Curriculum Vitae

September 11, 2017

Michael Xi Zhu, PhD.

PRESENT TITLE: Professor of Integrative Biology and Pharmacology The University of Texas Health Science Center at Houston

- ADDRESS: The University of Texas Medical School at Houston Department of Integrative Biology and Pharmacology, 6431 Fannin Street, MSB 4.128 Houston, Texas 77030 Tel#: 713-500-7505 (Office), 713-500-6349 (Lab) Fax#: 713-500-7444 e-mail: michael.x.zhu@uth.tmc.edu
- BIRTHDATE: January 28, 1963

CITIZENSHIP: USA

UNDERGRADUATE EDUCATION:

B.S. Biology, 1984 Fudan University Shanghai, China

GRADUATE EDUCATION:

M.S. Biochemistry, 1988 University of Houston Houston, Texas, U.S.A.

Ph.D. Biochemistry, 1991 University of Houston Houston, Texas, U.S.A.

POSTGRADUATE TRAINING:

Postdoctoral Training in Molecular and Cell Biology, 1991-1994, Baylor College of Medicine Houston, Texas, U.S.A.

ACADEMIC APPOINTMENTS:

- 2010-present Professor, Department of Integrative Biology and Pharmacology, The University of Texas Medical School at Houston, Houston, Texas
- 2003-2010 Associate Professor, Department of Neuroscience and Center for Molecular Neurobiology, Ohio State University, Columbus, Ohio
- 2000-2003 Assistant Professor, Department of Neuroscience and Neurobiotechnology Center, Ohio State University, Columbus, Ohio.

 1994-1997 Assistant Researcher, Signal Transduction Laboratory, Department of Anesthesiology, University of California at Los Angeles, Los Angeles, California. 1991-1994 Postdoctoral Fellow/Research Associate, Department of Cell Biology, Baylor College of Medicine, Houston, Texas (with Dr. Lutz Birnbaumer). 1991 Postdoctoral Fellow, Department of Biochemical and Biophysical Sciences, Universit Houston, Houston, Texas (with Dr. Joseph Eichberg). 	1997-2000	Assistant Professor, Department of Pharmacology and Neurobiotechnology Center, Ohio State University, Columbus, Ohio.
 1991-1994 Postdoctoral Fellow/Research Associate, Department of Cell Biology, Baylor College of Medicine, Houston, Texas (with Dr. Lutz Birnbaumer). 1991 Postdoctoral Fellow, Department of Biochemical and Biophysical Sciences, Universit Houston, Houston, Texas (with Dr. Joseph Eichberg). 	1994-1997	Assistant Researcher, Signal Transduction Laboratory, Department of Anesthesiology, University of California at Los Angeles, Los Angeles, California.
1991 Postdoctoral Fellow, Department of Biochemical and Biophysical Sciences, Universit Houston, Houston, Texas (with Dr. Joseph Eichberg).	1991-1994	Postdoctoral Fellow/Research Associate, Department of Cell Biology, Baylor College of Medicine, Houston, Texas (with Dr. Lutz Birnbaumer).
	1991	Postdoctoral Fellow, Department of Biochemical and Biophysical Sciences, University of Houston, Houston, Texas (with Dr. Joseph Eichberg).

ADMINISTRATIVE AND HOSPITAL APPOINTMENTS:

2007-2010 Co-director, Biophysics Graduate Program, Ohio State University, Columbus, Ohio

OTHER PROFESSIONAL EXPERIENCE:

2008-2010 Adjoined Professor, Department of Biochemistry, Ohio State University, Columbus, Ohio

PROFESSIONAL ORGANIZATIONS:

Regional

The Society of Chinese Bioscientists in America (SCBA) Texas Chapter, 2010 – Present Serving as Treasurer of SCBA-Texas Chapter for 2014-2015.

National

The Biophysical Society, 1996 - Present American Society for Pharmacology and Experimental Therapeutics, 2011 – present American Society for Biochemistry and Molecular Biology, 2013 - present

HONORS AND AWARDS:

Distinguished Achievement Award, The Organization Committee of the 11th Symposium on Calcium Signaling in China, The Biophysical Society of China, 2016

Dean's Teaching Excellence Award, 2014-2015, The University of Texas Medical School in Houston.

Dr. Elizabeth L. Gross Award for Faculty Excellence, 2010, Biophysics Program, The Ohio State University

Nichols Institute New Investigator Award, 1993.

American Society for Neurochemistry Travel Award, 1990.

Outstanding Research Award for Excellence in Teaching in the Department of Biochemical & Biophysical Sciences, University of Houston, Houston, TX, 1988.

CUSBEA (China-U.S. Biochemistry Examination and Admission) fellowship for graduate studies, 1984.

EDITORIAL POSITIONS:

<u>Associate Editor</u>, Journal of Cellular Physiology, 2006- present <u>Editorial Board Member</u>, Pflügers Archiv - European Journal of Physiology, 2010-present <u>Editorial Board Member</u>, Acta Biophysica Sinica, 2011-2015 <u>Editorial Board Member</u>, Messenger, 2012-present <u>Editorial Board Member</u>, Molecular Pharmacology, 2012-present <u>Editorial Board Member</u>, Biophysics Reports, 2015-present Ad Hoc Reviewer for Manuscripts Submitted to: **ACS Chemical Neuroscience** Acta Pharmacologica Sinica Advances in Experimental Medicine and Biology American Journal of Human Genetics American Journal of Physiology Assay and Drug Development Technologies Biochemistry Biophysical Journal British Journal of Pharmacology Cancer letters Cancer Research Cardiovascular Research Cell Calcium Cell Metabolism Cell Reports Cellular and Molecular Life Sciences Circulation Research Current Biology **Developmental Cell** eLife **EMBO Molecular Medicine** EMBO Journal **EMBO** Reports Expert Reviews in Molecular Medicine (ERMM) FASAB J **FEBS** Letters Fitoterapia Human Molecular Genetics International Journal of Biological Macromolecules Journal of Biological Chemistry Journal of Cardiovascular Medicine Journal of Cell Biology Journal of Cellular Biochemistry Journal of Cellular Physiology Journal of Cellular and Molecular Medicine Journal of General Physiology Journal of Inflammation Journal of Medicinal Chemistry Journal of Membrane Biology Journal of Molecular Cell Biology Journal of Neurochemistry Journal of Neurophysiology Journal of Neuroscience Journal of Physiology (London) Journal of Proteomic Res Molecular Endocrinology Molecular Neurobiology Molecular Pain Molecular Pharmacology Nature Nature Cell Biology

Nature Communications Nature Reviews Neuroscience Neurochemical Research Neuropharmacology Neuroscience Bulletin Oncogene Pflugers Archiv European Journal of Physiology Pharmacology Research & Perspectives Physiological Review **PLoSONE PLoSGenetics** Proceedings of National Academy of Sciences, U.S.A. Protein and Cell Science Science Bulletin Science Signaling Science China Life Sciences Science Translational Medicine Scientific Reports The Canadian Journal of Physiology and Pharmacology Trends in Biotechnology Vision Research

SERVICE ON NATIONAL GRANT REVIEW PANELS, STUDY SECTIONS, COMMITTEES: Local:

Review for Pilot/Feasibility projects of Texas Medical Center Digestive Diseases (DDC), Dec. 2011.

Review for 2013 Dunn Collaborative Research Award, Gulf Coast Consortia community, Jun 2013

Review for 2016 Dunn Collaborative Events Award, Gulf Coast Consortia community, 2016

National:

National Institutes of Health (NIH) Study section MIST, Regular member, 2010-2014

National Institute of Dental and Craniofacial Research (NIDCR) Board of Scientific Counselors (BSC) meeting, Ad-hoc reviewer, Nov, 2012, Jun, 2017

National Institutes of Health (NIH) Study section PTHE, Ad-hoc Oct. 2013

National Institutes of Health (NIH) Study section MIST, Ad-hoc Feb. 2010, Jun 2015

National Institutes of Health (NIH) Study section BPNS, Ad-hoc Oct. 2009

- National Institutes of Health (NIH) Study section NTRC, Ad-hoc Oct. 2004, Jun. 2005, Sep. 2015, Feb. 2016
- National Institutes of Health (NIH) Study section ZRG1 MDCN-C 02 Ad-hoc Nov. 2005, Nov. 2006, Nov. 2007, Jun. 2008,
- National Institutes of Health (NIH) Study section ZRG1 MDCN-C (04) S Ad-hoc Apr. 2016

National Institutes of Health (NIH) Study section ZGM1 TWD-9 (SC), Jul. 2015

NIH Special Emphasis Panel/Scientific Review Group 2009/01 HLBP, Sep. 2008, Apr. 2009

NIH Study section ZRG1 MDCN-B 91 Ad-hoc Jul. 2006

NIH Study section ZRG1 MDCN-G 91 Ad-hoc Oct. 2007

- NIH Study section Special Emphasis Panel/Scientific Review Group 2009/10 ZRG1 DKUS-A (58), Mail review, June, 2009
- NIH Study section Special Emphasis Panel/Scientific Review Group 2009/10 ZRG1 MDCN-A (58) R, Mail review, June, 2009

