

**CURRICULUM VITAE**

**NAME:** ZHUO, JIA LONG (Joe)  
**SEX:** Male  
**PLACE OF BIRTH:** Guangxi, China  
**NATIONALITY:** Australian & USA citizen  
**MARRIAGE STATUS:** Married with a son and a daughter



**PRESENT PRIMARY ACADEMIC APPOINTMENT:**

Professor  
Director  
Laboratory of Receptor and Signal Transduction  
Department of Pharmacology and Toxicology  
The University of Mississippi Medical Center  
Room G323  
2500 North State Street  
Jackson, MS 39216-4505  
Phone: (601) 815-6765  
Fax: (601) 984-1637  
E-mail: [jzhuo@umc.edu](mailto:jzhuo@umc.edu)

**PRESENT SECONDARY ACADEMIC APPOINTMENT:**

Professor of Medicine  
Division of Nephrology  
Department of Internal Medicine  
The University of Mississippi Medical Center  
2500 North State Street  
Jackson, MS 39216-4505

**PRESENT THIRD ACADEMIC APPOINTMENT:**

Professor  
Cardiovascular and Renal Research Center  
The University of Mississippi Medical Center  
2500 North State Street  
Jackson, MS 39216-4505

**PRESENT FOURTH ACADEMIC APPOINTMENT:**

Professor  
Department of Neurobiology and Anatomical Sciences  
The University of Mississippi Medical Center  
2500 North State Street  
Jackson, MS 39216-4505

**ADJUNCT APPOINTMENT:**

Professor  
Department of Pharmacology  
School of Pharmacy  
The University of Mississippi  
Oxford, MS

**PRESENT UNIVERSITY OF MISSISSIPPI MEDICAL CENTER INSTITUTIONAL COMMITTEE MEMBERSHIPS**

Member, Institutional Animal Care and User Committee (2013 - 2016)

Member, Department of Pharmacology and Toxicology Faculty Tenure and Promotion Committee (2012 - Present)

Director, Graduate Program on Mechanisms of Drug Actions, Department of Pharmacology and Toxicology (2012 - 2015)

Member, Department of Pharmacology and Toxicology Graduate Admissions Committee

Member, Department of Pharmacology and Toxicology Faculty Recruitment Committee

**PREVIOUS FACULTY APPOINTMENTS:**

2004-2010: Senior Staff Investigator (equivalent to the professor rank)  
Director, Laboratory of Receptor and Signal Transduction  
Division of Hypertension and Vascular Research  
Department of Internal Medicine  
Henry Ford Health System  
Detroit, Michigan, USA

**Supervisors:** Oscar A. Carretero, M.D., Jeffrey L. Garvin, Ph.D. (Division Heads)

2004-2010: Associate Professor (Affiliated position)  
Department of Physiology  
Wayne State University School of Medicine  
Detroit, Michigan, USA

**Supervisors:** Joseph Dunbar, Ph.D.; Jian-Ping Jin, M.D., Ph.D. (Department Chairs)

2001-2003: Associate Staff Investigator (equivalent to the associate professor rank)  
Director, Analytical and Morphological Laboratory  
Division of Hypertension and Vascular Research  
Department of Internal Medicine  
Henry Ford Health System  
Detroit, Michigan, USA  
**Supervisor:** Oscar A. Carretero, M.D. (Division Head)

1997 – 2001: Senior Research Officer (equivalent to the senior lecturer rank)  
National Health and Medical Research Council of Australia (NH&MRC)  
Howard Florey Institute of Experimental Physiology and Medicine  
The University of Melbourne  
Melbourne, Victoria, AUSTRALIA  
**Supervisor:** Frederick A.O. Mendelsohn, M.D., Ph.D. (Director of Institute)

1999-2000: Visiting Assistant Professor on academic sabbatical leave  
Department of Physiology  
Tulane University School of Medicine  
New Orleans, LA, USA  
**Supervisor:** L. Gabriel Navar, Ph.D. (Department Chair)

### **POSTDOCTORAL APPOINTMENTS:**

1993-1996: National Health and Medical Research Council of Australia Research Officer (equivalent to the lecturer rank)  
Department of Medicine  
Austin & Repatriation Medical Centre  
The University of Melbourne, Victoria  
AUSTRALIA  
**Mentor:** Frederick A.O. Mendelsohn, M.D., Ph.D.

1992-1993: National Health and Medical Research Council of Australia  
Australian Postdoctoral Fellow  
Department of Medicine  
Austin & Repatriation Medical Centre  
The University of Melbourne, Victoria  
AUSTRALIA  
**Mentor:** Frederick A.O. Mendelsohn, M.D., Ph.D.

1990-1991: National Health and Medical Research Council of Australia  
Postdoctoral Research Fellow  
Department of Physiology  
The University of Melbourne, Victoria  
AUSTRALIA  
**Mentors:** Peter J. Harris, Ph.D. & Sandford L. Skinner, M.D.

**PRE-DOCTORAL APPOINTMENTS:**

- 1985-1989: Associate Lecturer/Demonstrator  
Department of Physiology  
The University of Melbourne  
AUSTRALIA
- Supervisors:** Sandford L. Skinner, M.D., and Trevor Morgan, M.D. (Chairs of Department)
- 1984: Lecturer  
Department of Physiology  
Guangxi Medical University, China
- Supervisor:** Professor Deji Li (Chair of Department)
- 1983: Resident Physician  
Department of Internal Medicine  
First Affiliated Hospital  
Guangxi Medical University, China

**POSTGRADUATE EDUCATION:**

- 1990: Ph.D.  
Department of Physiology  
The University of Melbourne  
Parkville, Victoria 3052  
AUSTRALIA
- Thesis title:** The regulation of proximal tubular reabsorption in the rat kidney
- Supervisor:** Sandford L. Skinner, M.D. and Peter J. Harris, Ph.D.
- 1984-1985: M.Sc. (Preliminary)  
Department of Physiology  
The University of Melbourne  
AUSTRALIA
- Thesis title:** Regulation of glomerulo-tubular balance by angiotensin II and III in the rat kidney
- Supervisor:** Sandford L. Skinner, M.D. and Peter J. Harris, Ph.D.

**UNDERGRADUATE EDUCATION:**

- 1977 - 1983: M.D.  
Guangxi Medical University, Nanning, Guangxi, China

**ACADEMIC RECORDS:**

The top graduate with overall GPAs for 5 years among ~500 medical, dental and public health graduates in 1983.

**MEMBERSHIP OF SCIENTIFIC SOCIETIES:**

- 2014 – Chair, American Physiological Society Physiological Genomics Group, USA
- 2014 – Fellow (FAHA), American Heart Association, USA
- 2013 - Fellow (FASN), American Society of Nephrology, USA
- 2011 - Member, American Society for Pharmacology and Experimental Therapeutics
- 2004 - Member, American Society of Nephrology
- 2004 - Member, American Society of Hypertension
- 2004- Member, the American Association for the Advancement of Science
- 2004 - Professional Member, American Heart Association, USA
- 2002 - Member, American Physiological Society
- 1995 - Member, New York Academy of Sciences, USA
- 1990 - Fellow, High Blood Pressure Research Council of Australia
- 1989 - Member, the Australian and New Zealand Society of Nephrology
- 1985 - Member, the Australian Physiological & Pharmacological Society

**AWARDS:**

- 2017 Overseas Fellow, The Royal Society of Medicine, England
- 2017 Distinguished Service Award, The American Physiological Society Physiological Genomics Group
- 2016 Elected Fellow, Section on Medical Sciences, The American Association for the Advancement of Science
- 2014 Gold Medal Award in Biomedical Research Excellence University of Mississippi Medical Center
- 2014 Distinguished Service Award, The American Physiological Society Physiological Genomics Group
- 2012 Silver Medal Award in Biomedical Research Excellence University of Mississippi Medical Center

- 2011 Bronze Medal Award in Biomedical Research Excellence University of Mississippi Medical Center
- 2010 Robert M. Hearin Foundation Medical Research Scholar Award Mississippi, USA
- 2004 Research Excellence Award, Henry Ford Health System, Detroit, Michigan, USA
- 1997 Young Australian Investigator Award, International Society of Nephrology, Sydney, Australia
- 1994 Young Australian Investigator Award, International Society of Hypertension
- 1993-1996 National Health and Medical Research Council Australian Research Fellowship Award (renamed Peter Doherty Australian Postdoctoral Fellowship Award)
- 1986-89 The University of Melbourne Overseas Postgraduate Research Award (Only one of a very few overseas postgraduate students got the award)
- 1984-1985 Guangxi Zhuangzu Autonomous Region Government Overseas Research Fellowship Award (Selected by Guangxi Government to be sent to overseas for postgraduate research training following rigorous academic exams and selection processes)
- 1983.1 Valedictorian with the highest accumulated GPA, Class of 1977, Guangxi Medical University, Nanning, Guangxi, China
- 1979-1981 Guangxi Medical University Academic Excellence Award (全优生)

**HONORS:**

- 2017 Invited Symposium Speaker, XI International Symposium on Vasoactive Peptides, November 30 - December 2, 2017, Belo Horizonte - MG, Brazil
- 2017 Invited Conference Speaker, 16th European Nephrology Conference, October 02-03, 2017, Barcelona, Spain.
- 2017 Member, The Organizing Committee, 16th European Nephrology Conference, October 02-03, 2017, Barcelona, Spain.
- 2017 Visiting Professor & Invited Seminar Speaker, The Hypertension and Kidney Research Center, Department of Pharmacology and Toxicology, Virginia Commonwealth University, Richmond, Virginia, May 25, 2017.

- 2017 Visiting Professor & Invited Seminar Speaker, Division of Nephrology and Hypertension, University of Utah School of Medicine, Salt Lake City, Utah, May 19, 2017.
- 2017 Conference Chair, the 4<sup>th</sup> American Physiological Society Physiological Genomics Group Annual Research Conference, Chicago, Illinois, April 22-26, 2017.
- 2017 Invited Seminar Speaker, Center of Excellence for Microcirculation Research, Department of Chinese and Western Medicine Research, School of Basic Medical Sciences, Beijing University, April 17, 2017.
- 2017 Invited Symposium Chair and Speaker, the 4th Yangtze River International Congress of Cardiology (YRICC), Chongqing, China, April 13, 2017.
- 2017 Invited Symposium Session Chair, the 4th Yangtze River International Congress of Cardiology (YRICC), Chongqing, China, April 13, 2017.
- 2017 Visiting Professor, Center for Hypertension and Metabolic Diseases, Department of Hypertension and Endocrinology, Chongqing Daping Hospital, Third Military Medical University, Chongqing, China, April 15, 2017.
- 2017 Visiting Professor, Chongqing Research Institute for Cardiovascular Diseases, Department of Cardiology, Chongqing Daping Hospital, Third Military Medical University, Chongqing, China, April 13, 2017.
- 2016 Invited Lecturer, School of Graduate Studies, Guangxi Medical University, Nanning, Guangxi, China, October 20, 2016.
- 2016 Invited Symposium Speaker, 1<sup>th</sup> CHINA-ASEAN International Summit for Emergency Medicine & Guangxi Medical Association 2016 Emergency Medicine Conference, Nanning, China, October 22, 2016.
- 2016 Invited Symposium Speaker, 2016 Congress of Brazilian Society of Hypertension, Sao Paulo, Brazil, July 21, 2016.
- 2016 Who's Who in America, 5-Year Anniversary commemorative plaque for outstanding record of achievements in scientific research
- 2016 Conference Chair, APS/Physiological Genomics Group 2016 Annual Research Conference, San Diego, CA, April 2, 2016.

- 2016 Invited Seminar Speaker, Division of Hypertension and Vascular Research at Wake Forest University School of Medicine, March 8, 2016
- 2016 Selected for inclusion in the 2016 Edition of Marquis Who's Who in America
- 2015 Invited Symposium Speaker, 1<sup>st</sup> International Congress of Chinese Nephrologists – Scientific Congress on Nephropathies, Hong Kong, China, December 11-13, 2015
- 2015 Invited Seminar Speaker, the National Clinical Research Center for Chronic Kidney Diseases, Nanfang Medical University, Guangzhou, China, December 10, 2015
- 2015 Invited Symposium Speaker, 2<sup>nd</sup> Guangzhou International Forum on Hypertension Research, Guangzhou, China, December 7-9, 2015
- 2015 Invited Symposium Speaker, 6<sup>th</sup> World Congress on Mitochondria, Berlin, Germany, October 28-30, 2015
- 2015 Conference Chair, APS/Physiological Genomics Group 2015 Research Conference, Boston, Massachusetts, March 28, 2015.
- 2015 Invited Seminar Speaker, The Kidney and Heart Institute, School of Pharmacy, University of Houston, Houston, TX, January 29, 2015
- 2014 Invited Symposium Speaker, Physiological Genomics Editorial Board Conference, Milwaukee, WI, October 3, 2014
- 2014 Invited Seminar Speaker, Department of Pharmacology & Vascular Biology Center, Georgia Regent University, Augusta, GA, September 19, 2014
- 2014 Invited Symposium Speaker, International Symposium on Renin-Angiotensin System (RAS): Understanding Systemic, Intracellular and Tissue RAS, Sao Paulo, Brazil, August 2014
- 2014 Invited Symposium Speaker, 1<sup>st</sup> Guangzhou International Forum on Hypertension Research, Zhongshan Sun Yat-Sen University School of Medicine, Guangzhou, China. May 2014.
- 2014 Invited Symposium Speaker, School of Pharmaceutical Sciences, Guangxi Medical University, Nanning, China, May 2014.
- 2014 Invited Seminar Speaker, School of Graduate Studies, Guangxi Medical University, Nanning, China, May 2014.
- 2014 Invited Seminar Speaker, Department of Physiology, Tulane University, New Orleans, LA., March 17, 2014.



