Price C, Koff J, King BA, Rinder HM, Wilson FP, Hwa J, Halene S, Damsky W, van Dijk D, Lee AI, Chun H. A neutrophil activation signature predicts critical illness and mortality in COVID-19. *Blood Advances*. 2021; 5(5): 11641177
5. Pine AB, Meizlish ML, Goshua G, Chang CH, **Zhang H**, Bishai JD, Bahel P, Patel Amisha, Gbyli R, Kwan J, Price C, Dela Cruz CS, Halene S, Dijk D, Hwa J, Lee AI, Chun HJ. EXPRESS: Circulating Markers of Angiogenesis and Endotheliopathy in COVID-19. *Pulmonary Circulation*, 2020; 10(4) 1-4. DOI: 10.1177/2045894020966547
6. Goshua G, Pine AB, Meizlish ML, Chang CH, **Zhang H**, Bahel P, Baluha A, Bar N, Bona RD, Burns AJ, Dela Cruz CS, Dumont A, Halene S, Hwa J, Koff J, Menninger H, Neparidze N, Price C, Siner JM, Tormey C, Rinder HM, Chun HJ, Lee AI. Endotheliopathy in COVID-19 associated coagulopathy: evidence from a single-centre, cross-sectional study. *Lancet Haematol*. 2020 Aug;7(8):e575-e582.
7. **Zhang H**, Pan B, Wu P, Parajuli N, Rekhter MD, Goldberg AL, Wang X. PDE1 inhibition facilitates proteasomal degradation of misfolded proteins and protects against cardiac proteinopathy. *Science Advances* 2019 May 22;5(5):eaaw5870.
8. Pan B, **Zhang H**, Cui T, Wang X. TFEB activation protects against cardiac proteotoxicity via increasing autophagic flux. *J Mol Cell Cardiol* 2017; 113: 51-62.
9. Su H, Li J, **Zhang H**, Ma W, Wei N, Liu J, Wang X. The COP9 signalosome controls the degradation of cytosolic misfolded proteins and protects against cardiac proteotoxicity. *Circ Res* 2015; 117(11): 956-966.
10. Zhang H, Jiang Y, Chen C, **Zhang H**, Yu W, Zhang Y, Tong F. Expression and Subcellular localization of cyclin H in *Bombyx mori*. *Life Science J* 2013; 10(3)
11. Yu W, Wang M, **Zhang H**, Quan Y, Zhang Y. Expression and functional analysis of storage protein 2 in the silkworm, *Bombyx mori*. *Int J Genomics* 2013; 145450. doi: 10.1155/2013/145450.

12. Cheng, J., S. Pan, Y. Zhong, **H. Zhang**, C. Wang, S. Yu, W. Yu, S. Li. Optimal purification conditions and identification of CTB-A $\beta$ 42 expression in Escherichia Coli. *Chin J Biochem Pharm* 2012; 33(4): 342-345. (in Chinese)

### **Reviews and Commentaries**

1. **Zhang H**, Wang X. Priming the proteasome by protein kinase G: a novel cardioprotective mechanism of sildenafil. *Future Cardiol* 2015; 11(2): 177-89.

### **CURRENT FUNDING:**

“Contribution of endothelial to hematopoietic transition in atherosclerosis”

Principal Investigator: Hanming Zhang

Agency: AHA Postdoctoral Fellowship \$54,382.50/yr

Project Period: 01/01/2022- 12/31/2023

### **PAST FUNDING:**

“PDE1 inhibition improves cardiac protein quality control”