National Science Foundation (NSF): 2001, 2004, 2008

Medical Research Program (PRMRP) of the Department of Defense Congressionally Directed Medical Research Programs (CDMRP), Discovery Award Inflammatory Bowel Diseases Panel (DIS-IBD) peer review panel, 2016

International:

Anniversary Fund 2004

Austrian Science Fund 2005

Competitive Earmarked Research Grant of Hong Kong 2007, 2008, 2010

Council for Earth and Life Sciences, Netherlands Organization for Scientific Research, 2003

Flemish Science Foundation (Belgium), 2008

Israel Science Foundation, 2002

Medical Research Council, UK, 2007, 2012, 2013

Natural Science Foundation of China, 2006, 2007, 2008, 2012

Netherlands Organization for Scientific Research (NWO), review for candidate of Dutch Spinoza Prize, 2013

Schering Stiftung Young Investigator Fund (Germany), 2017

- The Research Council of K.U. Leuven on evaluation of professorship (Belgium), 2007
- The Research Council of K.U. Leuven grant review (Belgium), 2013

Research Foundation Flanders (Fonds Wetenschappelijk Onderzoek - Vlaanderen, FWO, Belgium), 2012 (4), 2015 (2), 2016 (2)

Research Grant Council of Hong Kong, 2013, 2015, 2016, 2017

Wellcome Trust grant review, UK, 2009

U.S. Civilian Research and Development Foundation (CRDF)

SERVICE ON THE UNIVERSITY OF TEXAS HEALTH SCIENCE CENTER AT HOUSTON COMMITTEES:

Chair: review committee for the 2017 UTHealth GSBS Dissertation Award, 2017 Chair or Committee member, GSBS Student Scholarship Committee, Oct 2017 – Sep 2018

SERVICE ON THE UNIVERSITY OF TEXAS MEDICAL SCHOOL AT HOUSTON COMMITTEES

Curriculum revision committee for Foundation Weeks 6-7, 2014

DEPARTMENTAL COMMITTEES:

Six-Year Faculty Review Committee, 2012

SERVICE TO THE COMMUNITY (Internal and external to UT)

- Lectures to first-year graduate students in Shanghai Institute of Biological Sciences, Shanghai, and Tsinghua/Peking University, Beijing, China, Course name, Bio2000, Diffusible and Electrical Signaling Factors, (Autumn, 2003-2016)
- Proposer and co-organizer: the 1st International Conference on Ion channels in Technology and Drug Discovery, Dalian, China, 2007
- Vice chair and co-organizer: the 2nd International Conference on Ion channels in Technology and Drug Discovery, Harbin, China, 2009
- Oversea chair and co-organizer: the 2010 symposium for Chinese Neuroscientists Worldwide, Nanchang, China, 2010
- Scientific committee chair and co-organizer: the 17th International Symposium on Ca²⁺-Binding Proteins and Ca²⁺ Function in Health and Disease, Beijing, China, 2011
- Chair and co-organizer: the 3rd International Ion Channel Conference-Ion Channels: Structure, Function & Therapeutics, Shanghai, China, 2011.
- Oversea chair and co-organizer, the 9th Chinese Symposium on Calcium Signaling, Huangshan, China, 2012.
- Proposer and co-organizer: International Symposium on Receptors, G Proteins and Integration of Ca²⁺ Signaling in the Cardiovascular System, MDC Communications Center, Berlin-Buch, Germany, 2014.
- Co-organizer, China-US biomedical symposium on oncology and the 3rd SCBA-Texas international conference, Shijiazhuang, China, 2014
- Served as Treasurer of The Society of Chinese Bioscientists in America (SCBA) Texas Chapter for 2014-2015.
- Taught a 16 hr Summer English course on "From Cell Signaling to way of Biomedical Research and Drug Discovery" for the International Summer Course Program (ISCP) at China Pharmaceutical University, July 11-15, 2016.

Organization Committee member, the 11th Symposium on Calcium Signaling in China, Zunyi, China, 2016.

Proposed and organized the Gulf Coast Consortium Symposium on Membrane Biophysics, on May 6, 2016

Co-Chair, Gordon Research Conference on Organellar Channels and Transporters, Mount Snow Resort, West Dover, Vermont, USA, Jul 31-Aug 4, 2017.

SPONSORSHIP OF CANDIDATES FOR POSTGRADUATE DEGREE:

- 1. Yufang Tang, 9/1998-05/2002, Graduate student, MCDB, The Ohio State University.
- 2. Craig K. Colton, 7/2001-11/2006, Graduate student, OSBP, The Ohio State University
- 3. Chunbo Wang, 1/2003-6/2006, Graduate student, MCDB, The Ohio State University
- 4. Rui Xiao, 01/2004-01/2009, Graduate Student, Biophysics program, The Ohio State University
- 5. Emilia Iscru, 03/2004-07/2008, Graduate Student, Biophysics program, The Ohio State University
- Dhananjay Thakur, 10/2009-06/2010, Graduate Student, Biophysics program, The Ohio State University; 07/2010-07/2015, Graduate Student, Graduate School of Biomedical Sciences at Houston, The University of Texas
- 7. Yu Huang, 8/2011-07/2017, Graduate Student, Graduate School of Biomedical Sciences at Houston, The University of Texas

8. Jian Xiong, 8/2012-present, Graduate Student, Graduate School of Biomedical Sciences at Houston, The University of Texas.

SPONSORSHIP OF POSTDOCTORAL FELLOWS:

- 1. Zhangguo Chen, 12/1997-8/1999, Postdoctoral research associate, The Ohio State University.
- 2. Zongming Zhang, 1/1998-01/2000, Postdoctoral research associate, The Ohio State University.
- 3, Jisen Tang, 7/1999-6/2004, 09/2006-06/2007, Postdoctoral research associate, The Ohio State University
- 3. Yakang Lin, 10/2000-04/02, Senior research associate, The Ohio State University
- 4. Mariko Kinoshita, 4/2002-03/04, Postdoctoral researcher, The Ohio State University
- 5. Jin-bin Tian 09/2005-06/2010, Research Scientist, The Ohio State University; 10/2010-present, Research Assistant Professor, UTHSC-Houston
- 6. Xuemei Hao, 9/2006-2/2008, Postdoctoral researcher, The Ohio State University
- 7. Yingmin Zhu, 9/2008-06/2010, Postdoctoral researcher, The Ohio State University; Yingmin Zhu, 7/2010-present, Research Associate, UTHSC-Houston
- 8. Alexis Bavencoffe, 6/2010-3/2013, Postdoctoral researcher, UTHSC-Houston
- 9. Manjira Ghosh-Kumar, 3/2011-08/2011, Postdoctoral researcher, UTHSC-Houston
- 10. Yungang Lu, 4/2011-4/2014, Postdoctoral researcher, UTHSC-Houston
- 11. Pu Yang, 5/2011-5/2013, Postdoctoral researcher, UTHSC-Houston
- 12. Xinghua Feng, 6/2011-06/2015, Postdoctoral researcher, UTHSC-Houston
- 13. Bing Shen, 11/2011-1/2013, Postdoctoral researcher, UTHSC-Houston
- 14. Jiang Wu, 9/2012-7/2013, Postdoctoral researcher, UTHSC-Houston
- 15. Jaepyo Jeon, 5/2013-present, Postdoctoral researcher, UTHSC-Houston
- 16. Dhananjay Thakur, 07/2015-12/2015, Postdoctoral researcher, UTHSC-Houston
- 17. Qiaochu Wang, 09/2016-present, , Postdoctoral researcher, UTHSC-Houston

CURRENT TEACHING RESPONSIBILITIES:

Courses to medical students:

- MS PHYSIOLOGY, Membranes II-IV: Osmosis, Solute and Water transport across membranes/ Transepithelial Transport, Pathophysiology Correlate I: Fluid volumes and Capillary Exchange (Spring 2011, Spring 2012, Spring 2013, Spring 2014, Spring 2015, Spring 2016); GI PHYSIOLOGY, Digestion & Absorption I, Digestion & Absorption II, Cardiovascular and Gastrointestinal correlates (Spring 2014, Spring 2015, Spring 2016), The University of Texas Health Science Center at Houston
 - MS PHARMACOLOGY, General Anesthetics (2 hrs, Autumn 2015, Autumn 2016), The University of Texas Health Science Center at Houston
 - Medical School New Curriculum Foundation week 9, 4 lectures: Theme Introduction: Cystic Fibrosis; Membranes III: Osmosis; Membrane IV: Capillary Exchange; Membrane V: Transepithelial Transport (Autumn 2016), The University of Texas Health Science Center at Houston
 - Medical School New Curriculum Foundation week 2, 3 lectures: Membranes III: Osmosis; Membrane IV: Capillary Exchange; Membrane V: Transepithelial Transport (Autumn 2017), McGovern Medical School, The University of Texas Health Science Center at Houston

- Medical School New Curriculum Gastrointestinal (GI) Module, week 3, 1 lecture: Digestion; week 4, 1 lecture Absorption (Autumn 2017), McGovern Medical School, The University of Texas Health Science Center at Houston
- Medical School New Curriculum Nervous System and Behavior (NSB) Module, week 1, 1 lecture: General Anesthetics (Autumn 2017), McGovern Medical School, The University of Texas Health Science Center at Houston

Courses to dental students:

- DENF 1541 Physiology I, Membranes III: Osmosis, and how solutes and water can cross cells and capillaries, Problem Solving Session, Fluid volumes and Capillary Exchange, The University of Texas Health Science Center at Houston (Fall 2010, 2011)
- DENF 1541 Physiology I, Membranes II: Generation of the Cellular Membrane Potential, The University of Texas Health Science Center at Houston (Fall 2011)

Courses to graduate students:

- Molecular Basis of Cell Signaling, Overview of Ion Channels: Basic Functions (Spring, 2017), Biophysical Properties of Ion Channels (Spring 2013, Spring 2014, Spring 2015, Spring 2017), Regulation of ion channels: 2nd messengers, kinases, ions and G proteins (Spring 2011, Spring 2012, Spring 2013, Spring 2014, Spring 2015, Spring 2017), GSBS course, The University of Texas Health Science Center at Houston
- Seminar in Cell Signaling (GS04 1751) Thermoregulation (Spring 2017) GSBS course, The University of Texas Health Science Center at Houston

CURRENT GRANT SUPPORT:

Principal Investigator: NIH grant R01 NS102452-01 "Molecular mechanism of acidotoxicity to neurons" 06/15/17 – 04/30/22, Total Direct Cost: \$1,090,000

- Principal Investigator: NIH grant R01 NS092377 "Excitatory neurotransmission by PTX-sensitive G proteins" 02/01/15 – 01/31/20, Total Direct Cost: \$1,090,000
- Principal Investigator: NIH grant R13 TR002022-01 "2017 Organellar Channels and Transporters Gordon Research Conference" 04/01/2017 – 03/31/2018, Total Direct Cost: \$20,000
- Principal Investigator: National Science Foundation grant MCB-1719636 "2017 GRC on Organellar Channels and Transporters" 04/01/2017 – 09/01/2017, Total Direct Cost \$10,000
- Sponsor: American Heart Association Postdoctoral Fellowship 17POST33661282 "Molecular mechanism of TRPC4 regulation in endothelium permeability" 07/01/17-06/30/19, Total Cost: \$103,308 (PI: Qiaochu Wang)

PAST GRANT SUPPORT:

Principal Investigator: NIH grant RO1 GM54235 "Human *trp* Genes in Relation to Ca²⁺ Entry Channels" 2/1/97-1/31/02, Total Direct Cost: \$483,000.

Principal Investigator: University Seed Grant

"A Transgenic Approach to Evaluate the Functional Role of Trp Channels in Cerebellar Purkinje Cells" 1/1/00-12/31/00, Total Direct Cost: \$10,000.

- Principal Investigator: NIH grant RO1 NS42183 "Mechanism of Conformational Coupling" 8/1/01-7/31/05, Total Direct Cost: \$750,000.
- Co-investigator, director of Electrophysiology Core: NIH grant P30 NS045758-01 "Ohio State Neuroscience Center Core" John Oberdick (PI) 09/01/04-08/30/09, Total Direct Cost: \$2,379,084
- Principal Investigator: NIH grant R21 NS056942 "High throughput screening of ligands of TRP channels" 07/1/06-06/30/10, Total Direct Cost: \$173,750.
- Principal Investigator: American Heart Association Grant-in-Aid 0755277B "The role of PTX-sensitive G proteins in the activation of TRPC5" 07/1/07-06/30/09, Total Direct Cost: \$110,000.
- Principal Investigator: NIH grant RO1 DK081654 "Molecular mechanism of regulation of mI(CAT) in intestinal smooth muscle cells" 2/1/09-1/31/14, Total Direct Cost: \$915,000.
- Principal Investigator: NIH grant RO1 GM081658 "Molecular characterization of organelle channels" 9/1/09-8/30/14, Total Direct Cost: \$830,000.
- Principal Investigator: NIH grant RO1 GM092759 "The role of two-pore channels in integrative calcium signaling" 9/30/10-8/31/14, Total Direct Cost: \$780,000.
- Co-investigator: NIH SBIR grant R43 DA031516 01 PI (J. M. Herz) "Analgesics Targeting TRPA1 for Treatment of Chronic Pain" 8/1/11-7/31/13, Total Direct Cost: \$150,000.
- Sponsor: American Heart Association Predoctoral Fellowship SouthWest Affiliate 13PRE17200004 "Regulation of TRPC4/5 channels in vascular smooth muscle cells via synergistic GPCR signaling" 7/1/13-06/30/15, Total Cost: \$50,000 (PI: Dhananjay P. Thakur)
 - 7/1/13-06/30/15, Total Cost: \$50,000 (PI: Dhananjay P. Thakur)
- Principal Investigator: Service Contract with Procter & Gamble "Electrophysiological examination of select Personal Health Care actives on TRPA1" 02/15/15-01/31/16, Total Direct Cost: \$58,462.00
- Principal Investigator: 2015 John S. Dunn Foundation Collaborative Event Award "GCC Symposium on Membrane Biology", held on May 6, 2016 01/01/16-06/30/16, Total Award amount of \$8,000
- Principal Investigator: American Heart Association Grant-in-Aid SouthWest Affiliate 15GRNT23040032 "Mechanism of ASIC1a-mediated acidosis brain damage in stroke" 01/01/15-12/31/16, Total Direct Cost: \$126,000

Sponsor: American Heart Association Postdoctoral Fellowship SouthWest Affiliate 15POST22630008 "The role of TRPC channels in ischemic nerve damage" 01/01/15-12/31/16, Total Cost: \$95,704 (PI: Jaepyo Jeon)

PUBLICATIONS:

A. Abstracts (*presented).

- 1. Eichberg, J., Berti-Mattera, L.N., Day, S-F., Lowery, J. and Zhu, X. Basal and Receptor-Stimulated Metabolism of Phosphoinositides in Peripheral Nerve Myelin. J. Neurochem. 52, Suppl. S24A, 1988*
- 2. Eichberg, J. and Zhu, X. A *myo*-Inositol Pool Needed for Phosphatidylinositol Synthesis Is Depleted in Diabetic Nerve. Transact. Amer. Soc. Neurochem. 20, pp 102, no. 34, 1989*
- 3. Zhu, X., Nguyen, P. and Eichberg, J. Effects of Elevated Glucose Concentration on CDP-Diacylglycerol Accumulation in Rat Peripheral Nerve. Proc. Soc. Exp. Biol. Med. 193, 3, 1990*
- **4.** Zhu, X. and Eichberg, J. Diacylglycerol Content in Normal and Diabetic Nerve. Transact. Amer. Soc. Neurochem. 21, pp 142, no. 111, 1990 *
- 5. Eichberg, J. and Zhu, X. Alterations in Diacylglycerol Levels and Molecular Species in Experimental Diabetic Neuropathy. Diabetes 39, Suppl. 1, pp 144A, no. 574, 1990*
- 6. Eichberg, J., Abe, S., Berti-Mattera, L.N., Eggen, B., Lowery, J. and Zhu, X. Phospholipid Metabolism and Cell Signaling in PNS Myelin. Transact. Amer. Soc. Neurochem. 22, pp 263, 1991*
- Eichberg, J., Abe, S., Berti-Mattera, L.N., Day, N.S., Eggen, B. and Zhu, X. Second Messenger Generation in Peripheral Nerve and Its Alteration in Experimental Diabetes. J. Neurochem. 57, Suppl. S9D, 1991*
- Yorek, M., Dunlap, J., Stefani, M., Davidson, E., Zhu, X. and Eichberg, J. L-Fucose Alters *myo*-Inositol Accumulation, Diacylglycerol Content and Phosphatidylinositol Hydrolysis in Cultured Neuroblastoma Cells. Diabetes 41, Suppl. 1, pp 138A, no. 490, 1992*
- 9. Bianchi, R., Zhu, X., Bubba, F., Triban, C., Fiori, M.G. and Eichberg, J. Gangliosides Restore Na⁺, K⁺-ATPase Deficit in Diabetic Nerve without Affecting Abnormal Diacylglycerol Composition. Trans. Amer. Soc. Neurochem. 23, 132, 1992*
- 10. Hu, Y., Zhu, X., Birnbaumer, L. and Schilling, W. P. Expression of a Novel Ca²⁺ Influx Pathway in *Sf*9 Insect Cells Following Infection with Recombinant Baculovirus Containing cDNA for the Transient Receptor Potential-like (*trpl*) Protein of *Drosophila*. Biophys. J. 66, A424, Th-Pos381, 1994*
- 11. Zhu, X., Gilbert, S. Birnbaumer, L. and Birnbaumer, M. Dual Signaling Capacity of G_s-Coupled Receptors Appears to Be Common Rather Than Exceptional and Depends on Receptor Density. 75th Annual Meeting for The Endocrine Society, pp510, no. 1870, 1993*
- **12**. Zhu, X., Chu, P.B., and Birnbaumer, L. Identification of a Human Homolog of the *Drosophila trp* Gene. FASEB J. 9 (6) A1381, no 728, 1995*
- 13. Zhu, X. and Birnbaumer, L. Stimulation of Phospholipase C by G_s- or G_i-Coupled Receptors Mediated Through Gα_q, Gα₁₆, or Gβγ. 77th Annual Meeting for The Endocrine Society, pp393, no. P2-409, 1995*
- **14**. Zhu, X., Peyton, M., Qin, N., and Birnbaumer, L., Identification of A Human *trp* Homolog Expressed Predominantly in Brain. Biophysical J. 70, A316, Tu-Pos312, 1996*