- 2014 Chair, APS/Physiological Genomics Group 2014 Research Conference, San Diego, California, April 26, 2014.
- 2013 Invited Seminar Speaker, The Department of Physiology at LSU in New Orleans, November 2013.
- 2012 Invited Seminar Speaker, The Department of Physiology & Pharmacology, Cardiovascular Research Center, Temple University School of Medicine, Philadelphia, PA, December 2012.
- 2012 Invited Symposium Speaker, Zhongshan Sun Yat-Sen University School of Medicine, Guangzhou, China. July 2012.
- 2012 Invited Symposium Speaker, The Satellite Symposium on Evolving Concepts of The Renin-Angiotensin System (RAS) to International Society of Hypertension 2012 Meeting, Sydney, Australia, September 26-28, 2012.
- 2012 Symposium Chair & Speaker, Signaling Pathways, Intercellular and Intracellular Communications in Cardiovascular Diseases. International Conference of Cardiology, Guangzhou, China, December 2-4, 2012.
- 2012 Guest Editor on Special Topic: Intracrine Renin-Angiotensin System: A New Paradigm in Cardiovascular and Renal Control  
American Journal of Physiology: Regulatory, Integrative and Comparative Physiology
- 2012 Chair, Trainees Highlights Section in Physiological Genomics, Experimental Biology 2012, San Diego, CA, USA
- 2012 Guest Editor of the Journal of American College of Cardiology (JACC)
- 2012 Selected for inclusion in the 2013 Edition of Marquis Who's Who in America
- 2011 Invited Seminar Speaker, Shanghai Institute of Hypertension, Jiaotong University School of Medicine, Shanghai, China
- 2011 Symposium Chair, Experimental Biology 2011 Physiological Genomics Group Symposium on Intracrine rennin-angiotensin system. Washington D.C., USA.
- 2011 Invited Symposium Speaker, Experimental Biology Epithelial Transport Group Symposium, Washington, D.C., USA.
- 2011 Invited Symposium Speaker, Physiological Genomics Group Symposium on Intracrine rennin-angiotensin system. Washington D.C., USA.
- 2011 Invited Seminar Speaker, Division of Nephrology and School of Graduate Studies, Medical University of South Carolina, Charleston, South Carolina, USA

Host: Associate Professor & Dr. Wayne Fitzgibbon

- 2011 Invited Seminar Speaker, Department of Physiology, Oklahoma University Health Sciences Center, Oklahoma City, Oklahoma, USA
- 2010 Invited Symposium Speaker, Experimental Biology 2010 Symposium on RNAi Interference in Cardiovascular Disease, Anaheim, CA, USA.
- 2010 Invited Seminar Speaker, Department of Pharmacology and Toxicology, University of Mississippi Medical Center, Jackson, Mississippi, USA
- 2010 Invited Symposium Speaker, Gordon Research Conference on Angiotensin, Ventura, California, USA.
- 2010 Selected for inclusion in the 2010 Edition of Marquis Who's Who in America.
- 2007 Invited Symposium Speaker, Keystone Symposium on siRNA and miRNA, Keystone, Colorado, USA.
- 2006 Invited Symposium Speaker, Cell Signaling World 2006, Luxembourg.
- 2005 Member, Manchester Who's Who Registry of Executives and Professionals.
- 2004 Invited Symposium Speaker, FASEB Summer Research Conferences on Renal Microcirculatory and Tubular Dynamics, Pine Mountain, Georgia, USA.
- 2004 Invited Symposium Speaker, Gordon Research Conferences on Angiotensin. Ventura, CA, 2004
- 2001 Invited Seminar Speaker, Department of Anatomy and Cell Biology, Monash University, Victoria, Australia.  
Host: Department Head Professor John Bertram
- 2000 Invited Seminar Speaker, Department of Physiology, Monash University, Victoria, Australia.  
Host: Department Head Professor Warwick Anderson
- 2000 Invited Seminar Speaker, Department of Geriatric Medicine, Osaka University Medical School, Osaka, Japan 2000  
Host: Department Head Professor Ogihara T
- 2000 Invited Symposium Speaker, The 23<sup>rd</sup> Annual Scientific Meeting of Japanese Society of Hypertension, Fukuoka, Japan. 2000  
Host: President & Professor Akira Takeshita
- 2000 Selected for inclusion in the Millennium Edition, Marquis' Who's Who in Medicine and Healthcare, a Publication of Who's Who in America.

- 2000 Invited Seminar Speaker, Division of Hypertension and Vascular Research, Henry Ford Hospital, Detroit, Michigan, USA  
Host: Division Head Professor Oscar A. Carretero
- 1999-2000 Visiting Assisting Professor  
Department of Physiology  
Tulane University Health Sciences Center, New Orleans, USA  
Host: Chair & Dr. L. Gabriel Navar
- 1998 Invited Seminar Speaker, Department of Physiology, Sydney University, Australia, Host: Department Head Professor Dave Davey
- 1998 Selected for inclusion in the 15<sup>th</sup> Edition of Marquis' Who's Who in the World, a Publication of Who's Who in America.
- 1999 Visiting Professor from Australia  
Division of Hypertension  
Department of Medicine, Case Western Reserve University School of Medicine  
Host: Division Head & Dr. Janice Douglas
- 1997 Invited Symposium Speaker, the XIVth International Congress of Nephrology, Sydney, Australia.
- 1996 Invited Seminar Speaker, The Headquarter of Servier Laboratories Pty Ltd, Paris, France,
- 1995 Invited Seminar Speaker, Department of Medicine, University of Virginia School of Medicine. Host: Dean & Dr. Robert M. Carey
- 1995 Visiting Professor, Department of Physiology, Medical College of Wisconsin, Milwaukee, Wisconsin, USA. Host: Chair & Dr. Allan Cowley
- 1995 Invited Symposium Speaker, the XIIIth International Congress of Nephrology, Madrid, Spain.
- 1995 Honorary Professor, Guangxi Medical University, Nanning, China.
- 1994 Invited Lecturer, the 60th Anniversary of Guangxi Medical University, Nanning, China. Host: President and Professor Nai-ping Wang

### **ACTIVE RESEARCH GRANT FUNDING IN USA**

- 2017 - 2022 **National Institutes of Diabetes and Digestive and Kidney Diseases (\$2,849,620 total costs for 5 years) (2RO1DK067299-10A1)**  
Principal Investigator: Jia L. Zhuo

Project title: *Role of mitochondrial angiotensin II in the proximal tubule of the kidney (3%)*

- 2017 - 2022      **National Institutes of Diabetes and Digestive and Kidney Diseases (\$1,960,000 total costs for 5 years) (2R01DK102429-03A1)**  
Principal Investigator: Jia L. Zhuo  
Project Title: *Novel roles of proximal tubule NHE3 in angiotensin II-induced hypertension (3%)*
- 2016 – 2018      **National Heart, Lung, and Blood Institute (\$385,000 for 2 years) (1R56HL130988-01)**  
Principal Investigator: Jia L. Zhuo  
Project Title: *Proximal tubule NHE3, pressure natriuresis, and hypertension (20%)*

### **RECENTLY COMPLETED RESEARCH GRANTS IN USA**

- 2014 – 2017      **National Institutes of Diabetes and Digestive and Kidney Diseases (\$762,500 total costs for 3 years) (R01DK102429-01)**  
Principal Investigator: Jia L. Zhuo  
Project Title: *Novel roles of proximal tubule NHE3 in angiotensin II-induced hypertension (16%)*
- 2010 - 2016      **National Institutes of Diabetes and Digestive and Kidney Diseases (\$1,655,552 total costs for 5 years) (2R01DK067299-06A2)**  
Principal Investigator: Jia L. Zhuo  
Project title: *Role of intracrine angiotensin II in proximal tubule cells (10%)*
- 2009-2010      **National Institutes of Health/NIDDK R56 project grant (\$352,205 total costs) (2R56DK067299-06)**  
Principal Investigator: Jia L. Zhuo  
Project title: *Novel role of intracrine angiotensin II in proximal tubule cells (20%)*
- 2009-2010      **American Society of Nephrology M. James Scherbenske Grant (\$100,000 total costs)**  
Principal Investigator: Jia L. Zhuo  
Project Title: *Role of intracrine angiotensin II in the kidney (1%)*
- 2004-2009      **National Institutes of Health/NIDDK RO1 project grant (\$1,687,500 total costs) (5R01DK067299)**  
Principal Investigator: Jia L. Zhuo  
Project title: *Role of intracrine angiotensin II in kidney cells (10%)*
- 2004-2009      **Henry Ford Health System Institutional A Grant (~\$550,000 total costs)**  
Principal Investigator: Jia L. Zhuo  
Project title: *Intracellular signaling of intracrine angiotensin II in cardiovascular and renal cells*

- 2002-2006      **National Heart, Lung and Blood Institute Program Project Grant to Dr. Oscar A. Carretero (PI: Carretero) (\$1,803,980 total cost for 5 years)**  
Project Investigator: Jia L. Zhuo (Analytical and Morphological Core Lab Director)  
Program Director: Oscar A. Carretero (1%)  
Project Title: Analytical and Morphological Core Laboratory
- 2003-2005      **American Heart Association Greater Midwest Affiliate Grant-in-Aid (\$110,000 total costs)**  
Investigator: Jia L. Zhuo  
Project title: *Role of intracellular angiotensin II and its receptors in kidney cells (13%)*
- 2002-2003      **National Kidney Foundation of Michigan, USA, Grant-in-Aid (\$25,000 total costs)**  
Investigator: Jia L. Zhuo  
Project title: *The role of intracellular angiotensin II in kidney cells*

**EXTRAMURAL RESEARCH GRANTS HELD IN AUSTRALIA:**

- 2001 - 2003      **National Health and Medical Research Council of Australia (AUS\$860,000 total costs)** (*declined due to moving to the USA to take up a new position at Henry Ford Hospital, Detroit, Michigan, USA*)  
Project Investigator: Jialong Zhuo  
Project title: Novel roles of paracrine and intracrine angiotensins in the kidney
- 1997-2001      **National Health and Medical Research Council of Australia Institutional Block Grant to Howard Florey Institute of Experimental Physiology and Medicine (~AUS\$830,000 total costs for each project investigator for 5 years)**  
Project Investigator: Jialong Zhuo  
Project title: *Receptors and roles of vasoactive peptides in the renal interstitium*
- 1998-1999      **National Heart Foundation of Australia Grant-in-Aid (AUS\$96,000 total costs)**  
Investigators: Jialong Zhuo, Paul Fennessy & Frederick Mendelsohn  
Project title: *Mechanisms of blood vessels disease development*
- 1993-1996      **National Health and Medical Research Council of Australia Australian Postdoctoral Fellowship Award (now renamed Peter Doherty Australian Postdoctoral Fellowship after 1996 Nobel Prize Winner in Physiology and Medicine Dr. Peter Doherty) (AUS\$206,910 total costs) (total 6 awardees in 1993 in Australia)**  
Investigator: Jialong Zhuo  
Project title: *The receptors for Ang II, ANP and ET in the renal medulla: cellular localization, properties & function*

- 1996                    **Australian Kidney Foundation Grant-in-Aid (\$10,000 total costs)**  
Investigator: Jialong Zhuo  
Project title: *Cellular localization and function of bradykinin B<sub>2</sub> receptors in the kidney*
- 1996                    **Austin Hospital Medical Research Foundation Grant-in-Aid (AUS\$15,000 total costs)**  
Investigator: Jialong Zhuo  
Project title: *The physiological role of Ang II receptors in the renal medulla*
- 1994-1995            **Servier Laboratories Research Grant-in-Aid (AUS\$100,000 total costs)**  
Investigators: Jialong Zhuo and Frederick Mendelsohn  
Project title: *Evaluation of angiotensin converting enzyme inhibition in human vascular endothelium and adventitia*
- 1995                    **Austin Hospital Medical Research Foundation Grant-in-Aid (AUS\$15,000 total costs)**  
Investigator: Jialong Zhuo  
Project title: *The physiological role of Ang II receptors in the renal medulla of the rat*
- 1994-1995            **Servier Laboratories Research Grant-in-Aid (AUS\$65,000 total costs)**  
Investigators: Jialong Zhuo & Frederick Mendelsohn  
Project title: *Evaluation of angiotensin converting enzyme inhibition in rabbit vascular endothelium and adventitia*
- 1994                    **Austin Hospital Medical Research Foundation Grant-in-Aid (\$AUS10,000)**  
Investigator: Jialong Zhuo  
Project title: *Ang II, ANP, and ET receptors and their subtypes in the developing rat kidney*
- 1993-1995            **National Heart Foundation of Australia Grant-in-Aid (AU\$90,000 total costs)**  
Investigators: Jialong Zhuo & Frederick Mendelsohn  
Project title: *Angiotensin II receptor subtypes and their antagonists*
- 1992 – 1994           **National Health and Medical Research Council, Australia (AUS\$140,000 total costs)**  
Investigators: Peter Harris, J. Zhuo & Sandy Skinner  
Project Title: *Role of intrarenal angiotensins*
- 1992                    **Australian Kidney Foundation Grant-in-Aid (AUS\$6,500 total costs)**  
Investigators: Jialong Zhuo & Frederick Mendelsohn  
Project title: *High resolution localization of receptors for Angiotensin II, atrial natriuretic peptide and endothelin in rat renal medulla*