Principal Investigator: Hanming Zhang

Agency: AHA Predoctoral Fellowship

Total cost for project period: \$52,000

Project Period: 01/01/2016- 12/31/2017

### **ABSTRACTS AND CONFERENCE PRESENTATIONS**

1. **Zhang, Hanming**; Yao, Lin; Wang, Rong; Lv, Zhirong; Shen, Dong; Mu, Hang; Lin, Zong; Zhou, Haimeng. Characterization of human brain type creatine kinase dimer and its activity. **The 11th symposium of the Chinese Enzyme Society**, Wuxi, Jiangsu, China. (May 17, 2013)
2. Su, Huabo; Li, Jie; **Zhang, Hanming**; Wei, Ning; Wang, Xuejun. The COP9 signalosome controls the degradation of cytosolic misfolded proteins and protects against cardiac proteotoxicity. **The 36th International Society for Heart Research North American Section Meeting**, Seattle, WA. (June 8, 2015)
3. Terpstra, Erin J; Callegari, Eduardo; Hu, Chengjun; **Zhang, Hanming**; Wang, Xuejun. Proteasome priming by protein kinase G protects against myocardial ischemia-reperfusion injury. **AHA BCVS 2015 Scientific Sessions**, New Orleans, LA. (July 15, 2015)
4. **Zhang, Hanming**; Wang, Xuejun. PDE1 inhibition primes the proteasome. **AHA BCVS 2016 Scientific Sessions: Pathways to Cardiovascular Therapeutics**, Phoenix, AZ. (July 18, 2016)
5. **Zhang, Hanming**; Wang, Xuejun. PDE1 inhibition improves Cardiac Protein Quality Control (selected as oral presentation). **19th Annual Nebraska Physiological Society Meeting**, Omaha, NE. (October 15, 2016)
6. **Zhang, Hanming**; Wang, Xuejun. Inhibition of phosphodiesterase 1 confers striking therapeutic benefit to HFpEF in mice (New investigator travel award). **AHA BCVS 2017 Scientific Sessions**, Portland, OR. (July 12, 2017)

7. Pan, Bo; **Zhang, Hanming**; Cui, Taixing; Wang, Xuejun. TFEB activation protects against cardiac proteotoxicity via increasing autophagic flux. **20th Annual Nebraska Physiological Society Meeting**, Omaha, NE. (October 28, 2017)
8. **Zhang, Hanming**; Rekhter, Mark D; Wang, Xuejun. Inhibition of type 1 phosphodiesterase confers therapeutic benefit to proteinopathy-based HFpEF in mice. **Experimental Biology 2018**, San Diego, CA. (April 23, 2018)
9. **Zhang, Hanming**, Pan, Bo, Parajuli, Nirmal, Rekhter, Mark D., Goldberg, Alfred L., Wang, Xuejun. Dual Activation of PKA and PKG by PDE1 Inhibition Facilitates Proteasomal Degradation of Misfolded Proteins and Protects against Proteinopathy-Based HFpEF (**selected as oral presentation**). **AHA BCVS Scientific Sessions**, Boston, MA. (July 29, 2019)
10. **Zhang, Hanming**, Pan, Bo, Wu, Penglong, Rekhter, Mark D., Goldberg, Alfred L., Wang, Xuejun. Dual Activation of PKA and PKG by PDE1 Inhibition Facilitates Proteasomal Degradation of Misfolded Proteins and Protects Against Proteinopathy-Based HFpEF. **American Heart Association Scientific Sessions: Best of AHA Specialty Conferences: BCVS 2019**, Philadelphia, PA. (November 17, 2019)
11. Goshua, George, Pine, Alexander B., Meizlish, Matthew L., Chang, C. Hong, **Zhang, Hanming**, Bahel, Parveen, Baluha, Audrey, Bar Noffar, Bona, Robert, Burns Adrienne, Cruz, Charles D., Dumont, Anne, Halene, Stephanie, Hwa, John, Menninger, Hope, Neparidze, Natalia, Price, Christina, Rinder, Henry, Siner, Jonathan, Chun, Hyung, Lee, Alfred I. Endotheliopathy is essential in COVID-19 associated coagulopathy. **European Hematology Association 25 Virtual late breaking session**. (June 14, 2020)
12. Wang, Stephen, Pine, Alexander B., Mankbadi, Michael, Chang, C. Hong, Madeeva, Daria, **Zhang, Hanming**, Dajani, Abdel R. B., Crandall, Ian, Sugeng, Lissa, Lee, Alfred I., Chun, Hyung. Pro-thrombotic signature from neutrophil activation and decreased ADAMTS13 to VWF ratio is a key driver of cardiac injury in hospitalized patients with COVID-19. **American College of Cardiology's 70<sup>th</sup> Annual Scientific Session & Expo**. (May 17<sup>th</sup>, 2021)
13. Peters, Dana C., Coman, Daniel, Herman, Peter, Kwan, Jennifer M., **Zhang, Hanming**, Chakraborty, Raja, Espinoza, Jeacy, Chun, Hyung, Park, Saejeong, Baldassarre, Lauren A. Cardiac MR evaluation of a myocarditis mouse model. **2023 ISMRM & ISMRT Annual Meeting & Exhibition**. (June, 2023)