- 15. Zhu, X., Jiang, M., Boulay, G., Peyton, M., Jenkins, N., and Birnbaumer, L. Mammalian Trp Homologues Involved in Capacitative Ca²⁺ Entry. International Symposium on Molecular Mechanism of Intracellular Signalling, Tokyo, Japan, 1997*
- 16. Zhu, X., Hurst, R., Stefani, E. and Birnbaumer, L. Mammalian Trp Proteins Involved in Agonist-Activated Ca²⁺ Entry. 70th Annual Meeting of Japanese Biochemistry Society, SEIKAGAKU, 69 (7), 499, S197, 1997*
- 17. Kiselyov, K., Xu, X., Kuo, T., Pessah, I., Mozhayeva, G., Zhu, X., Birnbaumer, L., Muallem, S. Functional Interaction Between Htrp3 and IP3 Receptor. J. Gen. Physiol. 112: 34A, 1998*
- 18. Groschner, K., Hingel, S., Lintschinger, B., Völker, C., Zhu, X., Schmidt, K., and Schreibmayer, W. Expression of A Putative Store-Operated Ca²⁺ Channel (Htrp3) in Human Vascular Endothelial and Smooth Muscle Cells. N-S Arch. Pharmacol. 357: (4) R68 Suppl. S, 1998*
- **19.** Birnbaumer, L., Zhu, X., Peyton, M., Boulay, G., Jiang, M., Brown, D., and Vannier, B. Trp and the molecular basis of capacitative Ca²⁺ entry. N-S Arch. Pharmacol. 358: (1) R377 Suppl. 2, 1998*
- **20.** Zhang, Z. and Zhu, M. X. Appearance of An Inwardly Rectifying Potassium Current in Stable HEK 293 Cell Lines Expressing Murine Trp4. Biophysical J. 76, A210, M-Pos330, 1998*
- 21. Groschner, K., Lintschinger, B., Balzer, M., Hingel, S., Zhu, X., Romanin, C., and Schreibmayer, W. Inhibition of Endogenous, Non-Selective Cation Channels in Endothelial Cells by Expression of A N-Terminal Fragment of hTrp3. Biophysical J. 76, A146, M-AH-H2. 1999*
- **22.** Zhu, M.X. and Zhang, Z. Electrophysiological Analysis of Trp3 Channel Activated by A Trp Binding Domain of IP₃ Receptor. Biophys. J. 78, 193A, 1138-Pos, 2000*
- 23. Balzer, M., Lintschinger, B., Romanin, C., Zhu, M.X., and Groschner, K. Functional Interaction Between Trp1 and Trp3 Proteins in the HEK293 Expression System. Biophys. J. 78, 192A, 1131-Pos, 2000*
- 24. Groschner, K., Lintschinger, B, Romanin, C, Schreibmayer, W, Zhu, M. X., and Balzer, M. Oxidative Stress Activates Trp3 Cation Channels. Biophys. J. 78, 192A, 1130-Pos, 2000*
- **25.** Bennett, B.D., Zhu, M.X., Hruska, K.A. Trp channels in osteoclast calcium sensing. J. Bone Miner. Res. 15, S517 Suppl. 1, 2000*
- 26. Baskaran, T., Romanin, C, Zhu, M. X., and Groschner, K. Differential Modulation of Capacitative and TRP3-Mediated Ca²⁺ entry into HEK293 cells by Nitric Acid Donors. Biophys. J. 80, 202A, 795-Pos, 2001*
- **27.** Pan, Z., Shin, D., Damron, D., Zhu, M. X., Takeshima, H., and Ma, J. Ryanodine Receptor-Mediated Activation of Store-Operated Calcium Channel (SOC). Biophys. J. 80, 617A, 2784-Pos, 2001*
- 28. Cioffi, D., Zhu, M., Goodman, S. R., and Stevens, T. Association of Trp-1 and-4 store operated Ca²⁺ entry channels with the spectrin membrane skeleton in endothelium. FASEB J. 15, A161, Part 1, 2001*
- **29.** Bennett, B.D., Zhu, M.X., Tustison, K., Alvarez, U., Sugatani, T., and Hruska, K.A. The role of Trp channels in osteoclast calcium sensing. J. BONE MINER. RES. 16: S385 Suppl. 1, 2001*
- **30**. Zhu, M.X., Tang, J., and Lin, Y. Regulation of Trp channel activity by IP₃ receptors and calmodulin. Biophys. J. 82, 21A Part 2, 2002*
- **31**. Tang, Y., Tang, J., Lin, Y., and Zhu, M.X. Stimulation of phospholipase C increases the association of Trp4 with actin and its distribution on cell surface. Biophys. J. 82, 623A, Part 2, 2002*
- **32**. Moccagatta, L., Treves, S., Ronjat, M., Mikoshiba, K., Zhu, X., Zorzato, F. Junctate interacts with the InsP₃R and modulates Ca²⁺entry. Biophys. J. 82, 115A, Part 2, 2002*
- **33**. Tang, J., Tang, Y., Lin, Y. and **Zhu, M. X**. Mechanism of association of TRPC4 with actin cytoskeleton. Biophys. J. 84, 551A, Part 2, 2003*

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- 123. Thakur, D.P., Tian, J., Jeon, J, Xiong, J., Huang, Y., Flockerzi, V., Zhu, M.X. Critical roles of G_{i/o} proteins and phospholipase C-δ1 in the activation of receptor-operated TRPC4 channels. Proc Natl Acad Sci U S A. 113(4):1092-1097, 2016. doi: 10.1073/pnas.1522294113. PMCID: PMC4743816
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- **125.** Liu, M.G., Li, H.S., Li, W.G., Wu, Y.J., Deng, S., Huang, C., Maximyuk, O., Sukach, V., Krishtal, O., **Zhu, M.X.**, and Xu, T.L. Acid-sensing ion channel 1a contributes to hippocampal LTP inducibility

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- 129. Zhang, H., Wang, Y., Zhu, A., Huang, D., Deng, D., Cheng, J., Zhu, M. X., and Li, Y. SUMO-specific protease 1 protects neurons from apoptotic death during transient brain ischemia/reperfusion. Cell Death Dis. 7(11):e2484, 2016. doi: 10.1038/cddis.2016.290. PMCID: PMC5260881
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- **133**. Dryn, D.O., Gryshchenko, A.V., Bolton, T.B., **Zhu, M.X.**, Zholos, A.V. Species-Related Differences in the Properties of TRPC4 Channels in Intestinal Myocytes of Rodents. **Neurophysiology** Nov., 2016. doi:10.1007/s11062-016-9592-8.
- 134. Li, Y., Hu, H., Tian, J.B., Zhu, M.X., and O'Neil, R. Dynamic coupling between TRPV4 and Caactivated SK1/3 and IK1 K channels plays a critical role in regulating the K secretory BK channel in collecting duct cells. Am J Physiol Renal Physiol. 312(6):F1081-F1089, 2017. doi: 10.1152/ajprenal.00037.2017. PMCID: PMC5495881
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Invited Articles (Reviews, Editorials, etc.) in Journals

- 1. Eichberg, J., Bianchi, R., Fiori, M.G., Triban, C., **Zhu, X.** and LoPachin, R.M. Diabetic Neuropathy and the Pharmacology of Gangliosides. **Diab. Med.** 10 Suppl 2. 98S-102S, 1993
- 2. Eichberg, J., Abe, S., Berti-Mattera, L.N., Day, N.S., Lowery, J.M., Zhu, X. and Peterson, R.G. Inositol and Phospholipid Metabolism in Diabetic Nerve. Diab. Med. 10 Suppl 2. 16S-20S, 1993
- Birnbaumer, L., Zhu, X., Jiang, M., Boulay, G., Peyton, M., Vannier, B., Brown, D., Platano, D., Sadeghi, H., Stefani, E. and Birnbaumer, M. On the Molecular Basis and Regulation of Cellular Capacitative Cacium Entry: Roles for Trp Proteins. Proc. Natl. Acad. Sci. USA 93, 15195-15202, 1996
- 4. Zhu, X. and Birnbaumer, L. Calcium Channels Formed by Mammalian TRP Homologues. NIPS, 13, 211-217, 1998
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- Montell, C., Birnbaumer, L., Flockerzi, V., Bindels, R.J., Bruford, E.A., Caterina, M.J., Clapham, D.E., Harteneck, C., Heller, S., Julius, D., Mori, Y., Penner, R., Prawitt, D., Scharenberg, A.M., Schultz, G., Shimizu, N., and Zhu, M. X. A unified nomenclature for the superfamily of TRP cation channels. Mol. Cell 9, 229-231, 2002
- **7.** Zhu, M.X. and Tang, J. TRPC channel interactions with calmodulin and IP₃ receptors. Novartis Found Symp. *258*:44-58; discussion 58-62, 98-102, 263-266, 2004
- 8. **Zhu, M.X**. Multiple roles of calmodulin and other Ca²⁺-binding proteins in the functional regulation of TRP channels. **Pflugers Arch.** 451, 105-115, 2005
- **9.** Colton, C.K. and **Zhu, M.X.** 2-Aminoethoxydiphenyl borate as a common activator of various TRPV channels. Handb Exp Pharmacol. 179:173-187, 2007
- Zhu, M.X. Understanding the role of voltage gating of polymodal TRP channels. J Physiol. 585(Pt 2):321-322, 2007
- Galione, A., Evans, A.M., Ma, J., Parrington, J., Arredouani, A., Cheng, X., and Zhu, M.X. The acid test: the discovery of two-pore channels (TPCs) as NAADP-gated endolysosomal Ca²⁺ release channels. Pflugers Arch. 458(5):869-876, 2009
- **12. Zhu, M.X.**, Evans, A.M., Ma, J., Parrington, J., and Galione, A. Two-pore channels for integrative calcium signaling. **Commun Integr Biol**. 3(1):12-17, 2010
- Zhu, M.X., Ma, J., Parrington, J., Calcraft, P.J., Galione, A., and Evans, A.M. Calcium signaling via two-pore channels: local or global, that is the question. Am J Physiol Cell Physiol. 298(3):C430-C441, 2010