**REGULAR REVIEWERS FOR INTERNATIONAL REFERRED JOURNALS (~51 total):**

Acta Physiologica Scandinavica  
Advances in Chronic Kidney Disease  
American Journal of Hypertension  
American Journal of Physiology: Cell Physiology  
American Journal of Physiology: Heart and Circ Physiology  
American Journal of Physiology: Regulatory, Integrative and Comparative Physiology  
American Journal of Physiology: Renal Physiology  
Biochemical Pharmacology  
Biochimica et Biophysica Acta: Molecular Cell Research  
BMC Medicine  
British Journal of Pharmacology  
Circulation  
Circulation Research  
Clinical and Experimental Pharmacology and Physiology  
Clinical Science  
Current Medicinal Chemistry  
Drug Development Research  
European Journal of Pharmacology  
European Journal of Physiology  
Evidence Based Complementary and Alternative Medicine  
Experimental Physiology  
Expert Review of Cardiovascular Therapy  
FASEB Journal  
Genetics Research International  
Hypertension  
Hypertension Research  
International Journal of Biological Sciences  
International Journal of Medical Sciences  
International Journal of Nephrology and Renovascular Disease  
International Journal of Physiology, Pathophysiology and Pharmacology  
Journal of American College of Cardiology (JACC)  
Journal of Applied Physiology  
Journal of Hypertension  
Journal of Immunology Research  
Journal of Pharmacy and Pharmacology  
Journal of Physiology  
Journal of Signal Transduction  
Journal of the Renin-Angiotensin-Aldosterone System (JRAAS)  
Kidney International  
Molecular and Cellular Biochemistry  
Neuropeptides  
Oncotarget  
Peptides  
Pflügers Archiv - European Journal of Physiology  
Pharmacological Research  
Physiological Genomics  
PLoS ONE

PNAS  
Process Biochemistry  
Regulatory Peptides  
Transgenic Research  
Theranostics  
Yonsei Medical Journal

**AD HOC REVIEWERS FOR RESEARCH GRANTS:**

National Institute of Health/NHLBI  
National Institute of Health/NCMHD  
National Institute of Health/NIDDK  
National Institute of General Medical Sciences (NIGMS)  
American Heart Association  
National Health and Medical Research Council of Australia  
National Heart Foundation of Australia  
Australian Kidney Foundation  
Chinese Ministry of Education Chang Jiang Scholar Awards  
Czech Science Foundation  
Diabetes Australia  
Danish Council for Independent Research  
Wellcome Trust, UK  
Swiss National Science Foundation

**NIH AND AHA STUDY SECTION MEMBERSHIPS SINCE 2008**

Permanent Member, NIH/NHLBI / Center For Scientific Review (CSR) Hypertension and Microcirculation Study Section, October 2017, Washington DC.

Member, NIH/NHLBI/CSR Special Emphasis Panel/Scientific Review Group 2017/10 ZRG1 HM-A (07), October 2017, Washington DC.

Permanent Member, NIH/NHLBI / Center For Scientific Review (CSR) Hypertension and Microcirculation Study Section, June 2017, Washington DC.

Member, NIH/NHLBI/CSR Special Emphasis Panel/Scientific Review Group 2017/10 ZRG1 HM-A (07), June 2017, Washington DC.

Permanent Member, NIH/NHLBI / Center For Scientific Review (CSR) Hypertension and Microcirculation Study Section, 2016, Washington DC.

Member, NIH/NHLBI/CSR Special Emphasis Panel/Scientific Review Group 2017/01 ZRG1 HM-A (02) M, 2016, Washington DC.

Regular Member, American Heart Association Vascular Endothelial Biology and Function Study Section (March 2016)

Permanent Member, NIH/NHLBI / Center For Scientific Review (CSR) Hypertension and Microcirculation Study Section, September 15-16, 2015, Washington DC.



Member, NIH/NHLBI/CSR Special Emphasis Panel/Scientific Review Group 2015/ZRG1 HM-J 02 M, September 16, 2015, Washington DC.

NIH/NHLBI / Center For Scientific Review (CSR) Hypertension and Microcirculation Study Section, June 15-16, 2015, Washington DC.

Member, NIH/NHLBI/CSR Special Emphasis Panel/Scientific Review Group 2015/ZRG1 HM-J 02 M, February 6, 2015, San Antonio, TX

NIH/NHLBI / Center For Scientific Review (CSR) Hypertension and Microcirculation Study Section, February 5-6, 2015 Meeting, San Antonio, TX

Member, NIH/NHLBI / Center For Scientific Review (CSR) Hypertension and Microcirculation Study Section, October 2014 Meeting, Washington DC

Member, NIH/NHLBI/CSR Special Emphasis Panel/Scientific Review Group 2015/01 ZRG1 HM-A (02) M meeting, October 2014 Meeting, Washington DC

Ad Hoc Member, Chinese Ministry of Education Chang Jiang Scholar Awards Review Panel, August 2014 Meeting

Member, NIH/NHLBI / Center For Scientific Review (CSR) Hypertension and Microcirculation Study Section, June 2014 Meeting, Washington DC

Member, NIH/NHLBI/CSR Special Emphasis Panel/Scientific Review Group 2014/ZRG1 HM-J 02 M, Member Conflict: Hypertension and Microcirculation, June 2014 Meeting, Washington DC

Member, American Heart Association Vascular Endothelial Biology and Function Study Section (2014)

Ad Hoc Member, NIH/NHLBI/CSR Vascular and Hematology IRG, Special Emphasis Panel (SEP), ZRG1HM-B(02)S (2013), Washington DC

Member, NIH/NHLBI / Center For Scientific Review (CSR) Hypertension and Microcirculation Study Section (2013), Washington DC

Ad Hoc Member, National Health and Medical Research Council of Australia Cardiorenal Study Section, Australian Federal Government (2013)

Ad Hoc Member, Chinese Ministry of Education Chang Jiang Scholar Awards Review Panel (2013)

Member, American Heart Association Vascular Endothelial Biology and Function Study Section (2013)

Ad Hoc Member, NIH/NHLBI/CSR Vascular Cell and Molecular Biology Study Section (VCMB) Special Emphasis Panel (SEP, 2013/05 ZRG1 VH-B02 M), Washington DC

Charter Member, NIH/NHLBI / Center For Scientific Review (CSR) Hypertension and Microcirculation Study Section (2012-2018), Washington DC

Member, NIH/NIMHD Research Program (RO1) Study Section ZMD1 MLS (01) (2012)

Member, NIH/NHLBI / Center For Scientific Review (CSR), Special Emphasis Panel/Scientific Review Group 2012/10 ZRG1 VH-D (90) S: Vascular and Hematology

Ad Hoc Member, National Health and Medical Research Council of Australia Cardiorenal Study Section, Australian Federal Government (2012)

Member, American Heart Association Vascular Endothelial Biology and Function Study Section (2012)

Member, NIH/NHLBI Special Emphasis Panel/Scientific Review Group 2012/01 ZRG1 VH-D (90) (2011): Vascular and Hematology

Member, NIH/NIMHD's Exploratory Centers of Excellence (P20) Grant Review Study Section (2011)

Member, American Heart Association Vascular Endothelial Biology and Function Study Section (2011)

Member, NIH/NHLBI-Vascular Cell and Molecular Biology Study Section (VCMB) Special Emphasis Panel (SEP, ZRG1VH-B02M) (2011)

Member, NIH/NHLBI Vascular and Hematology Integrated Review Group (2011)

Temporary Member, NIH/NHLBI / Center For Scientific Review (CSR) Hypertension and Microcirculation Study Section (2011)

Member, NIH/NHLBI Vascular and Hematology Integrated Review Group (2010)

Member, NIH/NCMHD-RFA-MD-09-004 Review Panels (2009)

Temporary Member, NIH/NHLBI / Center For Scientific Review (CSR) Hypertension and Microcirculation Study Section (2010)

Temporary Member, NIH/NHLBI/Challenge Grant Applications by a Special Emphasis Panel, ZRG1 VH-D (58) R (2009)

Temporary Member, NIH/NHLBI / Center For Scientific Review (CSR) Hypertension and Microcirculation Study Section (2008)

Temporary Member, NIH/NHLBI / Center For Scientific Review (CSR) Hypertension and Microcirculation Study Section (2009)

Member, NIH/NHLBI/CSR Special Review Panel on Circulation Regulation and Pathophysiology (ZRG1-CVS-F-90S) (2008)

**EDITORIAL BOARD OR NATIONAL COMMITTEES**

Member, Editorial Board of BMC Medicine (2015-2018)

Member, Editorial Board of Physiological genomics, the American Physiological Society (2012-2015).

Member, Epithelial Transport Group Steering Committee, American Physiological Society (2013-2015)

Abstract Grader on G Protein-Coupled Receptor Pharmacology, American Heart Association Scientific Sessions 2015

Member, Editorial Board of Clinical Immunology, Endocrine & Metabolic Drugs (2012-2014)

Abstract Grader on G Protein-Coupled Receptor Pharmacology, American Heart Association Scientific Sessions 2014

Abstract Grader on G Protein-Coupled Receptor Pharmacology, American Heart Association Scientific Sessions 2013

Guest Editor on Special Topic: Intracrine Renin-Angiotensin System: A New Paradigm in Cardiovascular and Renal Control, 2012  
American Journal of Physiology: Regulatory, Integrative and Comparative Physiology

Guest Editor on Neuropeptide Y and Cardiovascular Regulation, Journal of American College of Cardiology 2012

General Secretary, American Physiological Society Physiological Genomics Steering Committee (2012-2014)

Member, Hypertension Advisory Group, American Society of Nephrology (2011-2013)

Member, Basic Science Committee, American Society of Nephrology (2010-2012)

Member, American Physiological Society Physiological Genomics Steering Committee (2008-2012)

Member, the Editorial Board of International Journal of Physiology, Pathophysiology and Pharmacology (2010-2013)

Reviewing Editor, the Editorial Board of Journal of Signal Transduction (2010-2013)

Reviewing Editor, the Editorial Board of Genetics Research International (2010-2013)

Member, Editorial Board of Clinical Immunology, Endocrine & Metabolic Drugs (2012-2014)

Abstract Grader on G Protein-Coupled Receptor Pharmacology, American Heart Association Scientific Sessions 2012

Abstract Grader, American Society of Nephrology Renal Week 2011

Abstract Grader, American Society of Nephrology Renal Week 2010

Abstract Grader on G Protein-Coupled Receptor Pharmacology, American Heart Association Scientific Sessions 2009

Abstract Grader on G Protein-Coupled Receptor Pharmacology, American Heart Association Scientific Sessions 2008

Member, the Editorial Board of Journal of Hypertension, the official journal of International Society of Hypertension and European Society of Hypertension (2004-2007)

### **MAJOR INVITED INTERNATIONAL AND NATIONAL PRESENTATIONS:**

1. **Zhuo JL:** Localisation and functional properties of angiotensin II receptors in the kidney. *Invited Lecturer, 60th Anniversary of Guangxi Medical University, Nanning, China, November 1994.* (Invitation by President and Professor Nai-ping Wang)
2. **Zhuo JL, Alcorn D, Chai SY, Song K, Mendelsohn FAO:** The renal, vascular and brain renin-angiotensin system in blood pressure control. *Invited Symposium Speaker, By XIIIth International Congress of Nephrology, Madrid, Spain. July 1995*
3. **Zhuo JL:** Angiotensin II receptors in renal medulla: cellular localisation and regulation. *Invited Symposium Speaker, Department of Physiology, University of Adelaide. March 1996.* (Invited by Department Head Professor C McMillan)
4. **Zhuo JL:** Angiotensin II receptors in the renal medulla: From cellular distribution to function. *Invited departmental seminar speaker, Department of Physiology and Biophysics, Tulane University Medical Center, New Orleans, USA. May 1996* (Invited by Department Head Dr. L. Gabriel Navar)
5. **Zhuo JL:** Perindopril acutely and chronically inhibits angiotensin-converting enzyme in the endothelium and adventitia of human and rabbit blood vessels. *Invited Seminar Speaker, By The Headquarter of Servier Laboratories Pty Ltd, Paris, France, July 1996*
6. **Zhuo JL, Maric C, Dean R, Aldred GP, Eitle E, Antoine A, Harris PJ, Alcorn D, Mendelsohn FAO:** Cellular localisation of vasoactive peptide receptors in the kidney: Interactions in the renomedullary interstitial cells (RMICs). *Invited Symposium Speaker, XIVth International Congress of Nephrology, Sydney, Australia. May 1997.*
7. **Zhuo JL:** Vasoactive peptide receptors in the renal medulla: Autoradiographic mapping and functional studies. *Invited departmental seminar speaker, Department of Medicine, University of Virginia Medical School, USA, September 1998* (By Department Head Dr. Robert Carey)
8. **Zhuo JL:** Localization and function of angiotensin II receptors in renomedullary interstitial cells. *Invited departmental seminar speaker, Hypertension Division, Department of Medicine, Case Western Reserve University Medical School, Cleveland, Ohio, USA, September 1998.* (By Division Head Dr. Janice G. Douglas)
9. **Zhuo JL:** Localization and interaction of vasoactive peptide receptors in the renal medulla. *Invited departmental seminar speaker, Department of Physiology, Sydney University, Australia, October 1998.* (By Department Head Professor Dave Davey)

