CURRICULUM VITAE

Zhen Wang, Ph.D.

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Education:

Ph.D. - Pharmacology, University of Arkansas for Medical Sciences, Little Rock, AR, 2007-2012. Dissertation Advisor: Philip R. Mayeux, Ph.D.

M.S. - Pharmacology, Tongji Medical College, Huazhong University of Science and Technology, Wuhan, China, 2001-2004. Dissertation Advisor: Lianjun Guo, Xianmin Meng, Ph.D.

B.S. - Medicine, Tongji Medical College, Huazhong University of Science and Technology, Wuhan, China, 1994-1999

Employment:

Instructor: January 2014 – Present, Department of Physiology and Biophysics, University of Mississippi Medical Center, Jackson, MS. Fellowship Advisor: John E. Hall, Ph.D.

Postdoctoral Fellow: June 2012 – Dec 2013, Department of Physiology and Biophysics, University of Mississippi Medical Center, Jackson, MS. Fellowship Advisor: John E. Hall, Ph.D.

Research Assistant: June 2005 - June 2007, Cardiology Division, Department of Internal Medicine, University of Arkansas for Medical Sciences, Little Rock, AR

Graduate Assistant: September 2002 - May 2004, Molecular Medical Center of Cardiovascular Diseases, Fuwai Hospital, Peking Union Medical College, Beijing, China

Research Assistant: March 2001 - October 2001, Wuhan Tallyho Biological Product Co., Ltd, Wuhan, China

Medical Technologist: June 1999 - March 2001, Landing Early Cancer Diagnosis Center, Wuhan, China

Individual Grant Support:

American Heart Association Greater Southeast Affiliate, Postdoctoral Fellowship. “Mechanisms of hypertensive diabetic nephropathy: role of mitochondrial dysfunction and ER stress” 1-1-2014 through 12-31-2015

American Heart Association South Central Affiliate, Predoctoral Fellowship. “Study of the renal peritubular capillary microenvironment during experimental polymicrobial sepsis” 7-1-2010 through 6-30-2012

Honors:

Trustmark Postdoctoral Publication Award, School of Graduate Studies in the Hearth Sciences, 2017

APS Caroline tum Suden/Francis A. Hellebrandt Professional Opportunity Award, Experimental Biology, 2015

Poster Award, Research Day, University of Mississippi Medical Center, 2013

APS Caroline tum Suden/Francis A. Hellebrandt Professional Opportunity Award, Experimental Biology, 2011

Society for Experimental Biology and Medicine (SEBM) Young Investigator Award, Experimental Biology, 2011

UAMS Graduate School travel award for China Heart Congress and International Heart Forum, Beijing 2010

First Place in the junior division of the 12th annual Seager-Braswell graduate student research symposium, 2010

UAMS Graduate School travel award for Experimental Biology 2009

First Place Platform Presentation, South Central Chapter of the Society of Toxicology Annual Meeting, NCTR, 2008

Peer-reviewed Publications:

1. **Zhen Wang**, Jussara M. do Carmo, Nicola Aberdein, Xinchun Zhou, Jan M. Williams, Alexandre A. da Silva, John E. Hall. Synergistic Interaction of Hypertension and Diabetes in Promoting Kidney Injury and the Role of Endoplasmic Reticulum Stress. *Hypertension.* 2017; May;69(5):879-891.
2. Jussara M. do Carmoa, Alexandre A. da Silva, **Zhen Wang**, Taolin Fang, Nicola Aberdein, Cecilia E. Perez de Lara, John E. Hall. Role of the brain melanocortins in blood pressure regulation. *Biochim Biophys Acta*. 2017 Mar 5. pii: S0925-4439(17)30079-0. doi: 10.1016/j.bbadis.2017.03.003.
3. Jussara M. do Carmo, Alexandre A. da Silva, **Zhen Wang**, Taolin Fang, Nicola Aberdein, Cecilia E. P. de Lara Rodriguez, John E. Hall. Obesity-induced hypertension: brain signaling pathways. *Current Hypertension Reports.* 2016; 18: 58. PMID: 27262997