- Zhu, M.X., Ma, J., Parrington, J., Galione, A., and Evans, A.M. TPCs: endolysosomal channels for calcium mobilization from acidic organelles triggered by NAADP. FEBS Lett. 584(10):1966-1974, 2010
- Arredouani, A., Evans, A.M., Ma, J., Parrington, J., and Zhu, M.X., Galione, A. An emerging role for NAADP-mediated Ca²⁺ signaling in the pancreatic β-cell. Islets 2(5):323-330, 2010, *PMCID: PMC3230560*
- **16**. Wang, S.Q., **Zhu, M.X.**, and Carafoli, E. Ca²⁺: a versatile master key for intracellular signaling cascades. **Sci China Life Sci**. 54(8):683-685, 2011, *PMID:* 21786190
- Fu, J., Gao, Z., Shen, B., and Zhu, M.X. Canonical transient receptor potential 4 and its small molecule modulators. Sci China Life Sci. 58(1): 39-47, 2015, doi: 10.1007/s11427-014-4772-5. PMCID: PMC4458143
- **18.** Venkatachalam, K., Wong, C.O., and **Zhu, M.X.** The Role of TRPMLs in Endolysosomal Trafficking and Function. **Cell Calcium** 58(1):48-56, 2015, doi: 10.1016/j.ceca.2014.10.008. *PMCID: PMC4412768*
- Xiong, J. and Zhu, M.X. Regulation of lysosomal ion homeostasis by channels and transporters. Sci China Life Sci. 59(8):777-791, 2016, doi: 10.1007/s11427-016-5090-x. Review. PMCID: PMC5147046
- **20. Zhu, M.X.**, Tuo, B., and Yang, J.J. The hills and valleys of calcium signaling. **Sci China Life Sci**. 59(8):743-8, 2016, doi: 10.1007/s11427-016-5098-2. Editorial
- 21. **Zhu, M.X**. A well-known potassium channel plays a critical role in lysosomes. **J Cell Biol**. 216(6):1513-1515, 2017, doi: 10.1083/jcb.201704017. *PMCID: PMC5461035*. Spotlight

C. Book Chapters

- Eichberg, J., Berti-Mattera, L.N., Schrama, L.H., Lin, C.J., Lowery, J.M., Rowe-Rendleman, C., Zhu, X. and Peterson, R.G. Phosphoinositide Metabolism, Protein Phosphorylation and the Pathogenesis of Diabetic Neuropathy, in Bazan, N.G., Horrocks, L.A. and Toffano, G. (eds) <u>Phospholipids in the</u> <u>Nervous System: Biochemical and Molecular Pathology</u>. Livania Press, Padova, Italy, 157-166, 1989
- Eichberg, J. and Zhu, X. Diacylglycerol Composition and Metabolism in Peripheral Nerve, in Bazan, N.G., Murphy, M.G. and Toffano, G. (eds) <u>Neurobiology of Essential Fatty Acids</u> Plenum Press, New York, pp. 413-425, 1992
- Miller, M, Wu, M., Xu, J., Weaver, D., Li, M., and Zhu, M.X. High-throughput screening of TRPC channel ligands using cell-based assays. In: Zhu MX, editor. <u>TRP Channels</u>. CRC Press, Boca Raton (FL), Chapter 1, pp1-20, 2011. *PMID: 22593970*
- Bavencoffe, A. and Zhu, M.X. TRPC proteins as a link between plasma membrane ion transport and intracellular Ca²⁺ stores, in Groschner, K., Graier, W.F. and Romani, C. (eds) <u>Store-Operated Ca²⁺</u> <u>Entry (SOCE) Pathways: Emerging Signaling Concepts</u>, Springer Press, Vienna, Austria, Chapter 12, pp.163-175, 2012
- 5. Tian, J, Thakur, D.P. and **Zhu, M.X**. TRPC channels, in Zheng, J. and Trudeau, M.C. (eds) <u>Handbook</u> of Ion Channels, CRC press, Chapter 27: 411-426, 2014
- 6. Yang, P. and Zhu, M.X. TRPV3, in Nilius, B. and Flockerzi, V. (eds) <u>Mammalian Transient Receptor</u> <u>Potential (TRP) Cation Channels</u>, Springer Press, Handb Exp Pharmacol, 222: 273-291, 2014
- Bavencoffe, A. Zhu, M.X. and Tian, J.B. TRPC proteins as a link between plasma membrane ion transport and intracellular Ca²⁺ stores, in Groschner, K., Graier, W.F. and Romani, C. (2nd eds) <u>Store-Operated Ca²⁺ Entry (SOCE) Pathways: Emerging Signaling Concepts</u>, Springer Press, Vienna, Austria, Chapter 13,pp- 2016

8. Gumpper, K., Sermersheim, M., **Zhu, M.X.**, and Lin, P.H. Skeletal Muscle Lysosomal Function via Cathepsin Activity Measurement. Methods Mol Biol. 2017 Aug 27. doi: 10.1007/7651_2017_64. [Epub ahead of print]

E. Books

1. TRP Channels (Methods in Signal Transduction Series), Edited by Michael Xi Zhu, CRC Press, published on April 26, 2011

F. Other Professional Communications

Invited Symposium Presentations:

- June, 1995: Gordon Research Conference on Ca²⁺ Signaling, New England College, Henniker, NH. "Mammalian trp".
- March, 1997: International Symposium on Molecular Mechanism of Intracellular Signaling, Tokyo, Japan. "Mammalian Trp Homologues Involved In Capacitative Ca²⁺ Entry".
- September, 1997: 70th Annual Meeting of Japanese Biochemistry Society, Kanazawa, Japan. Symposium on Molecular structure, function, and interaction of receptors, ion channels and transporters: "Receptor-controlled capacitative Ca²⁺ entry in Trp or Trpl Ca channels".
- September, 2001: Workshop on '*Mucolipin, TRPs, and Human Disease*', sponsored by the National Institutes of Health and the Mucolipidosis Type IV Foundation, Bethesda, MD. "Regulation of TRP proteins by IP3 receptors and Ca²⁺/calmodulin".
- Sep. 20, 2002, Mechanism of activation of TRPC channels. Hunt-Curtis Symposium on Translational Neuroscience "*Neurological Disorders: Perspectives from Basic Neurobiology*" Hyatt on Capital Square, Columbus, OH
- Mar. 25, 2003, TRPC channel interactions: CaM and IP₃R. Novartis Foundation Symposium 258 on *"Mammalian TRP channels as molecular targets"*, London, UK.
- Apr. 19, 2004, TRPC channels and their associated proteins. Symposium on "*The TRP superfamily of cation channels: emerging roles in epithelial physiology*", Experimental Biology 2004 meeting, Washington DC, USA.
- Sep. 16, 2005, Mechanism of activation of TRPV3. Special Symposium on "*TRP channels: Unique players in cell function*", Katholieke Universiteit Leuven, Leuven, Belgium
- Oct. 8, 2005, Multiple roles of calmodulin and calcium-binding proteins in the functional regulation of TRP channels. 4th World Congress of Cellular and Molecular Biology, Symposium on "*Protein interactions and the formation of signalsome*" Poitiers France
- Feb. 26, 2006, Ca²⁺-dependent regulation of TRPV3. The Minerva Gentner Symposia on *TRP channels* and Ca²⁺ signaling, Eilat, Israel
- Mar. 18, 2006, Thermosensitive TRP channels in pain and other sensory functions. 2006 Annual Scientific Meeting of Chinese Association for the Study of Pain (CASP, Taiwan), Kaohsuing, Taiwan
- Jun. 28, 2006, Old Drugs on New Targets. Is there anything out there for TRP Channels? 4th Annual Ion Channel Retreat: *From Current Perspectives to Future Possibilities*. Vancouver, Canada
- Jul. 20, 2007, Ion Channel-based Multipanel High Throughput Evaluation of Candidate Compounds for Therapeutic Development. 2007 Dalian Conference on Ion channels in Technology and Drug Discovery, Dalian, Liaoning, China