10. **Zhuo JL:** Renomedullary interstitial cells: a target for paracrine actions of vasoactive peptide in the renal medulla. *Invited departmental seminar speaker, Department of Physiology, Tulane University School of Medicine, New Orleans, USA (2000)* (By Associate Professor Edward Inscho)
11. **Zhuo JL:** Flow cytometric and molecular analysis of renal mechanisms of angiotensin II-dependent hypertension in rat. *Invited departmental seminar speaker, Division of Hypertension and Nephrology, Department of Medicine, Tulane University School of Medicine, New Orleans, USA (2000)* (By Assistant Professor John Imig)
12. **Zhuo JL:** AT<sub>1A</sub> receptor-mediated intracellular trafficking of Ang II through renal endosomes in hypertension. *Invited departmental seminar speaker, Department of Physiology, Monash University, Victoria, Australia 2000* (By Department Head Professor Warwick Anderson)
13. **Zhuo JL:** Mapping the renin-angiotensin system in cardiovascular and renal systems in health and disease. *Invited departmental seminar speaker, Division of Hypertension and Vascular Research, Henry Ford Hospital, Detroit, Michigan, USA 2000* (by Division Head Professor Oscar A. Carretero)
14. **Zhuo JL.** Intracellular Ang II and AT<sub>1A</sub> receptor trafficking in rat renal cortical endosomes during Ang II-induced hypertension. *Invited International Sessional Speaker, The 23<sup>rd</sup> Annual Scientific Meeting of Japanese Society of Hypertension, Fukuoka, Japan. 2000* (By President & Professor Akira Takeshita)
15. **Zhuo JL.** Localization and function of vasoactive peptide receptors in renomedullary interstitial cells. *Invited departmental lecture, Department of Geriatric Medicine, Osaka University Medical School, Osaka, Japan 2000* (By Department Head Professor Ogihara T).
16. **Zhuo JL.** Localization and roles of vasoactive peptide receptors in renomedullary interstitial cells of the kidney. *Invited departmental seminar speaker, Department of Anatomy and Cell Biology, Monash University, Victoria, Australia, 2001* (By Department Head Professor John Bertram)
17. **Zhuo JL.** Role of intracellular angiotensin II in proximal tubule cells. *Invited Speaker, Gordon Research Conferences on Angiotensin. Ventura, CA, 2004.*
18. **Zhuo JL.** Intracellular trafficking of internalized angiotensin II in kidney cells. *Invited departmental seminar speaker, Department of Physiology, Wayne State University School of Medicine. Detroit, MI 2004*
19. **Zhuo JL.** Role of intracellular angiotensin II in proximal tubule cells. *Invited Speaker, FASEB Summer Research Conferences on Renal Microcirculatory and Tubular Dynamics: Molecules to Man. Pine Mountain, GA. 2004.*
20. **Zhuo JL.** Cross-talk between angiotensin II and glucagon receptor signaling in rat glomerular mesangial cells. *Invited Speaker, Cell Signaling World 2006, Luxembourg, January 2006.*
21. **Zhuo JL.** Selective knockdown of AT<sub>1a</sub> receptors inhibits angiotensin II uptake and NHE-3 expression in proximal tubule cells. *Invited Speaker, Keystone Symposium on siRNA and miRNA, Keystone, CO., January 2007.*
22. **Zhuo JL.** Roles of intracellular angiotensin II in proximal tubules of the kidney. *Invited departmental seminar speaker, Division of Nephrology and Hypertension, Henry Ford Hospital, Detroit, MI. September, 2007.*
23. **Zhuo JL.** Intracrine angiotensin II research update with focus on proximal tubules of the kidney. *Invited departmental lecturer, Department of Physiology, Tulane University School of Medicine, New Orleans, LA., March 2008.*

24. **Zhuo JL.** Mechanisms and roles of AT<sub>1</sub> receptor-mediated angiotensin II uptake in proximal tubules of the kidney. *Invited departmental lecturer, Department of Physiology, Wayne State University School of Medicine, Detroit, MI, November 19, 2009.*
25. **Zhuo JL.** Proximal tubule-specific adenoviral transfer of an intracellular angiotensin II fusion protein elevates blood pressure in rats via AT<sub>1a</sub> receptors. *Invited Speaker, Gordon Conference on Angiotensin, Ventura, CA. February 21-26, 2010.*
26. **Zhuo JL.** Cell-specific targeting angiotensin II receptors and signaling mechanisms by RNA interference in the kidney. *Invited Speaker, Experimental Biology 2010 Symposium on RNAi Interference in Cardiovascular Disease, Anaheim, CA, April 26, 2010.*
27. **Zhuo JL.** Novel roles of intracrine or intracellular angiotensin II and signaling mechanisms in the kidney. *Invited departmental lecturer, Department of Pharmacology & Toxicology, the University of Mississippi Medical Center, Jackson, MS. May 3, 2010.*
28. **Zhuo JL.** Regulation of blood pressure by proximal tubule angiotensin II and its receptor signalling. *Invited departmental seminar speaker, Department of Pharmacology & Toxicology, the University of Mississippi Medical Center, Jackson, MS. November 1, 2010.*
29. **Zhuo JL.** Intracrine renin-angiotensin system: a new paradigm in cardiovascular and renal control. *Invited Lecturer, Molecular & Cellular Biology and Pathobiology External Seminar Series, School of Graduate Studies, Medical University of South Carolina, Charleston, SC., February 24, 2011.*
30. **Zhuo JL.** Intrarenal transfer of an intracellular fluorescent fusion of angiotensin II protein selectively in proximal tubules increases blood pressure in rats and mice. *Invited Seminar Speaker, Division of Nephrology, Department of Internal Medicine, Medical University of South Carolina, SC., February 25, 2011.*
31. **Zhuo JL.** Novel roles of intracellular angiotensin II in proximal tubular regulation. *Invited Speaker, Experimental Biology Epithelial Transport Group Symposium, Washington, D.C., April 9-13, 2011.*
32. **Zhuo JL.** Experimental Biology 2011 Physiological Genomics Group Symposium on Intracrine rennin-angiotensin system. *Symposium Chair, Washington D.C., April 9-13, 2011.*
33. **Zhuo JL.** Intracellular angiotensin II regulates proximal tubule sodium reabsorption and blood pressure in rodent models. *Invited Symposium Speaker, Experimental Biology 2011 Symposium on intracrine rennin-angiotensin system in cardiovascular and renal control. Washington D.C., April 9-13, 2011.*
34. **Zhuo JL.** Intracrine/intracellular angiotensin II: a new paradigm in cardiovascular and renal regulation. *Invited seminar presentation, Department of Biochemistry, The University of Mississippi Medical Center, Jackson, Mississippi. June 16, 2011.*
35. **Zhuo JL.** Intracrine renin-angiotensin system: a new paradigm in kidney and blood pressure regulation. *Invited seminar presentation, Department of Physiology, University of Oklahoma Health Sciences Center. July 18, 2011.*
36. **Zhuo JL.** Novel roles of intracellular angiotensin II and signaling: the frontier of the renin-angiotensin system research. *Invited Lecturer, Shanghai Institute of Hypertension, Shanghai Jiaotong University School of Medicine, Shanghai, China, December 2, 2011.*
37. **Zhuo JL.** Caveolin 1 knockout attenuates blood pressure and renal responses in angiotensin-induced hypertensive mice partly by inhibiting AT<sub>1a</sub> receptor-mediated uptake of angiotensin II in the kidney. *Invited Discussant, Gordon Conference on Angiotensin, Ventura, CA. February 26-March 2, 2012.*

38. **Zhuo JL.** Evolving concepts of the renin-angiotensin system: from endocrine, paracrine, autocrine, to intracrine/intracellular angiotensin peptide. Invited speaker at Zhongshan University School of Medicine (Sun Yat-Sen), Guangzhou, China, August 31, 2012.
39. **Zhuo JL.** Intracrine renin-angiotensin system: a new paradigm in renal and blood pressure regulation. Satellite Symposium on Evolving Concepts of the Renin-Angiotensin System at 2012 International Society of Hypertension Meeting, Sydney, Australia, September 26-28, 2012,
40. **Zhuo JL.** Evidence for a functional intracellular angiotensin system in the proximal tubule of the kidney. Department of Pharmacology & Toxicology, University of Mississippi Medical Center, Jackson, Mississippi, USA. November 26, 2012.
41. **Zhuo JL.** New insights into the novel signaling mechanisms for intracellular angiotensin II in cardiovascular and blood pressure control. BIT's 4th International Conference of Cardiology, Guangzhou, China. December 2012.
42. **Zhuo JL.** Poster Professor and Session Chair: Predictors of Cardiorenal Risk. AHA Scientific Sessions 2013 in Dallas, TX.
43. **Zhuo JL.** Nonclassical renin-angiotensin system. Invited Lecturer, Department of Physiology, School of Graduate Studies, Louisiana State University Health Sciences Center at New Orleans, November 4, 2013.
44. **Zhuo JL.** Novel roles and perspectives of paracrine and intracrine angiotensin II in the proximal tubule of the kidney. Invited Seminar Speaker, Department of Physiology, Louisiana State University Health Sciences Center at New Orleans, November 4, 2013.
45. **Zhuo JL.** Current updates on paracrine and intracrine renin-angiotensin system in the kidney. Invited Seminar Speaker, Department of Pharmacology, School of Pharmacy, University of Mississippi, Oxford, MS. November 14, 2013.
46. **Zhuo JL.** Current insights and new perspectives on the roles of paracrine and intracrine angiotensin II in the proximal tubule of the kidney. Invited seminar speaker, Department of Physiology at Tulane University School of Medicine, New Orleans, March 17, 2014.
47. **Zhuo JL.** Novel roles of proximal tubular Na<sup>+</sup>/H<sup>+</sup> exchanger 3 (NHE3) in pressure natriuresis and angiotensin II-induced hypertension. Invited Seminar Speaker, Tulane Hypertension & Renal Center of Excellence, Tulane University Health Sciences Center, New Orleans, March 17, 2014.
48. **Zhuo JL.** Strategies and planning for graduate school admission in Australia and USA. Invited Lecturer, School of Graduate Studies, Guangxi Medical University, Nanning, Guangxi, China. May 5, 2014.
49. **Zhuo JL.** The roles of paracrine and intracrine angiotensin II in the proximal tubule of the kidney: current insights and new perspectives. Invited Lecturer, School of Pharmaceutical Sciences, Guangxi Medical University, Nanning, Guangxi, China. May 5, 2014.
50. **Zhuo JL.** Current insights and new perspectives on the roles of local paracrine and intracrine renin-angiotensin system in the kidney. Invited Symposium Speaker, 1<sup>st</sup> Guangzhou International Forum on Frontiers of Hypertension Research, Guangzhou, China. May 8, 2014.
51. **Zhuo JL.** Current insights and new perspectives on intracellular angiotensin II and signalling in the kidney. Invited Speaker, International Symposium on Renin-Angiotensin System (RAS): Understanding Systemic, Intracellular and Tissue RAS, Sao Paulo, Brazil. August 2014
52. **Zhuo JL.** New insights and perspectives on local paracrine and intracrine angiotensin II and blood pressure control. Invited Seminar Speaker, Department of Pharmacology and Vascular Biology Center, Georgia Regent University, Augusta, GA, September 2014

53. **Zhuo JL.** Building a strong Physiological Genomics Group in the American Physiological Society. Invited Speaker, Medical College of Wisconsin, Milwaukee, WI, October 3, 2014.
54. **Zhuo JL.** The roles of paracrine and intracrine angiotensin II in the proximal tubule of the kidney: current insights and new perspectives. Invited Seminar Speaker, Heart and Kidney Center, School of Pharmacy, the University of Houston, January 29, 2015.