4. Jussara M. do Carmo, Alexandre A. da Silva, **Zhen Wang**, Nathan J. Freeman, Ammar J. Alsheik, Ahmad Adi, John E. Hall. Regulation of Blood Pressure, Appetite, and Glucose by Leptin After Inactivation of Insulin Receptor Substrate 2 Signaling in the Entire Brain or in Proopiomelanocortin Neurons. *Hypertension*. 2016; 67: 378-386. PMID:26628674.
5. John E. Hall, Jussara M. do Carmo, Alexandre A. da Silva, **Zhen Wang** and Michael E. Hall. Obesity-Induced Hypertension: Interaction of Neurohumoral and Renal Mechanisms. *Circulation Research.* 2015; 116:991-1006.
6. **Zhen Wang**, Clark R. Sims, Naeem K. Patil, Neriman Gokden and Philip R. Mayeux. Pharmacological Targeting of Sphingosine-1-Phosphate Receptor 1 Improves the Renal Microcirculation During Sepsis in the Mouse. *J Pharmacol Exp Ther.* 2015 January:352:61–66.
7. Alexandre A. da Silva, Jussara M. do Carmo, **Zhen Wang**, and John E. Hall. The Brain Melanocortin System, Sympathetic Control and Obesity Hypertension. *Physiology.* 2014 29:196-202.
8. Michael E. Hall, Jussara M. do carmo, Alexandre A. da silva, Luis Juncos, **Zhen Wang** and John E. Hall. Obesity, Hypertension and Chronic Kidney Disease. *Int J Nephrol Renovasc Dis.* 2014 Feb:18;7:75-88.
9. Joseph H. Holthoff, **Zhen Wang**, Naeem K. Patil, Neriman Gokden, Philip R. Mayeux. Rolipram improves renal perfusion and function during sepsis in the mouse. *J Pharmacol Exp Ther*. 2013 347:357–364.
10. Jussara M. do carmo, Alexandre A. da silva, John Dubinion, Price O. Sessums, Sabira H. Ebaady, **Zhen Wang**, John E. Hall. Control of metabolic and cardiovascular function by the leptin-brain melanocortin pathway. *IUBMB Life*. 2013 Aug;65(8):692-8.
11. John E. Hall, Jussara M. do Carmo, Alex A. da Silva, **Zhen Wang**, Michael E. Hall. Role of the kidney in hypertension. In: Hypertension. Eds. EL Schiffrin and RM Touyz. Futura Science Group, 2013. pp 2-19. Doi:10.2217/EBO.12.475.
12. **Zhen Wang**, Joseph H. Holthoff, Kathryn A. Seely, Horace J. Spencer, III, Neriman Gokden, Philip R. Mayeux. Development of oxidative stress in the peritubular capillary microenvironment mediates sepsis-induced renal microcirculatory failure and acute kidney injury. *Am J Pathol.* 2012 Feb;180(2):505-516.
13. Joseph H. Holthoff, **Zhen Wang**, Kathryn A. Seely, Neriman Gokden, Philip R. Mayeux. Resveratrol improves renal microcirculation, protects the tubular epithelium and prolongs survival in a mouse model of sepsis-induced acute kidney injury. *Kidney Int*. 2012 Feb;81(4):370-378.
14. **Zhen Wang**, Christan Herzog, Gur P. Kaushal, Neriman Gokden, Philip R. Mayeux. Actinonin, a meprin A inhibitor, protects the renal microcirculation during sepsis. *Shock.* 2011 Feb;35(2):141-147.
15. Kathryn A. Seely, Joseph H. Holthoff, Samuel T. Burns, **Zhen Wang**, Keshari M. Thakali, Neriman Gokden, Sung W. Rhee, and Philip R. Mayeux. Hemodynamic changes in the kidney in a pediatric rat model of sepsis-induced acute kidney injury. *Am J Physiol Renal Physiol.* 2011 Jul;301(1):209-217.

16. **Zhen Wang,** Dongqing Liu, Yin Wang Yin, Shen Qu, Xianmin Meng. Identification of Interaction of Nelin with F-actin and Filamin*. Acta Med Univ Sci Technol Huazhong*, 2007 36(3);281-284.
17. Wei Huang, Yuzhen Yang, **Zhen Wang**, Ling Hang. Screening of Peptide Inhibitors of TACE from a Phage Display Random 15-Peptide Library by Recombinant TACE Ectodomain. *Front Biol China.* 2006 1:56-60.
18. **Zhen Wang**, Dongqing Liu, Yin Wang, Huiqing Cao, Jinfeng Ding, Lianjun Guo, She Qu, Xianmin Meng. Identification Proteins Interacting with Novel Gene Nelin via Yeast Two-Hybrid System. *Journal of Huazhong University of Science and Technology Med. Sci.* 2005 Feb;34(1):1-4.
19. **Zhen Wang**, Xianmin Meng, Huiqing Cao, Dongqing Liu, Yan Feng, Xin You, Yin Wang, Lianjun Guo, Shen Qu. Characteristics of the Binding Features of Nelin with F-actin and Screening Nelin Interactive Proteins. *Chinese Science Bulletin*. 2004 49(23):2487-2490.
20. Yan Feng, Dongqing Liu, **Zhen Wang**, Huiqing Cao, Na Shi, Zhongduan Deng, Jinfeng Ding, Xianmin Meng. Interaction Between the Novel Cardiac-specific Protein Kinase p93 and Peroxiredoxin 3. *Prog. Biochem. Biophys*.2004 31(8):688-692.
21. Xin You, Huiqing Cao, Na Shi Na, **Zhen Wang**, Xiuwen Zhao, Jinfeng Ding, Xianmin Meng. Prokaryotic expression of human cytoskeleton regulation gene Nelin N terminal. *Journal of Medical Science Yanbian University.* 2003 Dec;26(4):235-238.
22. **Zhen Wang**, Yin Wang, Kongli Zhu, Lianjun Guo, Yuzhen Yang. Mechanism of Three Inhibitors of TACE in Blocking the Converting of pro-TNFα. *Journal of Huazhong University of Science and Technology Med. Sci.* 2003 23(2):116-120.
23. Kongli Zhu, Yuzhen Yang, Ling Han, **Zhen Wang**, Tingbo Ding. The study on different acting mechanisms of three types of TACE inhibitors in converting of pro-TNFα into sTNFα. *Chinese Journal of Immunology*. 2003 19(11):752-756.
24. Lingbo Li, Yuzhen Yang, **Zhen Wang**, Feili Gong. Study of the Effects of LPS on the TACE Gene Expression and Its Function. *Journal of Huazhong University of Science and Technology Med. Sci.* 2002 22 (1):5-8.