- Oct. 18, 2007, Diverse Physiological Functions and Regulatory Mechanisms of TRPC channels. 2007 IBC Conference on Assays & Cellular Targets (ACT2007), San Diego, CA, USA
- Jul. 23, 2008, Two-pore channels for intracellular Ca²⁺ mobilization. The 7th Chinese Symposium on Calcium Signaling, Yichang, Hubei, China
- Jul. 17, 2009, Two-pore channels in intracellular Ca²⁺ mobilization induced by NAADP and functional coupling to other Ca²⁺ release channels. 2009 Harbin Conference on Ion channels in Technology and Drug Discovery, Harbin, Helongjiang, China
- Oct. 11, 2010, Two-pore channels as receptors for NAADP-induced calcium release from acidic organelles. Conference on New Horizons in Calcium Signaling, Beijing, China
- Mar. 25, 2011, Translational Pain Research at UTHSC-H, Third Annual Golf Coast Consortia Translational Pain Research Symposium on Friday, March 25, 2011, Houston, Texas, USA
- Jun. 27, 2011, Two-pore channels in calcium signaling originating from acidic organelles. Gordon Research Conference on Calcium Signaling. Colby College, Waterville, ME, USA
- Jul. 17, 2011, The Gi/o link of TRPC4 and TRPC5 channel activation. The 17th International Symposium on Ca²⁺-Binding Proteins and Ca²⁺ Function in Health and Disease, Beijing, China
- Jul. 30, 2011, High throughput screening of novel inhibitors for TRPC4/C5 channels. The biennial meeting of the Chinese Neuroscience Society, Zhengzhou, China.
- Oct. 27, 2011, Two-pore channels in integrative calcium signaling. Joined symposium on "Ca²⁺-signals: Molecular mechanisms and integrative functions" by SFB 894, the graduate school 1326 of Saarland University, Germany, and the doctoral college MCBO, Innsbruck, Austria, Homburg, Saarland, Germany.
- Oct. 31, 2011, Two-pore channels for NAADP-gated calcium release from endolysosomes. First International Meeting on "Ion Channel Signaling Mechanisms: From Basic Science to Clinical Application", Marrakesh, Morocco.
- Dec. 7, 2011, Two-pore channels in integrative calcium signaling. A Themed Meeting of The Physiological Society on "Vascular and Smooth Muscle Physiology", Edinburgh, Scotland, UK.
- May 19, 2012, Endolysosomal functions of Two-pore Channels. The first European Calcium Channel Conference, Alpbach, Austria.
- Jun. 19, 2012, Integration of Multiple Neuronal Inputs through TRPC4 Channels at the Lateral Septum. International Mini Symposium for Neuronal Development, Functions and Diseases, Nanjing, China
- Jun. 28, 2012, Functional regulation and pharmacology of TRPC channels. 4th International Congress on Cell Membranes and Oxidative Stress Focus on: Calcium Signaling and TRP Channels, Isparta, Turkey.
- Jul. 17, 2012, Signal integration and coincidence detection by TRPC channels. The 9th Chinese Symposium on Calcium Signaling, Huangshan, China
- Sep. 15, 2012, Coincidence detection and signal integration of multiple neurologic inputs by TRPC4 channels in lateral septal neurons. The Second Biennial International Symposium of the Society of Chinese Bioscientists in America-Texas Chapter, Jiangsu-Texas Biomedical Symposium, Frontier on Cancer and Other Human Diseases: From Mechanisms to Bedside, Nanjing, China
- Sep. 20, 2012, TRPC channels in coincidence detection and signal integration of multiple signaling pathways. The 2012 Cold Spring Harbor Asia Conference on Ion Channels: Biophysics, Diseases and Therapeutics, Suzhou, China
- Sep. 23, 2012, Modulation of Purkinje cell firing in mouse cerebellum by p75-dependent Rac1 activation. 5th International Symposium of the Society for Research on the Cerebellum, Hangzhou, China

- Jul. 1, 2013, Bi-directional modulation of neuronal excitability by TRPC4-containing channels in mouse lateral septal nuclei. The 4th International Ion Channel Conference, Ion Channels: Structure, Function & Therapeutics, Shijiazhuang, China
- Oct. 30, 2013, Dual depolarization responses generated within the same lateral septal neurons by TRPC4containing channels. The 1st International and 13th Chinese Biophysics Congress (ICBC 2013), Nanchang, China
- May 29, 2014, TRP channels as novel targets of drug therapies. 2014 International Symposium on Clinical and Translational Medicine, Sub-session on "The Translational Medicine in Drug Innovation", Shanghai, China
- Jun. 27, 2014, Dissecting the computing role of TRPC4 channels in neurons. Symposium for Chinese Neuroscientists Worldwide 2014, Suzhou, Jiangsu province, China
- Jun. 29, 2014, Dissecting the computing role of TRPC4 channels in neurons. Neuropharmacology Forum, Shanghai Institute of Material Medica, Chinese Academy of Sciences, Shanghai, China
- Jul. 3, 2014, How is phospholipase C coupled to TRPC4 activation? The 10th Chinese Symposium on Calcium Signaling, Yichun, Jiangxi province, China
- Sep. 11., 2014, TRP channels in intracellular organelles. The 5th International Congress on Cell Membranes and Oxidative Stress: Focus on Calcium Signaling and TRP Channels, Isparta, Turkey
- Sep. 15, 2014, Dissecting the computing role of TRPC4 channels. Ion Channels and Calcium Signaling Workshop, Ege University, Faculty of Pharmacy, Department of Pharmacology, Izmir, Turkey
- Oct. 20, 2014, Intracellular channels involved in vesicle trafficking, lysosome exocytosis and autophagy. China-US biomedical symposium on oncology and the 3rd SCBA-Texas international conference, Shijiazhuang, Hebei province, China
- Nov. 22, 2014, TRPs, TPCs and what else to come? International Symposium on Receptors, G Proteins and Integration of Ca²⁺ Signaling in the Cardiovascular System, MDC Communications Center, Berlin-Buch, Germany
- Jan. 14, 2015, TRPC channels, Discovery, Function and Regulation. 2015 International Symposium on Ion Channel Research, Seoul National University College of Medicine, Seoul, Korea
- Mar. 31, 2015, Regulation and function of endolysosome two-pore channels. Experimental Biology 2015, APS, Cell and Molecular Physiology Section/Symposium on Cation Channels Controlling Intracellular Functions, Boston, MA
- Jun. 27, 2015, Neuronal functions mediated by TRPC4 channels in response to coincident stimulation of G_{i/o} proteins and phospholipase C. The 5th International Ion Channel Conference, Luzhou, China,
- Jun. 30, 2015, Lysosomal Channels-old and new kids on the block. 2015 Third Military Medical University Neuroscience Symposium: Ion Channels, Chongqing, China
- May 7, 2016, TRPC4 channels in neurological disorders, 2016 Annual Symposium of SCBA -Texas Chapter, Baylor College of Medicine, Houston, TX
- Jul. 24, 2016, Information processing the analog-to-digital conversion of metabotropic inputs in lateral septal neurons. The 11th Symposium on Calcium Signaling in China, Zunyi, Guizhou, China
- Sep. 30, 2016, Two-pore channels and their cellular functions. International Symposium on Regulation of cell functions by Transient Receptor Potential channels. Herrsching, Germany
- Oct. 16, 2016, Information processing the analog-to-digital conversion of metabotropic inputs in lateral septal neurons. China-US biomedical symposium on oncology and the 4th SCBA-Texas international conference, Baoding, Hebei province, China

Jun. 28, 2017, Intracellular Ca²⁺ signaling and TRP channels: functional regulation and physiological significance. 2017 Ion Channel Symposium II, Zhejiang University, Hangzhou, Zhejiang province, China

Research Seminars:

Nov., 1989: Effects of Elevated Glucose Concentration on CDP-Diacylglycerol Accumulation in Rat Peripheral Nerve. Ann. Meet. for Soc. of Exp. Biol. Med., Uni. of Houston, Houston, TX.

Feb. 1991: 1,2-Diacylglycerol Content, Glycerolipid Molecular Species, and Studies on *myo*-Inositol Metabolism in Sciatic Nerve from Normal and Diabetic Rats. Dissertation Seminar, Dept. of Biochem. & Biophys. Sci., Uni. of Houston, Houston, TX.

Jan. 1993: Activation of Phospholipase C by Gs-Coupled Receptors. Reproduc. and Develop. Biol. Workshop, Dept. of Cell Biol., Baylor Col. Med., Houston, TX.

Feb. 1996: Trp, from Drosophila to Human, Store-operated Ca²⁺ Channel Still? Special Guest Seminar. National Institute of Dental and Craniofacial Research, NIH, Bethesda, MD.

Sep. 1996: Mammalian *trp* genes. Signal Transduction Similar Series, Veteran Administration-CURE, UCLA, Los Angeles, CA.

Jul. 1997: Trp Proteins and Their Functions. CUSBEA85 Research Conference: Biomedicine and the Next Decade-Promises and Challenges. Providence, RI.

Sep. 1997: Calcium Channels Formed by Mammalian TRP Homologues. Special Guest Seminar. Research Institute of Physiological Science, Okazaki, Japan.

Feb. 1998 In Search for the Molecular Basis for Capacitative Calcium Entry: a Story of Mammalian *trp* Genes. Physiology Seminar, the Ohio State University, Columbus, OH.

May 1998 Molecular Basis of Capacitative Calcium Entry: Roles of Mammalian TRP Channels. Seminar to the Committee on Cell Physiology, the University of Chicago, Chicago, IL.