## **PUBLICATIONS**

### **A. Print & eBook:**

**Li XC, Zhuo JL.** The Renin-Angiotensin System and the Kidney: New Insights and Perspectives. Edited by Neil Granger & Joey Granger, and published by Morgan & Claypool eBook program (March 2015). ISSN 2154-560X; ISBN: 978-1-61504-674-4

### **B. Referred articles, reviews or invited book chapters**

1. **Zhuo, J.,** Harris, P.J. & Skinner, S.L. Modulation of proximal tubular reabsorption by angiotensin II. *Clinical and Experimental Pharmacology and Physiology*, 13, 227-281, 1986.
2. Morgan, T., Harris, P.J., **Zhuo, J.** & Thomas D. Renal actions of atrial natriuretic peptide. In: *Pharmacology*, edited by M.J. Rand and C. Raper, Elsevier Science Publishers, pp201-206., 1987.
3. Harris, P.J., **Zhuo, J.** & Skinner, S.L. Effects of angiotensin II and III on glomerulo-tubular balance in rats. *Clinical and Experimental Pharmacology and Physiology*, 14, 489-502, 1987.
4. Harris, P.J., Skinner, S.L. & **Zhuo, J.** The effects of atrial natriuretic peptide and glucagon on proximal glomerulo-tubular balance in anaesthetized rats. *Journal of Physiology (Lond.)*, 412, 309-320, 1988.
5. **Zhuo, J.,** Harris, P.J. & Skinner, S.L. Atrial natriuretic factor modulates proximal glomerulo-tubular balance in anaesthetized rats. *Hypertension*, 14:666-673, 1989.
6. Harris, P.J., Skinner, S.L. & **Zhuo, J.** Haemodynamic and renal tubular responses to low-dose infusion and bolus injection of the peptide ANF in anaesthetized rats. *Journal of Physiology (Lond.)*, 412, 309-320, 1989.
7. Harris, P.J., Thomas, D., **Zhuo, J.** & Skinner, S.L. Regulation of proximal tubular sodium reabsorption by angiotensin II (All) and atrial natriuretic factor (ANF). *Acta Physiol Scand.*, 139(Suppl. 591): 63-65, 1990.
8. Harris, P.J., Mendelsohn, F.A.O., Skinner, S.L. & **Zhuo, J.** Haemodynamic and renal tubular effects of low doses of endothelin in anaesthetized rats. *Journal of Physiology, London*, 433:25-39, 1991.
9. Song, K., **Zhuo, J.,** Allen, A.M., Paxinos, G. & Mendelsohn, F.A.O. Angiotensin II receptor subtypes in rat brain and peripheral tissues. *Cardiology*, 79(Suppl 1):45-54, 1991.
10. Song, K., **Zhuo, J.** & Mendelsohn, F.A.O. Access of peripherally administered DuP 753 to rat brain angiotensin II receptors. *British Journal of Pharmacology*, 104: 771-772, 1991.
11. Sexton, P., **Zhuo, J.** & Mendelsohn, F.A.O. Localization and regulation of intrarenal receptors for angiotensin II and atrial natriuretic factor. *Tohoku Journal of Experimental Medicine*, 166:41-56, 1991.



12. Song, K. **Zhuo, J.**, Chai, S.Y. & Mendelsohn, F.A.O. A new method to localize active renin in tissues by autoradiography: Application to dog kidney. *Kidney International*, 42:639-646, 1991.
13. **Zhuo, J.**, Song, K., Harris, P.J. & Mendelsohn, F.A.O. In vitro autoradiography reveals predominantly AT<sub>1</sub> angiotensin II receptors in rat kidney. *Renal Physiology and Biochemistry*, 15:231-239, 1992. (Selected for the journal's cover highlight)
14. **Zhuo, J.**, Thomas, D., Harris, P.J. & Skinner, S.L. The role of endogenous angiotensin II in the regulation of renal haemodynamics and proximal reabsorption. *Journal of Physiology*, 453:1-13, 1992.
15. **Zhuo, J.**, Alcorn, D., Allen, A.M. & Mendelsohn, F.A.O. High-resolution localization of angiotensin II receptors in rat renal medulla. *Kidney International*, 42:1372-1380, 1992.
16. **Zhuo, J.**, Alcorn, D. Harris, P.J. & Mendelsohn, F.A.O. Localization and properties of angiotensin II receptors in rat kidney. *Kidney International*, 44(Suppl 42):S-40-S-46, 1993.
17. Aldred, G.P., Chai, S.Y., Song, K., **Zhuo, J.**, MacGregor, D.P. & Mendelsohn, F.A.O. Distribution of angiotensin II receptor subtypes in the rabbit brain. *Regulatory Peptides*, 44:119-130, 1993.
18. **Zhuo, J.** & Mendelsohn, F.A.O. Intrarenal angiotensin II receptors. In: *The Renin-Angiotensin System: Biochemistry, Pathophysiology and Therapeutics*, edited by Robertson JIS, Nicholls MG. Gower Medical Publishing, London, and New York. pp 25.1-25.14, 1993.
19. **Zhuo, J.**, Song, K., Chai, S.Y. & Mendelsohn, F.A.O. Anatomical localization of components of the renin-angiotensin system in different organs and tissues. In: *Inhibition of the Renin-Angiotensin System: Recent Advances*; edited by G.A. MacGregor & P.S. Sever. Gardiner-Caldwell Communications (Pacific) Ltd, H.K. pp17-25, 1993.
20. **Zhuo, J.**, Song, K., Chai, S.Y., MacGregor, D. & Mendelsohn, F.A.O. Localization of angiotensin II receptors and their subtypes in various tissues. In: *Current Advances in ACE inhibition III*, edited by G.A. MacGregor & P.A. Sever. Gardiner-Caldwell Communications Ltd., U.K. pp87-91, 1993.
21. Chai, S.Y., **Zhuo, J.** & Mendelsohn, F.A.O. Localization of Components of the renin-angiotensin system and site of action of inhibitors. *Arzneimittel Forschung (Drug Research)*, 43:214-221, 1993.
22. **Zhuo, J.**, Song, K., Harris, P.J. & Mendelsohn, F.A.O. Blockade by intravenous losartan of AT<sub>1</sub> angiotensin II receptors in rat brain, kidney and adrenal demonstrated by *in vitro* autoradiography. *Clinical and Experimental Pharmacology and Physiology*, 21:557-567, 1994.
23. **Zhuo, J.**, Yamada, H., Allen, A.M., Sun, Y. & Mendelsohn, F.A.O. Localization and properties of angiotensin converting enzyme and angiotensin II receptors in the heart. In: *The Cardiac Renin-Angiotensin System*, edited by K. Lindpainter and D. Ganten. Futura Scientific Publishing, New York. pp63-88, 1994.
24. Dean, R. **Zhuo, J.** Alcorn, D., Casley, D. & Mendelsohn, F.A.O. Cellular distribution of <sup>125</sup>I-endothelin-1 binding in the rat kidney following *in vivo* labelling. *American Journal of Physiology* 267 (Renal Fluid and Electrolyte Physiol. 36), F845-F852, 1994.
25. **Zhuo, J.**, Alcorn, D., MacCausland, J., Casley, D. & Mendelsohn, FAO. *In vivo* occupancy by Angiotensin II subtype 1 receptors in rat renal medullary interstitial cells. *Hypertension*, 23:838-843, 1994.

26. **Zhuo, J.**, Alcorn, D., MaCausland, J. & Mendelsohn, F.A.O. Localization and regulation of angiotensin II receptors in renomedullary interstitial cells. *Kidney International*, 46:1483-1485, 1994. (Selected for the Cover Highlight)
27. **Zhuo, J.**, Alcorn, D, Harris, P.J., Aldred, G.P. & Mendelsohn, F.A.O. Angiotensin II receptor subtypes in the kidney: Distribution and function. *Nephrology*, 1:511-525, 1995.
28. **Zhuo, J.** & Allen, A.M., Alcorn, D., MacGregor, D., Aldred, G.P. & Mendelsohn, F.A.O. The Distribution of Angiotensin II Receptors. In: *Hypertension: Pathology, Diagnosis, & Management*, Second Edition, edited by J.H. Laragh & B.M. Brenner. Raven Press, New York. pp1739-1762, 1995.
29. **Zhuo, J.**, Anderson, W., Song, K. & Mendelsohn, F.A.O. *In vitro* autoradiographic localization of active renin in the juxtaglomerular apparatus of the dog kidney: Effect of dietary sodium intake. *Clinical and Experimental Pharmacology and Physiology*, 23(4):291-298, 1996.
30. **Zhuo, J.**, MacGregor, D. & Mendelsohn, F.A.O. Comparative distribution of angiotensin II receptor subtypes in mammalian adrenal glands. In: *Vascular, Adrenal and Hypertension*, edited by G. P. Vinson & DC Anderson for Journal of Endocrinology Pty Ltd, London. Pp53-68, 1996.
31. Dean, R., **Zhuo, J.**, Casley, D., Alcorn, D. & Mendelsohn, F.A.O. Ultrastructural localization of endothelin-1 receptor subtypes in the rat kidney. *Clinical and Experimental Pharmacology and Physiology* 23:524-531, 1996.
32. **Zhuo J**, MacGregor DP, Mendelsohn FAO. Presence of angiotensin II AT-2 receptors in the adventitia of human kidney vasculature. *Clinical and Experimental Pharmacology and Physiology*, 23 (Suppl 3):S147-S153, 1996.
33. **Zhuo J**, Froomes P, Casley D, Liu JJ, Murone C, Chai SY, Buxton B, Mendelsohn FAO. Perindopril chronically inhibits angiotensin converting enzyme in both endothelium and adventitia of the internal mammary artery in patients with ischaemic heart disease. *Circulation* 96:174-182, 1997.
34. **Zhuo J**, Casley D, Murone C, Mendelsohn FAO. Acute and chronic *in vivo* inhibition by perindopril of angiotensin converting enzyme in the endothelium and adventitia of large blood vessels and organs in rabbits. *Journal of Cardiovascular Pharmacology* 29:297-310, 1997.
35. Butkus A, Albiston A, Alcorn D, Moritz K, **Zhuo J**, Wintour EM. Ontogeny of angiotensin receptor, types 1 and 2, in ovine mesonephros and metanephros. *Kidney International* 51: 628-636, 1997.
36. **Zhuo J**, Maric C, Dean R, Harris PJ, Alcorn D, Mendelsohn FAO. Localization and functional properties of angiotensin II AT<sub>1</sub> receptors in the kidney: Focus on renomedullary interstitial cells. *Hypertension Research* 20:233-250, 1997.
37. Dean R, Murone C, Lew RA, **Zhuo J**, Casley D, Muller-Esterl W, Alcorn D, Mendelsohn FAO. Localization of bradykinin B<sub>2</sub> binding sites in rat kidney following chronic ACE inhibitor treatment. *Kidney International* 52: 1261-1270, 1997.
38. **Zhuo J**, Allen AM, Mendelsohn FAO. Angiotensin receptor mapping in health and diseases. *ACE Report* 136:1-7, 1998.
39. Allen AM, Moeller I, Jenkins TA, **Zhuo J**, Aldred GP, Chai SY, Mendelsohn FAO. Angiotensin receptors in the nervous system. *Brain Research Bulletin* 47:17-28, 1998.
40. Moeller I, Allen AM, Chai SY, **Zhuo J**, Mendelsohn FAO. Bioactive angiotensin peptides. *Journal of Human Hypertension* 12:289-293, 1998.
41. **Zhuo J**, Dean R, Maric C, Harris PJ, Alcorn D, Mendelsohn FAO. Localization and interactions of vasoactive peptide receptors in renomedullary interstitial cells. *Kidney International* 1998; 54 (67):S-22-S-28, 1998 (Selected for the journal's cover highlight).