Abstracts:

1. **Zhen Wang**, Jussara M. do Carmo, Nicola Aberdein, Taolin Fang, John E. Hall. The Role of TRPC6 Channels in Glomerular Capillary Endothelial Cell Injury Induced by Mechanic Stretch and High Glucose. Experimental Biology, 2017
2. **Zhen Wang**, Jussara M. do Carmo, Alexandre A. da Silva, Nicola Aberdein, John E. Hall. Role of Suppressor of Cytokines Signaling 3 (SOCS3) in POMC Neurons in Regulating Metabolic and Cardiovascular Functions in Dietary-Induced Obesity. AHA Council on Hypertension Scientific Sessions, Orlando, 2016
3. **Zhen Wang**, Jussara M. do Carmo, John E. Hall. ER Stress and Mitochondrial ROS Contribute to the Development of Hypertensive-Diabetic Nephropathy. Experimental Biology, 2016
4. **Zhen Wang**, Jussara M. do Carmo, John E. Hall. Role of ER Stress in Development of

Hypertensive-Diabetic Nephropathy. Southeast Regional IDeA Meeting, 2015

5. **Zhen Wang**, Jussara M. do Carmo, Alexandre A. da Silva, John E. Hall. Suppressor of Cytokine Signaling 3 (SOCS3) in POMC Neurons and Its Role in Regulating Blood Pressure, Body Weight and Glucose in Obesity. AHA Council on Hypertension Scientific Sessions 2015
6. **Zhen Wang**, Jussara M. do Carmo, Jan M. Williams, Alexandre A. da Silva, John E. Hall Interaction of Hypertension and Diabetes in Progressive Nephropathy: Role of ER Stress. Experimental Biology, 2015
7. **Zhen Wang**, Jussara M. do Carmo, Alexandre A. da Silva, John E. Hall. Inhibition of endoplasmic reticulum stress attenuates aorta coarctation induced hypertension and kidney injury in diabetic Goto Kakizaki rats. Experimental Biology, 2014
8. Jussara M. do Carmo, Alexandre A. da Silva, **Zhen Wang**, John E. Hall. Role of hindbrain endogenous melanocortin receptor activity in contributing to hypertension in SHR. AHA High Blood Pressure Research 2013 Scientific Sessions
9. **Zhen Wang**, Jussara M. do Carmo, Alexandre A. da Silva, Ralph S. Abraham, John E. Hall. Interaction of hypertension and diabetes in progressive nephropathy, enhanced ER stress and mitophagy in Goto Kakizaki rats. AHA Council on Hypertension Scientific Sessions 2013
10. Alexandre A. da Silva, **Zhen Wang**, John E. Hall, Jussara M. do Carmo. Hypophysectomy attenuates leptin-induced tachycardia without affecting leptin's action on appetite and body weight. Experimental Biology, 2013
11. Joseph H. Holthoff, **Zhen Wang**, Naeem K. Patil, Philip R. Mayeux. Identification and Preclinical Evaluation of New Therapeutic Targets to treat Sepsis-Induced Kidney Injury. UAMS College of Medicine Series - Showcase of Medical Discoveries 2012
12. Philip R. Mayeux and **Zhen Wang**. Pharmacological Targeting of Sphingosine-1-Phosphate Receptor 1 Improves Peritubular Capillary Function During Sepsis in the Mouse. American Society of Nephrology, Kidney Week 2012
13. Philip R. Mayeux and **Zhen Wang**, Joseph H. Holthoff. Delayed Restoration of Renal Blood Flow and Peritubular Capillary Perfusion by Inhibition of Phosphodiesterase 4 Partially Protects Against Sepsis-Induced AKI in Mice. American Society of Nephrology, Kidney Week 2012
14. **Zhen Wang** and Philip R. Mayeux. Sphingosine-1-phosphate receptor 1 agonist SEW2871 decreases sepsis-induced renal microvascular permeability but not peritubular capillary hypoperfusion. Experimental Biology, 2012
15. **Zhen Wang**, Kathryn A. Seely, Philip R. Mayeux. Even delayed targeting of reactive oxygen species/oxidative stress protects the renal microcirculation during sepsis-induced renal injury in mice. Experimental Biology, 2011
16. **Zhen Wang** and Philip R. Mayeux. Hemodynamic and renal microcirculatory dysfunction during sepsis-induced acute kidney injury (AKI) in mice. Experimental Biology, 2010
17. **Zhen Wang**, Christian Herzog, Gur P Kaushal, Philip R. Mayeux. Delayed treatment with Actinonin, a meprin A inhibitor, protects the renal microcirculation and renal function in CLP induced sepsis model. Experimental Biology, 2010