Nov. 1999 Regulation of Mammalian Trp Channel Function by Conformational Coupling. Seminar to the Institute of Pharmakology und Toxikology, University of Saarlandes, Homburg, Germany.

Nov. 1999 Regulation of Mammalian Trp Channel Function by Conformational Coupling. Seminar to the Department of Pharmacology and Toxikology, University of Graz, Graz, Austria.

Feb. 2000 Mechanism of Conformational Coupling of Trp Channels. Seminar to College of Pharmacy, University of Kentucky, Lexington, Kentucky, U.S.A.

May 2000 Mammalian Trp Channels and Their Mechanism of Gating by Calmodulin and IP₃ Receptors. Seminar to the Department of Pathology, Wayne State University, Detroit, Michigan, U.S.A.

Mar. 2001 Activation of TRP Ca^{2+} channels by IP₃ Receptors and Negative Regulation by calmodulin, Seminar to the Division of Pharmacology, College of Pharmacy, The Ohio State University, Columbus, OH.

Sep. 2001 The Roles of IP3 Receptors and Calmodulin on the Regulation of Trp Channels. Seminar to Centre for Cardiovascular Biology and Medicine, King's College London, London, United Kingdoms

Nov. 2001, Activation of TRP Ca²⁺ channels by IP₃ Receptors and Negative Regulation by Calmodulin, Physiology and Cell Biology Seminar, University of Nevada, School of Medicine, Reno, NV

Feb. 24, 2002, Regulation of Trp channel activity by IP_3 receptors and calmodulin. Platform presentation at the 46th Annual Meeting of Biophysical Society, San Francisco, CA

Jun. 13, 2002, Molecular cloning and characterization of two-pore calcium channels. Research seminar to the Neurobiotechnology Center, The Ohio State University, Columbus OH.

Oct. 8, 2002, Molecular Biology and Functional Regulation of TRP channels. Ion channel seminars, Institute of Neuroscience, Chinese Academy of Sciences, Shanghai, China

Oct. 10, 2002, Molecular Biology and Functional Regulation of TRP channels. Special Neuroscience seminar, Tongji Medical College, Huazhong University of Science and Technology, Wuhan, China

Oct. 13, 2002, Molecular Biology and Functional Regulation of TRP channels. Special seminar, Medical College of Sanxia University, Yichang, China

Dec. 3, 2002, Mechanisms of activation of TRPC channels. Pharmacology seminar, Department of Pharmacology, The Ohio State University, Columbus, OH

Jan. 30, 2003, Functional analysis of L7/Pcp2: does it regulate Ca²⁺ channels through G proteins? Research seminar to the Neurobiotechnology Center, The Ohio State University, Columbus OH. Joint presentation by Mariko Kinoshita and Mike Zhu

Jul. 31, 2003, Ion channels for Ca²⁺ signaling. Seminar to the Biophysics Program, The Ohio State University, Columbus OH.

Oct. 15, 2003, Ion channels for Ca²⁺ signaling. Seminar to the Neuroscience Graduate Studies Program, The Ohio State University, Columbus OH.

Nov. 6, 2003, Ion channels for Ca²⁺ signaling. Postdoctoral seminar at the Mathematical Biosciences Institute, The Ohio State University, Columbus OH.

Nov. 26, 2003, Structural and functional studies of mammalian TRP channels. Physiology seminar, University of Kentucky, Lexington, Kentucky, U.S.A

Dec. 22, 2003, Structural and functional studies of mammalian TRP channels. Special Neuroscience seminar, Tongji Medical College, Huazhong University of Science and Technology, Wuhan, China

Feb. 12, 2004, Ion channels for Ca²⁺ signaling. IBGP distinguished lecturer series, The Ohio State University, Columbus OH.

Mar. 4, 2004, Structural and functional studies of TRP channels. Department of Chemistry, the Biological Chemistry Division seminar, The Ohio State University, Columbus OH.

April 19, 2004, Mechanism of activation of TRPV3. NIDCR/NIH research seminar, Bethesda, MD

Aug. 23, 2004, Ion channel for calcium signaling. Physiology and Cell Biology Seminar, University of Nevada, School of Medicine, Reno, NV

Sep. 23, 2004, Signal fine-tuning, a new model for the role of L7/Pcp-2 in neural plasticity of cerebellar Purkinje cells. Research seminar to the Center of Molecular Neurobiology, The Ohio State University, Columbus OH.

Nov. 16, 2004, Molecular and functional characterization of TRP channels. Seminar to the College of Life Sciences, Fudan University, Shanghai, China

Nov. 19, 2004, Molecular biology and functional studies of TRP channels. Seminar to the Institute of Cell Biology, Beijing Normal University, Beijing, China

Dec. 8, 2004, Molecular biology and functional studies of TRP channels. Seminar to the Department of Pharmacology, Medical College of Ohio, Toledo, OH

Feb. 15, 2004, Regulation of TRPV3 function by unsaturated fatty acids. Platform presentation at the 49th annual meeting of the Biophysical Society, Long Beach, CA. My graduate student, Chunbo Wang presented the paper.

Sep. 13, 2005, Mechanisms of Regulation of TRP Channels. Seminar to the Departments of Anesthesia and Research, Universitätsspital Basel, Basel Switzerland

Oct. 6, 2005, Calcium-dependent regulation of TRP channels. Research seminar to the Center of Molecular Neurobiology, The Ohio State University, Columbus OH.

Nov. 16, 2005, Regulation of TRP channels by calcium-calmodulin. Seminar to the Department of Bio-Nano Science and Engineering, Institute of Micor-Nano Science and Technology, Shanghai JiaoTong University, Shanghai, China

Nov. 17, 2005, Ca²⁺-dependent regulation of TRP channels. Seminar to Institute of Molecular Medicine, Peking University, Beijing, China

Nov. 21, 2005, Ca²⁺-dependent regulation of TRP channels. Seminar to the Institute of Cell Biology, Beijing Normal University, Beijing, China

Mar. 22, 2006, Mechanisms of regulation of TRP channels. Seminar to the Department of Pharmacology, National Defense Medical Center, Taipei, Taiwan.

May 5, 2006, Thermosensitive channels: functional regulations and physiological roles. Pharmacology seminar, Department of Pharmacology, The Ohio State University, Columbus, OH

Jul. 24, 2006, Functional regulation of TRP channels. Seminar at The Guangzhou Institute of Biomedicine and Health Chinese Academy of. Sciences, Guangzhou, Guangdong, China

Oct. 31, 2006, The emerging role of TRP channels in cognition and as potential drug targets. Seminar to the School of Biological Sciences, Shanghai JiaoTong University, Shanghai, China

Oct. 31, 2006, Fine-tuning Purkinje cell firing by G protein modulation via L7/Pcp2 and its potential implications in sexual dimorphism and human autism. Seminar to the Department of Bio-Nano Science and Engineering, Institute of Micor-Nano Science and Technology, Shanghai JiaoTong University, Shanghai, China

Feb. 6, 2007, Molecular characterizations and functional studies of TRP channels. Invited lecture to Institute of Pharmacology and Toxicology, University of Saarland, Homburg, Germany

Feb. 12, 2007, Molecular characterizations and functional studies of TRP channels. Research Seminar on Cell & Metabolic Signalling, School of Medicine and Dentistry, Queen's University Belfast, Belfast, UK

Feb. 15, 2007, Molecular characterizations and functional studies of TRP channels. Bute Seminar Series of School of Biology and the School of Medicine, University of St. Andrews, St. Andrews, UK

Aug. 15, 2007, TRPC channels as coincidence detectors. Research seminar to the Center for Molecular Neurobiology, The Ohio State University, Columbus OH.

Nov. 5, 2007, TRP channels and cell signaling. Seminar to the Institute of Neuroscience, Chinese Academy of Sciences, Shanghai, China

Dec. 7, 2007, Somatosensory and chemosensory functions of TRP channels. Seminar to Miami Valley Innovation Center, Procter and Gamble, Cincinnati, Ohio, USA

Jul. 11, 2008, A quest on novel molecular candidates of ion channels for calcium signaling. Seminar to College of Life Sciences, Peking University, Beijing, China

Sep. 3, 2008, Molecular characterization of novel ion channels for calcium signaling. Seminar to Department of Biology and Biochemistry, University of Houston, Houston, Texas

Nov. 13, 2008, Molecular mechanism of regulation of TRP channels. Seminar to China Capital Medical University, Beijing, China

Nov. 21, 2008, Functional regulation of TRP channels by calmodulin. Seminar to Department of Biochemistry, College of Biological Sciences, The Ohio State University, Columbus, Ohio.