42. **Zhuo J**, Moller I, Jenkins T, Chai SY, Allen AM, Mendelsohn FAO. Mapping of tissue angiotensin converting enzyme, angiotensin AT<sub>1</sub>, AT<sub>2</sub> and AT<sub>4</sub> receptors. *Journal of Hypertension*. 16(12 Pt 2):2027-2037, 1998.
43. Allen AM, **Zhuo J**, Mendelsohn FAO. Localization of angiotensin AT<sub>1</sub> and AT<sub>2</sub> receptors. *Journal of American Society of Nephrology* 10 (Suppl 11):S23-S29, 1998.
44. **Zhuo, J.**, Dean, R., Maric, C., Alcorn, D., Harris, P.J. & Mendelsohn, F.A.O. Localization and roles of angiotensin, endothelin and bradykinin receptors in interstitial cells of the renal medulla. *Wenner-Gren Foundation International Symposium: Renin-Angiotensin*, edited by Hans Ulfendahl & Mattias Aurell, for The Biochemical Society, Portland Press Ltd, London. pp221-235, 1998.
45. Dean R, Maric C, Aldred GP, **Zhuo J**, Harris PJ, Alcorn D, Mendelsohn FAO. Rat renomedullary interstitial cells possess bradykinin B<sub>2</sub> receptors *in vivo* and *in vitro*. *Clinical and Experimental Pharmacology and Physiology* 26: 48-55, 1999.
46. **Zhuo J**, Mitsure Ohishi, Mendelsohn FAO. Roles of AT<sub>1</sub> and AT<sub>2</sub> receptors in the hypertensive Ren-2 gene transgenic rat kidney. *Hypertension* 33 (1 Pt 2):347-353, 1999. (Selected for the journal's cover highlight)
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61. **Zhuo J**, Skinner SL, Mendelsohn FAO. Cardiovascular, renal cortical and medullary hemodynamic responses to blockade of AT<sub>1</sub> and AT<sub>2</sub> receptors in anaesthetized transgenic (mRen-2)27 hypertensive rats. *52nd Annual Fall Scientific Sessions of the Council for High Blood Pressure Research*, Philadelphia, USA., 1998. (Oral)
62. Ohishi M, **Zhuo J**, Yin L, Fennessy P, Dusting G. Increased expression of nitric oxide synthase isoforms in atheroma-like lesions of rabbit and human blood vessels. *71st Scientific Sessions of American Heart Association*, Dallas, USA., 1998.
63. Ohishi M, **Zhuo J**, Fennessy P, Dusting G, Mendelsohn FAO. Co-localization of ACE, AT<sub>1</sub> and AT<sub>2</sub> receptors, and the isoforms of nitric oxide synthase in human atherosclerotic coronary artery. *International Symposium on Vascular Biology*, Cairn, Queensland, 1998.
64. **Zhuo J**, Skinner SL, Mendelsohn FAO. AT<sub>1</sub>, but not AT<sub>2</sub> and AT<sub>4</sub>, receptors regulate renal cortical and medullary hemodynamics in anaesthetized transgenic (mRen-2)27 hypertensive rats. *The 4th Congress of Asian and Ocenian Physiological Societies*, Brisbane, Queensland. 1998.
65. Ohishi M, Fennessy P, Dusting GJ, Mendelsohn FAO, **Zhuo JL**. Expression of ACE, AT<sub>1</sub> receptors and isoforms of nitric oxide synthase in normal and atherosclerotic human coronary artery. *53<sup>rd</sup> Annual Fall Conference and Scientific Sessions of the Council for High Blood Pressure Research*, Orlando, USA., 1999.

66. Harrison-Bernard LM, **Zhuo JL**, Kobori H, Ohishi M, Navar LG. Differential regulation of renal AT<sub>1</sub> receptors and angiotensin converting enzyme in angiotensin II-induced hypertension. *32<sup>nd</sup> Annual Meeting of American Society of Nephrology*, Miami, Florida, 1999.
67. Ohishi M, Mendelsohn FAO, **Zhuo JL**. Increased intrarenal expression of ACE and AT<sub>1</sub> receptors in tubulo-interstitium and vasculature of chronically rejected human renal allografts. *Australian and New Zealand Society of Nephrology Annual Meeting*, Melbourne, 2000. (Oral)
68. **Zhuo JL**, Harrison-Bernard L, Navar LG. Differential regulation of intrarenal ACE and AT<sub>1</sub> receptor expression in angiotensin II-induced hypertensive rats. *Australian and New Zealand Society of Nephrology Annual Meeting*, Melbourne, 2000.
69. **Zhuo JL**, Imig JD, Hammaon TG, Navar LG. Flow cytometric analysis of renal endosomal Ang II type 1 receptor expression and trafficking in Ang II-induced hypertensive rats. *Australasian Society of Flow Cytometry Annual Scientific Meeting*, Adelaide, 2000. (Oral)
70. **Zhuo JL**, Imig JD, Hammond TG, Navar LG. AT<sub>1A</sub> receptor mediated intracellular accumulation of Ang II in renal endosomes is prevented by candesartan during Ang II-induced hypertension. The 22<sup>nd</sup> Annual Scientific Meeting of the High Blood Pressure Research Council of Australia, Sydney, 2000. (Oral)
71. **Zhuo JL**, Imig J, Raibstein SR, Benes E, Hammond TG, Navar LG. Flow cytometric analysis of AT<sub>1A</sub> receptor expression in renal cortical endosomes in angiotensin II-induced hypertensive rats. *54<sup>th</sup> Annual Fall Conference and Scientific Sessions of the Council for High Blood Pressure Research*, Washington DC, USA, 2000.
72. **Zhuo JL**, Imig J, Raibstein SR, Benes E, Hammond TG, Navar LG. Intra-renal trafficking of angiotensin II through renal cortical endosomes is prevented by candesartan cilexetil during angiotensin II-induced hypertension. *AstraZeneca International Symposium on Angiotensin II Receptor Blockade: Effects beyond Blood Pressure Control*. Prague, Czech Republic, 2000. (Oral)
73. **Zhuo JL**. Intracellular Ang II and AT<sub>1A</sub> receptor trafficking in rat renal cortical endosomes during Ang II-induced hypertension. Invited International Sessional Speaker, The 23<sup>rd</sup> Annual Scientific Meeting of Japanese Society of Hypertension, Fukuoka, Japan, 2000, (Oral)
74. **Zhuo JL**, Ohishi M, Mendelsohn FAO. Effects of chronic ACE inhibition on ACE, AT<sub>1</sub> receptor and nitric oxide synthase expression in internal mammary artery of patients with ischemic heart disease. *18<sup>th</sup> Scientific Meeting of the International Society of Hypertension*, Chicago, USA., 2000.
75. **Zhuo JL**, Mendelsohn FAO, Ohishi M. Perindopril alters vascular ACE, AT<sub>1</sub> receptor and nitric oxide synthase expression in patients with coronary disease. *55<sup>th</sup> Annual Fall Conference and Scientific Sessions of the Council for High Blood Pressure Research*, Chicago, USA, September 2001.
76. **Zhuo JL**. Angiotensin II accumulation in rat renal cortical intracellular endosomes during angiotensin II-induced hypertension. *Michigan Annual Hypertension Workshop*, Battle Creek, MI, 2002. (Oral)
77. **Zhuo, JL**. Cardiovascular and renal regional hemodynamic responses to Ang IV are mediated by AT<sub>1</sub> receptors in anesthetized rats. *Experimental Biology 2002*, New Orleans, LA. 2002.
78. **Zhuo JL**, Carretero OA, Peng HM, Rhaleb N-E. Receptor-mediated anti-fibrotic effects of Ac-SDKP in cultured rat cardiac fibroblasts. *The 56<sup>th</sup> Annual Fall Conference and*

- Scientific Sessions of the Council for High Blood Pressure Research*, American Heart Association, 2002. (Oral)
79. **Zhuo JL.** Ang IV induces systemic and renal cortical and medullary vasoconstriction by interacting with AT<sub>1</sub> receptors in anesthetized rats. *The 56<sup>th</sup> Annual Fall Conference and Scientific Sessions of the Council for High Blood Pressure Research*, American Heart Association, 2002.
80. Rasoul S, Carretero OA, Peng HM, Cavasin MA, **Zhuo JL**, Rhaleb N-E. Angiotensin-converting enzyme inhibition and acetyl-seryl-aspartyl-lysyl-proline lower cardiac inflammation and fibrosis in hypertension. *The 56<sup>th</sup> Annual Fall Conference and Scientific Sessions of the Council for High Blood Pressure Research*, American Heart Association, 2002.
81. **Zhuo JL.** AT<sub>1</sub> receptors are down-regulated in remnant rat kidneys during early 5/6 nephrectomy. *Experimental Biology Meeting 2003* (April Issue)
82. **Zhuo JL.** ACE inhibition prevents glucagon-induced glomerular hyperfiltration in anesthetized rats. *XVth Scientific Meeting of the Inter-American Society of Hypertension 2003* (April issue)
83. Li, X.C., O.A. Carretero, and **J.L. Zhuo.** Glucagon-induced glomerular mesangial cell proliferation involves specific glucagon receptors and activation of the MAP kinase signaling cascade. *The 58<sup>th</sup> Annual Fall Conference and Scientific Sessions of the Council for High Blood Pressure Research*, Chicago, 2004. (top 10% abstract, Oral)
84. Li, X.C., Carretero, O.A., Shao, Y., and **Zhuo, J.L.** Glucagon induces proliferation of glomerular mesangial cells by activating MAP kinase ERK 1/2 signaling: role of phospholipase C, protein kinase A, and AT<sub>1</sub> receptors. *The 59<sup>th</sup> Annual Fall Conference and Scientific Sessions of the Council for High Blood Pressure Research*, Washington D.C., September, 2005. (Oral)
85. **Zhuo, J.L.**, Li, X.C., Cavasin, M., Muller-Esterl, W., Rhaleb, N-R., and Carretero, O.A. Increased bradykinin B<sub>1</sub> and B<sub>2</sub> receptor expression is associated with intrarenal tubulointerstitial injury in angiotensin II-induced hypertension. *The 7<sup>th</sup> World Congress on Inflammation*, Melbourne, Australia, August, 2005.
86. **Zhuo, J.L.**, Carretero, O.A., and Li, X.C. Selective silencing of angiotensin II type 1a (AT<sub>1a</sub>) receptors by RNA interference blocks angiotensin II internalization in proximal tubule cells. *The 59<sup>th</sup> Annual Fall Conference and Scientific Sessions of the Council for High Blood Pressure Research*, Washington D.C., September, 2005. (Oral)
87. Li, X.C., Carretero, O.A., Shao, Y., and **Zhuo, J.L.** Glucagon induces glomerular mesangial cell proliferation and MAP kinase ERK 1/2 phosphorylation by interacting with phospholipase C, protein kinase A and angiotensin II. *The 7<sup>th</sup> World Congress on Inflammation*, Melbourne, Australia, August, 2005.
88. Li, X.C., Carretero, O.A., and **Zhuo, J.L.** Angiotensin II AT<sub>1a</sub> receptor siRNA inhibits receptor-mediated angiotensin II endocytosis and NHE-3 expression in proximal tubule cells. *American Society of Nephrology 38<sup>th</sup> Annual Renal Week Meeting*, Philadelphia, PA. November, 2005. (top 10% abstract, Oral)
89. Li, X.C., Carretero, O.A., Shao, Y., and **Zhuo, J.L.** Intracellular signaling cross-talk between angiotensin II, glucagon and hyperglycemia mediates activation of MAP kinases ERK 1/2 phosphorylation in glomerular mesangial cells. *APS-Experimental Biology 2006*, San Francisco.
90. Li, X.C., Carretero, O.A., L. Gabriel Navar, and **Zhuo, J.L.** AT<sub>1a</sub> receptor-mediated accumulation of extracellular angiotensin II in proximal tubule cells: role of clathrin-coated pits, cytoskeleton microtubules, and tyrosine phosphatase. *APS-Experimental Biology 2006*, San Francisco.

91. Li, X.C., Carretero, O.A., and **Zhuo, J.L.** Long-term glucagon administration induces early type 2 diabetic phenotypes in mice: role of glucagon receptors and angiotensin II. *The 21<sup>st</sup> Annual Scientific Meeting of the American Society of Hypertension*, New York 2006.
92. Li, XC, Carretero OA, **Zhuo JL**. Cross-talk between angiotensin II and glucagon receptor signaling mediates activation of mitogen-activated protein kinases ERK 1/2 in rat glomerular mesangial cells. *Cell Signaling World 2006: signaling transduction pathways as therapeutic targets*. Luxembourg, January 25 to 28, 2006. (Oral)
93. **Zhuo JL**, Carretero OA, Li XC. Intracrine angiotensin II induces intracellular NF- $\kappa$ B signaling in rabbit kidney proximal tubule cells. *Cell Signaling World 2006: signaling transduction pathways as therapeutic targets*. Luxembourg, January 25 to 28, 2006. (Oral)
94. Li, XC, Shao Y, **Zhuo JL**. Absence of AT<sub>1a</sub> receptors prevents intrarenal and adrenal accumulation of exogenous [<sup>125</sup>I]-Val<sup>5</sup>-angiotensin II in AT<sub>1a</sub> receptor-deficient mice. *American Society of Nephrology's (ASN) 39th Annual Meeting and Scientific Exposition*, San Diego, California, November 14-19, 2006,
95. Li XC, Carretero OA, Liu YH, Xu J, Yang X-P, Yang J, Shesely E, **Zhuo JL**. AT<sub>1a</sub> receptors predominantly mediate pressor, cardiac hypertrophic, and left ventricular responses to long-term angiotensin II infusion in mice. *60th Annual Fall Conference and Scientific Sessions of the Council for High Blood Pressure Research in association with the Council on the Kidney in Cardiovascular Disease*, San Antonio, TX, Oct 4-7, 2006
96. **Zhuo JL**, Shao Y, Li XC. AT<sub>1a</sub> versus AT<sub>1b</sub> receptor-mediated intrarenal accumulation of angiotensin II in AT<sub>1a</sub> receptor-deficient mice. *Sessions of the Council for High Blood Pressure Research in association with the Council on the Kidney in Cardiovascular Disease*, San Antonio, TX, Oct 4-7, 2006
97. Li XC, **Zhuo JL**. Selective knockdown of angiotensin II (Ang II) type 1a (AT<sub>1a</sub>) receptors by RNAi inhibits intracellular accumulation of Val<sup>5</sup>-angiotensin II and NHE-3 expression in rabbit proximal tubule cells. *Keystone Symposium on MicroRNAs and siRNAs: Biological Functions and Mechanisms*. Keystone, CO., January 28 to February 2, 2007. (Oral)
98. **Zhuo JL**, Shao Y, Li XC. Intracellular uptake of circulating [<sup>125</sup>I]-Val<sup>5</sup>-angiotensin II in the kidney and adrenal gland of AT<sub>1a</sub> receptor-deficient mice: effect of AT<sub>1b</sub> receptors and ACE inhibition. *61st Annual Fall Conference and Scientific Sessions of the American Heart Association Council for High Blood Pressure Research in association with the Council on the Kidney in Cardiovascular Disease*, Tucson, AZ, September 26 to 29, 2007,
99. Li, XC, Shao Y, **Zhuo JL**. Selective RNA interference of AT<sub>1</sub> receptor expression blocks Val<sup>5</sup>-angiotensin II endocytosis and angiotensin II-induced NHE-3 expression in immortalized rabbit proximal tubule cells. *FASEB Summer Research Conference on Renal Hemodynamics: Biomolecular Control Mechanisms integrating Vascular and Tubular Function*. Saxtons River, VT, July 7-12, 2007. (Oral)
100. Li XC, Shao Y, **Zhuo JL**. AT<sub>1a</sub> receptor-knockout induces polyuria and impairs urine concentrating mechanisms in AT<sub>1a</sub> receptor-deficient mice. *American Society of Nephrology 40th Annual Meeting & Scientific Exposition*, San Francisco, October 31-November 5, 2007. (Oral)
101. Li XC, Dai XG, **Zhuo JL**. Expression of AT<sub>1</sub> receptor and NHE-3 mRNAs and proteins is differentially regulated in proximal tubules of angiotensin II-induced hypertensive rats. *62nd Annual Fall Conference and Scientific Sessions of the American Heart Association Council for High Blood Pressure Research in Association with the Council on the Kidney in Cardiovascular Disease*, Atlanta, Georgia, September 17 to 20, 2008.