18. **Zhen Wang** and Philip R. Mayeux. Renal microcirculatory dysfunction in sepsis-induced acute kidney injury (AKI) in mice. Experimental Biology, 2009
19. **Zhen Wang**, Christian Herzog, Gur P. Kaushal, and Philip R. Mayeux. Actinonin, a meprin A inhibitor, protects the renal microcirculation during sepsis. Experimental Biology, 2009
20. **Zhen Wang** and Philip R. Mayeux. Use of intravital videomicroscopy (IVVM) to monitor the microcirculation and microenvironment of the kidney during sepsis-induced kidney injury in the mouse. Annual meeting, South Central Chapter of the Society of Toxicology, 2008
21. Sabine Telemaque and **Zhen Wang**, Meei-Yueh Liu et al. NCS-1 modulates expression of calcium handing proteins. Experimental Biology, 2008
22. Sabine Telemaque and **Zhen Wang**. Identification of Target Proteins for Neuronal Calcium Sensor-1 (NCS-1) in the Heart. Circulation, AHA Scientific Session, 2006

Book Chapters:

1. John E. Hall, Jussara M. do Carmo, Alex A. da Silva, ***Zhen Wang***, Michael E. Hall. Role of the kidney in hypertension. In: Hypertension. Eds. EL Schiffrin and RM Touyz. Futura Science Group, 2013. pp 2-19. Doi:10.2217/EBO.12.475.
2. Feng Xianyong, ***Wang Zhen***, Cao Huiqing et al. Chapter 15 in Gene Analysis and Biochip Technique. Hubei Science & Technology Press. Wuhan. 2004. ISBN: 7535229336, P. 193-242.

Academic and Professional Activities:

Teaching Experience:

Teaching Assistant: Demonstrate animal experiment for first year graduate students and answered questions in Experimental Pharmacology and Toxicology, 2009-2011, UAMS

Teaching Assistant: Guided undergraduate students for 8 lectures in the course Physiological Experiment and Methods, 2004, Tongji Medical College, China

Oral Presentation at Scientific Meeting:

“Role of Suppressor of Cytokines Signaling 3 (SOCS3) in POMC Neurons in Regulating Metabolic and Cardiovascular Functions in Dietary-Induced Obesity” AHA Council on Hypertension Scientific Sessions, Orlando, 2016

“Mechanisms of Hypertensive Diabetic Nephropathy: Role of Mitochondrial Dysfunction and ER Stress”, Kidney Week 2014, Philadelphia, PA.2014

“Early hemodynamic changes and renal microcirculatory dysfunction during sepsis-induced acute kidney injury in mice”, China Heart Congress & International Heart Forum, Beijing, China, 2010

“Hemodynamic and Renal Microcirculatory Dysfunction during Sepsis-induced Acute Kidney Injury (AKI) in Mice”, Experimental Biology 2010, Anaheim, 2010

“Use of intravital videomicroscopy (IVVM) to monitor the microcirculation and microenvironment of the kidney during sepsis-induced kidney injury in the mouse.” South Central Chapter of the Society of Toxicology Annual Meeting, NCTR, Jefferson, 2008

Professional Society Memberships:

American Heart Association
Society for Experimental Biology and Medicine
The American Physiological Society

Invited manuscript reviewer/Scientific judge:
Cardiovascular Diabetology
Frontiers in Physiology
Journal of Food and Drug Analysis
J. Environ. Sci. Health, Part C
David S. Bruce Excellence in Undergraduate Research Award judge in Experiment biology meeting 2014