Feb. 11, 2009, Two-pore channels for NAADP-induced intracellular calcium release from acidic organelles. Seminar to the Center of Molecular Neurobiology, The Ohio State University, Columbus, Ohio

March 3, 2009, Two-pore channels for calcium mobilization from acidic organelles and cell signaling by NAADP. Platform presentation in the Session Title: TRP Channels & Intracellular Ca²⁺ Channels, at Biophysical Society 53rd Annual Meeting, Boston, MA, USA

January 29, 2010, Two-pore channels in integrative Ca²⁺ signaling. Seminar to Wright State University, Dayton, OH, USA

September 16, 2010, Novel ion channels for calcium signaling. Guest speaker for the seminar series of the Center for Molecular Medicine, University of Cologne (CMMC), Institute for Neurophysiology, Cologne, Germany

September 21, 2010, Novel ion channels for calcium signaling. Guest speaker to Laboratory of Cell Physiology, INSERM U 800, Bat. SN 3, UFR de Biologie, Université de Lille 1, Lille, France

October 15, 2010, Pcp2(L7), a small Purkinje cell specific G protein modulator implicated in a novel mechanism of sensorimotor learning. Special seminar to Zhejiang University School of Medicine, Department of Neurobiology, Hangzhou, Zhejiang, China

November 26, 2010, Novel Calcium Permeable Channels In Physiology and Diseases. 21st Century Innovation Forum Series #182, Shanghai Jiao Tong University School of Medicine, Shanghai, China

December 6, 2010, Novel ion channels for calcium signaling. Seminar to Department of Biochemistry and Molecular Biology, The University of Texas Medical School – Houston, Houston, TX, USA

December 9, 2010, Novel channels for calcium signaling and their physiological functions. Seminar to Division of Anesthesiology and Clinical Care, MD Anderson Cancer Center, Houston, TX, USA

January 20, 2011, Novel channels for calcium signaling and their physiological functions. Seminar to Department of Biochemistry and Molecular Biology, Baylor College of Medicine, Houston, TX, USA

February 11, 2011, Novel ion channels for calcium signaling and their physiological functions. Seminar to Department of Pharmacology & Toxicology, The University of Texas Medical Branch, Galveston, TX, USA

October 17, 2011, Novel ion channels for calcium signaling and physiological implications. Seminar to Department of Molecular Biophysics and Physiology Rush University Medical Center, Chicago, IL, USA

December 9, 2011, Mechanisms of regulation and physiological functions of TRPC4 channels. Seminar to Division of Diabetes, Endocrinology and Metabolism Hull York Medical School, Hull, UK

March 12, 2012, Novel ion channels for calcium signaling and physiological functions. Seminar to Department of Physiology, University of Texas Southwestern Medical Center, Dallas, TX, USA

May 4, 2012, Novel ion channels for calcium signaling, Seminar to School of Medicine and Health Sciences, University of North Dakota, Grand Forks, ND, USA

September 21, 2012, Neurological function and regulation of TRPC channels. Seminar to Jiangnan University School of Medicine and Pharmacy, Wuxi, China

November 12, 2012, Regulation and pharmacology of TRPC channels. Seminar to Boehringer Ingelheim Pharmaceuticals, Inc. Ridgefield, Connecticut

January 24, 2013, A Quest to Understanding the Function of TRP Channels. Seminar to Institute of Biomedical Sciences, Academia Sinica, Taipei, Taiwan

January 25, 2013, New aspects of calcium signaling by channels on acidic organelles. Seminar to Institute of Zoology, School of Life Science, National Taiwan University, Taipei, Taiwan

February 18, 2013, TRP channels, polymodal regulation, coincident detection, and physiological implications, Tri-Departmental seminar at UMDNJ New Jersey Medical School, Newark, NJ

July 16, 2013, Functional diversity and regulation of TRP channels. Seminar to Third Military Medical University, Chongqing, China

July 20, 2013, Functional diversity and regulation of TRP channels. Seminar to Anhui Medical University, Hefei, China

September 4, 2013, Calcium release channels in the endolysosomes. Seminar to Department of Pharmacology, University of Illinois at Chicago, Chicago, IL

September 16, 2013, A Quest to Understanding the Function of TRP Channels. Seminar to Institute of Life Sciences, Southeast University, Nanjing, China

January 13, 2014, Co-incidence detection of multiple G protein signaling pathways by TRPC channels. Biochemistry & Molecular Biology Seminar Series, UTHealth, Houston, TX

March 11, 2014, Ion Channels for Ca²⁺ Signaling. Seminar to Institute of Materia Medica, Chinese Academy of Science, Shanghai, China

October 23, 2014, Coincident activation of TRPC4 channel by Gi/o and PLC pathways and its implication in neuronal function. Seminar to Institute of Zoology, Chinese Academy of Sciences, Beijing, China

October 24, 2014, Dissecting the computing role of TRPC4 channels. Seminar to IDG/McGovern Brain Institute, Tsinghua University, Beijing, China

November 4, 2014, Coincident activation of TRPC4 channel by Gi/o and PLC pathways and its implication in neuronal function. Seminar to China Pharmaceutical University, Nanjing, China

November 5, 2014, Coincident activation of TRPC4 channel by Gi/o and PLC pathways and its implication in neuronal function. Seminar to Wuhan University, Wuhan, China

November 24, 2014, Coincident activation of TRPC4 channel by Gi/o and PLC pathways and its implication in neuronal function. Seminar to University of Saarland, Homburg, Germany

November 27, 2014, Coincident activation of TRPC4 channel by $G_{i/o}$ and PLC pathways and its implication in neuronal function. Seminar to Doctoral College "Metabolic & Cardiovascular Disease" and the Department of Biophysics, Medical University of Graz, Graz, Austria

January 13, 2015, Coincident activation of TRPC4 channel by G_{i/o} and PLC pathways and its implication in neuronal function. Seminar to Department of Physiology, Seoul National University College of Medicine, Seoul, Korea

January 16, 2015, Developing small molecular probes of TRPC channels. Seminar to Daewoong drug company, Seoul, Korea

April 21, 2015, Co-dependence of TRPC4 on $G_{i/o}$ and phospholipase C. Frontiers in Biomedical Sciences seminar series, School of Biomedical Sciences, The Chinese University of Hong Kong, Hong Kong, China

April 22, 2015, Neuronal functions mediated by TRPC4 channels in response to coincident stimulation of $G_{i/o}$ proteins and phospholipase C. Seminar to Peking University Shenzhen Graduate School, Shenzhen, China

July 1, 2015, Ion Channel Neuropharmacology. Seminar to Drug Discovery Center, Chongqing University, Chongqing, China

September 10, 2015, Coincident detection of phospholipase C and Gi/o protein signaling by TRPC4 and its implications in the nervous system. Seminar to Department of Pharmacology, The University of Oxford, Oxford, UK

September 11, 2015, From TRP channels to Two Pore Channels: diversity of function through evolution. Seminar to Center for Integrative Physiology, The University of Edinburgh, Edinburgh, UK

September 14, 2015, Regulation and function of endolysosome two-pore channels. Seminar to Department Pharmacology, Ludwig Maximilian University of Munich, Germany.

October 20, 2015, From TRP channels to Two Pore Channels: diversity of function through evolution. Seminar to China Pharmaceutical University, Nanjing, China.

November 3, 2015, Coincident sensing of $G_{i/o}$ and phospholipase C signaling by TRPC4. Seminar to School of Life Science and Technology, ShanghaiTech University, Shanghai, China.

November 16, 2015, TRPC channels, Discovery, Function and Regulation. Seminar to Kunming Institute of Botany, Chinese Academy of Sciences, Kunming, China

November 17, 2015, TRPC channels, Discovery, Function and Regulation. Seminar to Wuhan University School of Pharmacy, Wuhan, China.

November 20, 2015, TRPC channels, Discovery, Function and Regulation. Seminar to Yantai University School of Pharmacy, Yantai, China.

December 10, 2015, From TRP channels to Two Pore Channels: diversity of function through evolution. Seminar to Department of Physiology & Biophysics, Dalhousie University, Halifax, NS, Canada.

December 15, 2015, Co-Regulation of TRPC4 by phospholipase C and $G_{i/o}$ proteins and its implications in neuronal function. Cellular & Molecular Physiology Seminar Series, Penn State University College of Medicine, Hershey, PA, USA

March 10, 2016, Co-Regulation of TRPC4 by Phospholipase C and Gi/o Proteins and its Implications in Neuronal Function, University of Wyoming School of Pharmacy, Laramie, Wyoming

May 17, 2016, TRP channels: Discovery, Function and Regulation. Seminar to College of Basic Medicine, Beijing University of Chinese Medicine, Beijing, China

May 27, 2016, TRPC4 integrates multiple transmitter signals to regulate neuronal function. Seminar to Institute of Brain Functional Genomics, East China Normal University, Shanghai, China

September 22, 2016, TRPC4 channel regulation and function. Distinguished Scientist Series Seminar program, Department of Biochemistry and Molecular Biology, University of South Alabama, Mobile, AL

October, 21, 2016, Analog-to-digital conversion of differential metabotropic inputs at the lateral Septum, Jiangnan University, Wuxi, Jiangsu, China

October 28, 2016, Metabotropic neurotransmission: message taken and reported through G proteinregulated ion channels. Progress in Neuroscience 2016, Capital Medical University, Beijing, China

November 23, 2016, Metabotropic neurotransmission: message taken and reported through G proteinregulated ion channels. School of Life Sciences, East China Normal University, Shanghai, China

January 5, 2017, On the quest of new calcium permeable channels: function, regulation and drug discovery. Guangxi Normal University, Guilin, Guangxi, China

September 5, 2017, TRPC channels and G protein signaling. Center for Diagnostics and Therapeutics, Department of Chemistry, Georgia State University, Atlanta, GA