102. Li XC, **Zhuo JL**. Roles Of clathrin light chains and microtubule-associated proteins in AT<sub>1</sub> receptor-mediated Ang II endocytosis and NHE-3 expression in rabbit proximal tubule cells. *62nd Annual Fall Conference and Scientific Sessions of the American Heart Association Council for High Blood Pressure Research in Association with the Council on the Kidney in Cardiovascular Disease*, Atlanta, Georgia, September 17 to 20, 2008. (Oral)
103. **Zhuo JL**, Li XC. AT<sub>1a</sub> receptor-mediated activation of PKC $\alpha/\beta$ II-, GSK3 $\alpha/\beta$ -, STAT3- and Src-specific phosphoproteins in proximal tubules of angiotensin II-induced hypertensive rats. *American Society of Nephrology 41st Annual Meeting & Scientific Exposition*, Philadelphia, PA, November 4 - 9, 2008.
104. Li XC, **Zhuo JL**. Intracellular angiotensin II directly induces in vitro transcription of TGF- $\beta$ 1, MCP-1 and NHE-3 mRNAs in isolated rat renal cortical nuclei via activation of nuclear AT<sub>1a</sub> receptors. *5th Annual Research Symposium, Henry Ford Medical Group Academic Affairs*, April 25, 2008. (Oral)
105. Li XC, Cook JL, Rubera I, Zhang F, Tauc M, **Zhuo JL**. Proximal tubule cell-specific adenoviral transfer of an intracellular angiotensin II fusion protein elevates blood pressure by activating AT<sub>1</sub> receptors in rats. *63rd Annual Fall Conference and Scientific Session of the American Heart Association Council for High Blood Pressure Research in Association with the Council on the Kidney in Cardiovascular Disease*, Chicago, IL, September 23-26, 2009.
106. Li XC, Cook JL, Hopfer U, **Zhuo JL**. Intracellular angiotensin II induces NHE-3 expression in mouse S1 proximal tubule cells via AT<sub>1a</sub> and AT<sub>2</sub> receptor-mediated activation of MAP kinases and NF- $\kappa$ B signaling. *American Society of Nephrology's 42nd Annual Meeting & Scientific Exposition*, San Diego, California, October 27-November 1, 2009. (Oral)
107. Li XC, Cook JL, Hopfer U, **Zhuo JL**. Intracellular angiotensin II induces the expression of Na<sup>+</sup>/HCO<sub>3</sub><sup>-</sup> co-transporter in mouse proximal tubule cells via MAPK- and NF $\kappa$ B-dependent signaling. *American Society of Nephrology's 43rd Annual Meeting & Scientific Exposition*, Denver, Colorado, November 16-21, 2010.
108. Li XC, Cook JL, Hopfer U, **Zhuo JL**. The endocytic motif Leu<sup>316</sup> to Tyr<sup>319</sup> in the 3rd cytoplasmic loop of the AT<sub>1a</sub> receptor mediates angiotensin II uptake and activation of MAP kinases ERK1/2 and NHE-3 in mouse proximal tubule cells. *64th Annual Fall Conference and Scientific Session of the American Heart Association Council for High Blood Pressure Research in Association with the Council on the Kidney in Cardiovascular Disease*, Washington DC, October 13-16, 2010. (Oral)
109. Li XC, Cook JL, Zhang F, Gu V, **Zhuo JL**. Proximal tubule-specific expression of AT<sub>1a</sub> receptors in the kidney mediates extracellular and intracellular angiotensin II-induced blood pressure responses in AT<sub>1a</sub> receptor-knockout mice. *64th Annual Fall Conference and Scientific Session of the American Heart Association Council for High Blood Pressure Research in Association with the Council on the Kidney in Cardiovascular Disease*, Washington DC, October 13-16, 2010. (top 10% abstract, Oral)
110. Li XC, Gu V, Miguel-Qin E, Hopfer U, **Zhuo JL**. Caveolin-1 knockout attenuates blood pressure and renal responses in angiotensin II-induced hypertensive mice partly by inhibiting AT<sub>1a</sub> receptor-mediated uptake of angiotensin II in proximal tubules of the kidney. *65th Annual Fall Conference and Scientific Session of the American Heart Association Council for High Blood Pressure Research in Association with the Council on the Kidney in Cardiovascular Disease*, Orlando, FL, September 20-24, 2011. (Oral)
111. Li XC, Hopfer U, **Zhuo JL**. Mutation of endocytic motifs in the cytoplasmic loop of AT<sub>1a</sub> receptors impairs angiotensin II uptake and activation of MAP kinases ERK1/2 and sodium and hydrogen exchanger-3 in proximal tubule cells. *American Society of*

- Nephrology's 44<sup>th</sup> Annual Meeting & Scientific Exposition*, Philadelphia, PA, November 9-13, 2011.
112. Ellis BN, Li XC, Miguel-Qin E and **Zhuo JL**. Long-term interactions between the ACE/Ang II/AT<sub>1a</sub> receptor axis and the ACE2/Ang (1-7)/Mas receptor axis in wild-type C57BL/6J and AT<sub>1a</sub> receptor-knockout mice. *Experimental Biology* San Diego, CA, USA, April 21-25, 2012. (Oral)
  113. Miguel-Qin E, Li XC, Ellis BN and **Zhuo JL**. AT<sub>1A</sub> receptor-mediated blood pressure and renal effects of long-term infusion of a low dose of angiotensin II in C57BL/6J and AT<sub>1a</sub> receptor-knockout mice. *Experimental Biology*, San Diego, CA, USA, April 21-25, 2012.
  114. Li XC, Hopfer U, and **Zhuo JL**. AT<sub>1a</sub> receptor-mediated uptake of extracellular angiotensin II in proximal tubule cells may partly involve the multi-ligand endocytic receptor megalin. *66<sup>th</sup> Annual Fall Conference and Scientific Session of the American Heart Association Council for High Blood Pressure Research in Association with the Council on the Kidney in Cardiovascular Disease*, Washington DC, September 19-22, 2012.
  115. Li XC, Shull GE, Miguel-Qin E, **Zhuo JL**. A novel role of the Na<sup>+</sup>/H<sup>+</sup> exchanger 3 (NHE3) in angiotensin II-induced hypertension in wild-type and NHE3-deficient mice. *66<sup>th</sup> Annual Fall Conference and Scientific Session of the American Heart Association Council for High Blood Pressure Research in Association with the Council on the Kidney in Cardiovascular Disease*, Washington DC, September 19-22, 2012.
  116. **Zhuo JL**, Ellis BN, Miguel-Qin E, Li XC. Long-term blood pressure and renal responses to low doses of angiotensin II and/or angiotensin (1-7) in C56BL/6J and AT<sub>1a</sub>-knockout mice: roles of AT<sub>1a</sub> and Mas receptors. *American Society of Nephrology's 45<sup>th</sup> Annual Meeting & Scientific Exposition*, San Diego, CA, November 3-7, 2012.
  117. Li XC, Shull GE, Miguel-Qin E, **Zhuo JL**. Phosphoproteomic analysis of signaling responses to angiotensin II in proximal tubules of NHE3-deficient mice. *FASEB J* April 9, 27:1165.19, 2013.
  118. Li XC, Shull GE, Miguel-Qin E, **Zhuo JL**. A novel role of proximal tubular Na<sup>+</sup>/H<sup>+</sup> exchanger 3 (NHE3) in angiotensin II-induced hypertension in Nhe3<sup>-/-</sup> mice with transgenic rescue of NHE3 in intestines. *67<sup>th</sup> Annual Fall Conference and Scientific Session of the American Heart Association Council for High Blood Pressure Research in Association with the Council on the Kidney in Cardiovascular Disease*, New Orleans, September, 2013. (top 10% abstract, Oral)
  119. Li XC, Cook JL, Hopfer U, **Zhuo JL**. Novel signaling mechanisms by which intracellular angiotensin II induces Na<sup>+</sup>/HCO<sub>3</sub><sup>-</sup> cotransporter expression in the proximal tubule of the kidney. *67<sup>th</sup> Annual Fall Conference and Scientific Session of the American Heart Association Council for High Blood Pressure Research in Association with the Council on the Kidney in Cardiovascular Disease*, San Francisco, CA. September 2014
  120. Navar LG, Sato R, Sato A, **Zhuo JL**, Li XC. Augmentation of kidney angiotensinogen expression and urinary angiotensinogen excretion by intracellular Ang II containing fusion protein. *Experimental Biology* 2014, San Diego, CA. April 26-30, 2014.
  121. Li XC, **Zhuo JL**. Microarray profiling of G protein-coupled receptor signaling responses to overexpression of an intracellular angiotensin II fusion protein in mouse proximal tubule cells, presented at the 2015 Experimental Biology Meeting, Boston, MA. March 28-April 1, 2015.
  122. Li XC, Soleimani M, Nguyen H, Li H, Roman RJ, **Zhuo JL**. Conditional knockout of NHE3 in the proximal tubule of the kidney promotes pressure natriuresis response in mice. *68<sup>th</sup> Annual Fall Conference and Scientific Session of the American Heart Association Council*

- for High Blood Pressure Research in Association with the Council on the Kidney in Cardiovascular Disease, Washington DC, September 2015. (Oral)
123. Li XC, Sandoval RM, Molitoris BA, **Zhuo JL**. In vivo evidence of AT<sub>1a</sub> receptor-mediated uptake of angiotensin II by the proximal tubule visualized by intravital multiphoton imaging. 68<sup>th</sup> Annual Fall Conference and Scientific Session of the American Heart Association Council for High Blood Pressure Research in Association with the Council on the Kidney in Cardiovascular Disease, Washington DC, September 2015. (top 10% abstract, Oral)
  124. Li XC, Soleimani M, Nguyen H, **Zhuo JL**. A novel mechanism of pressure natriuresis as revealed in global, kidney-selective, and conditional proximal tubule-specific NHE3 knockout mice. Experimental Biology Meeting, San Diego, CA, April 2016.
  125. Li XC, Soleimani M, Nguyen H, **Zhuo JL**. The Na<sup>+</sup>/H<sup>+</sup> exchanger 3 in the proximal tubule of the kidney as a novel mechanism of pressure natriuresis responses and angiotensin II-induced hypertension. American Society of Hypertension Scientific Meeting, New York, May 2016.
  126. Li XC, Nguyen H, **Zhuo JL**. An orally absorbable potent NHE3 inhibitor attenuates angiotensin II-induced hypertension mainly by inhibiting NHE3 in the proximal tubule of the kidney. 69<sup>th</sup> Annual Fall Conference and Scientific Session of the American Heart Association Council for High Blood Pressure Research in Association with the Council on the Kidney in Cardiovascular Disease, Orlando, FL, September 2016. (Oral)
  127. Li XC, Soleimani M, Nguyen H, Li H, **Zhuo JL**. Overexpression of an intracellular angiotensin II fusion protein selectively in the mitochondria of the proximal tubules elevates blood pressure in mice via AT<sub>1a</sub> receptor-mediated mitochondrial respiratory and glycolysis stress. 69<sup>th</sup> Annual Fall Conference and Scientific Session of the American Heart Association Council for High Blood Pressure Research in Association with the Council on the Kidney in Cardiovascular Disease, Orlando, FL, September 2016. (top 10% abstract, Oral)
  128. Li XC, Soleimani M, **Zhuo JL**. Evidence for mitochondrial AT<sub>2</sub> receptor-mediated inhibition of intracellular angiotensin II-induced respiratory and glycolytic responses in mouse proximal tubule cells. Experimental Biology Meeting, Chicago, IL, April 2017.
  129. Li XC, **Zhuo JL**. Mitochondria-targeting overexpression of AT<sub>2</sub> receptors inhibits intracellular angiotensin II-induced respiratory and glycolytic stress responses in mouse proximal tubule cells. 70<sup>th</sup> Annual Fall Conference and Scientific Session of the American Heart Association Council for High Blood Pressure Research in Association with the Council on the Kidney in Cardiovascular Disease, San Francisco, CA, September 2017. (top 10% abstract, Oral)
  130. **Zhuo JL**. Lecture: New frontiers in the intrarenal Renin-Angiotensin system: a critical review of classical and new paradigms. The 16<sup>th</sup> European Nephrology Conference, October 2-3, 2017, Barcelona, Spain.
  131. **Zhuo JL**. Invited Speaker: New insights into the roles of the Na<sup>+</sup>/H<sup>+</sup> Exchanger 3 in pressure natriuresis and angiotensin II-induced hypertension. The 16<sup>th</sup> European Nephrology Conference, October 2-3, 2017, Barcelona, Spain.
  132. Li XC, **Zhuo JL**. Invited Speaker: Inhibition of NHE3 in the proximal tubule of the kidney by an orally absorbable NHE3 inhibitor attenuates angiotensin II-induced hypertension in mice. The 16<sup>th</sup> European Nephrology Conference, October 2-3, 2017, Barcelona, Spain.

## **SUPERVISION OF GRADUATE STUDENTS AND POSTDOCTORAL FELLOWS**

1. Dr. Kei-fu Song, M.D., Ph.D., now a Professor in the Department of Pharmacology, Osaka City Medical School, Japan.
2. Dr. Peter Aldred, Ph.D., Department of Medicine, Austin & Repatriation Medical Center, University of Melbourne, Australia. Now a Senior CSIRO Research Officer at the same institution.
3. Dr. Rachael Dean, Ph.D., Department of Medicine, Austin & Repatriation Medical Center, The University of Melbourne, Australia. Now a Senior Research Fellow in the same institution.
4. Dr. Duncan MacGregor, M.D., Ph.D., Department of Medicine, Austin & Repatriation Medical Center, The University of Melbourne, Australia. Now a neurology senior specialist at the University of Melbourne School of Medicine.
5. Dr. Christine Maric, Ph.D., now a Scientific Program Officer, National Heart Lung and Blood Institute, Bethesda, MD.
6. Dr. Ingrid Moeller, Ph.D., Howard Florey Institute, University of Melbourne, Australia. Now a senior research fellow at the same institute.
7. Dr. Carmel Murone, Ph.D., Howard Florey Institute, University of Melbourne, Australia. Now a senior research fellow at the same institute.
8. Dr. Mitsuru Ohishi, M.D., Ph.D., now Professor and Chairman, Department of Cardiovascular Medicine and Hypertension, Graduate School of Medical and Dental Sciences, Kagoshima University, Kagoshima City, Japan.
9. Dr. Carsten Tschope, M.D., Ph.D., now a Professor in the Department of Cardiology, Free University of Berlin, Germany.
10. Dr. Yuan Shao, M.D., Division of Hypertension and Vascular Research, Henry Ford Hospital, Detroit, MI, USA..
11. Dr. Xiao C. Li, M.S., M.D., now a Senior Research Scientist (IV), Department of Pharmacology and Toxicology, University of Mississippi Medical Center, Jackson, Mississippi, USA.
12. Dr. Angela Liang, M.D., Wayne State University School of Medicine, Detroit, MI, USA. Now at Wayne State University of Medicine.
13. Mr. Victor Gu, a Pre-med student, University of Michigan, Ann Arbor, Michigan, USA. (2013)
14. Ms. Elisa Miguel-Qin, B.S., now a medical student at the University of Mississippi Medical Center, Jackson, MS. (2012-)
15. Eli A. Smith, B.S., now MD/PhD student at the University of Mississippi Medical Center, Jackson, MS. (2013-2014).
16. Ms. Brienne Ellis, B.S., now a Ph.D. student at the University of Mississippi Medical Center, Jackson, MS. (2011)
17. Mr. Ram Kuwar, B.S., 2011, now a graduate student at the University of Mississippi Medical Center, Jackson, MS. (2011)
18. Chong Yin, B.S., graduate student at the University of Mississippi Medical Center, Jackson, MS. (2012)
19. Dr. Yun Zheng, M.D., Visiting Scientist, Changjiang University, Hubei Province, China. (2012)
20. Fernanda M. Ferrão, B.S., Visiting/Exchange Ph.D. student, Instituto de Biofísica Carlos Chagas Filho, Universidade Federal do Rio de Janeiro, Brazil. (2013-)
21. Fang Chen, graduate student at the University of Mississippi Medical Center, Jackson, MS. (2014-)



22. Dr. Jianfeng Zhang, M.D., Ph.D., Visiting Professor from Guangxi Medical University, China. (2015-)
23. Hoang Nguyen, B.S., now a dental school student at the University of Mississippi Medical Center, Jackson, MS. (2017-)
24. Dongmin Zhu, M.D., Visiting Associate Professor, Department of Internal Medicine, Guangxi Technology University School of Medicine, Liuzhou, Guangxi, China (2017-)

#### **DISSERTATION COMMITTEE MEMBERSHIPS**

1. Ram Kuwar, MS Candidate, Department of Neurobiology and Anatomical Sciences, the University of Mississippi Medical Center, Jackson, MS.
2. Jingjing Wang, PhD Candidate, Dept. of Pharmacology at School of Pharmacy, University of Mississippi, Oxford, MS
3. Jessica Anderson, PhD Candidate, Department of Pharmacology at the University of Mississippi Medical Center, Jackson, MS
4. Ashlyn Harmon, PhD Candidate, Department of Pharmacology at the University of Mississippi Medical Center, Jackson, MS
5. Xiaochen He, PhD Candidate, Department of Pharmacology at the University of Mississippi Medical Center, Jackson, MS

#### **TEACHING COURSES AND LECTURES IN RENAL PHYSIOLOGY, NEPHROLOGY, HYPERTENSION AND G PROTEIN-COUPLED RECEPTOR PHARMACOLOGY AND SIGNALING (> 10 hours a year)**

2002- 2010: Mechanisms of hypertension in Division of Hypertension and Vascular Research, Henry Ford Hospital (>10 hours a year).

2002-2010: Renal physiology and epithelial transport in Division of Nephrology and Hypertension, Henry Ford Hospital (> 2 hours).

2004-2010: Renal physiology on epithelial transport in the Department of Physiology at Wayne State University School of Medicine, Detroit, Michigan, USA (>3 hours a year).

2004-2010: Research Progress Updates on G protein-coupled receptor signalling in the Department of Physiology at Wayne State University School of Medicine, Detroit, Michigan, USA (>3 hours a year).

2010-Present: Teach Mechanisms of drug action in the Department of Pharmacology and Toxicology at the University of Mississippi Medical Center, Jackson, MS. (>3 hours a year).

2010 -Present: Teach Endothelial dysfunction in the Department of Pharmacology and Toxicology at the University of Mississippi Medical Center, Jackson, MS. (>3 hours a year)

2010 -Present: Teach G protein-coupled receptor pharmacology in the Department of Pharmacology and Toxicology at the University of Mississippi Medical Center, Jackson, MS., USA. (>3 hours a year)

2010 - Present: Research Progress Updates to graduate students and trainees in the Center of Excellence for Cardiovascular and Renal Research at The University of Mississippi

Medical Center, Jackson, MS, USA. (~ 3 hours a year)

2012 -: Graduate Course Director for PHARM. 723: Mechanisms of Drug Actions in the Department of Pharmacology and Toxicology at the University of Mississippi Medical Center, Jackson, MS., USA.

2012 -: PHARM 790: Special Topics (Cell Signaling) in the Department of Pharmacology and Toxicology at the University of Mississippi Medical Center, Jackson, MS., USA.

2012 -: PHARM 792: Teach Research Rotation in the Department of Pharmacology and Toxicology at the University of Mississippi Medical Center, Jackson, MS., USA.

2012 -: PHARM. 792: Research in Pharmacology and Toxicology in the Department of Pharmacology and Toxicology at the University of Mississippi Medical Center, Jackson, MS., USA.

2012 -: PHARM. 798: Dissertation and Dissertation Research in the Department of Pharmacology and Toxicology at the University of Mississippi Medical Center, Jackson, MS., USA.

2012 -: ANAT 740: Readings in Contemporary Anatomy in the Department of Neurobiology and Anatomical Sciences at the University of Mississippi Medical Center, Jackson, MS., USA.

2013 -: Graduate Course Director for PHARM. 723: Mechanisms of Drug Actions in the Department of Pharmacology and Toxicology at the University of Mississippi Medical Center, Jackson, MS., USA.

2013 -: PHARM 790: Special Topics (Cell Signaling) in the Department of Pharmacology and Toxicology at the University of Mississippi Medical Center, Jackson, MS., USA.

2013 -: PHARM. 792: Research in Pharmacology and Toxicology in the Department of Pharmacology and Toxicology at the University of Mississippi Medical Center, Jackson, MS., USA.

2013 -: PHARM. 798: Dissertation and Dissertation Research in the Department of Pharmacology and Toxicology at the University of Mississippi Medical Center, Jackson, MS., USA.

2013 -: ANAT 740: Readings in Contemporary Anatomy in the Department of Neurobiology and Anatomical Sciences at the University of Mississippi Medical Center, Jackson, MS., USA.

2014 -: Graduate Course Director for PHARM. 723: Mechanisms of Drug Actions in the Department of Pharmacology and Toxicology at the University of Mississippi Medical Center, Jackson, MS., USA.

2014 -: PHARM 790: Special Topics (Cell Signaling) in the Department of Pharmacology and Toxicology at the University of Mississippi Medical Center, Jackson, MS., USA.

2014 -: PHARM. 792: Research in Pharmacology and Toxicology in the Department of Pharmacology and Toxicology at the University of Mississippi Medical Center, Jackson, MS., USA.

2014 -: PHARM. 798: Dissertation and Dissertation Research in the Department of Pharmacology and Toxicology at the University of Mississippi Medical Center, Jackson, MS., USA.

2014 -: ANAT 740: Readings in Contemporary Anatomy in the Department of Neurobiology and Anatomical Sciences at the University of Mississippi Medical Center, Jackson, MS., USA.

2015 -: Graduate Course Director for PHARM. 723: Mechanisms of Drug Actions in the Department of Pharmacology and Toxicology at the University of Mississippi Medical Center, Jackson, MS., USA.

2015 -: PHARM 790: Special Topics (Cell Signaling) in the Department of Pharmacology and Toxicology at the University of Mississippi Medical Center, Jackson, MS., USA.

2015 -: PHARM. 792: Research in Pharmacology and Toxicology in the Department of Pharmacology and Toxicology at the University of Mississippi Medical Center, Jackson, MS., USA.

2015 -: PHARM. 798: Dissertation and Dissertation Research in the Department of Pharmacology and Toxicology at the University of Mississippi Medical Center, Jackson, MS., USA.

2015 -: ANAT 740: Readings in Contemporary Anatomy in the Department of Neurobiology and Anatomical Sciences at the University of Mississippi Medical Center, Jackson, MS., USA.

2016 -: Teach PHARM. 723: Mechanisms of Drug Actions in the Department of Pharmacology and Toxicology at the University of Mississippi Medical Center, Jackson, MS., USA.

2016 -: PHARM 790: Special Topics (Cell Signaling) in the Department of Pharmacology and Toxicology at the University of Mississippi Medical Center, Jackson, MS., USA.

2016 -: PHARM. 792: Research in Pharmacology and Toxicology in the Department of Pharmacology and Toxicology at the University of Mississippi Medical Center, Jackson, MS., USA.

2016 -: PHARM. 798: Dissertation and Dissertation Research in the Department of Pharmacology and Toxicology at the University of Mississippi Medical Center, Jackson, MS., USA.

2016 -: ANAT. 740: Readings in Contemporary Anatomy in the Department of Neurobiology and Anatomical Sciences at the University of Mississippi Medical Center, Jackson, MS., USA.

2017 -: PHARM. 723: Mechanisms of Drug Actions in the Department of Pharmacology and Toxicology at the University of Mississippi Medical Center, Jackson, MS., USA.

2017 -: PHARM. 790: Special Topics (Cell Signaling) in the Department of Pharmacology and Toxicology at the University of Mississippi Medical Center, Jackson, MS., USA.

2017 -: PHARM. 792: Research in Pharmacology and Toxicology in the Department of Pharmacology and Toxicology at the University of Mississippi Medical Center, Jackson, MS., USA.

2017 -: PHARM. 798: Dissertation and Dissertation Research in the Department of Pharmacology and Toxicology at the University of Mississippi Medical Center, Jackson, MS., USA.

2017 -: ANAT. 740: Readings in Contemporary Anatomy in the Department of Neurobiology and Anatomical Sciences at the University of Mississippi Medical Center, Jackson, MS., USA.

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