

## CURRICULUM VITAE

**JING ZHAO, Ph.D.**

**NAME:** JING ZHAO

**PRESENT TITLE:** Assistant Professor, Non-Tenure Research

**WORK ADDRESS:** The University of Texas Health Science Center at Houston  
McGovern Medical School  
Department of Neurobiology and Anatomy  
6431 Fannin Street,  
Medical School Building, Suite 7.330,  
Houston, TX 77030  
U.S.A.

**CITIZENSHIP:** People's Republic of China

### UNDERGRADUATE EDUCATION:

Beijing Medical University, Beijing, China 09/1993-07/1998  
Degree: Bachelor of Medicine

### GRADUATE EDUCATION:

Capital University of Medical Sciences, Beijing, China 09/1998-07/2001  
Degree: Master of Science  
Major: Surgery

University of Texas Health Science Center at Houston, 08/2001-08/2008  
Graduate School of Biomedical Sciences  
Houston, Texas, USA  
Degree: Doctor of Philosophy  
Major: Neuroscience

### POSTGRADUATE TRAINING:

Post-doctoral fellow 08/2008-03/2012  
Laboratory of Dr. Pramod K. Dash  
Department of Neurobiology and Anatomy  
University of Texas Medical School at Houston

### ACADEMIC APPOINTMENTS:

Research Scientist 2012-2015  
Department of Neurobiology and Anatomy  
University of Texas Medical School at Houston

Senior Research Scientist 2015-2018  
Department of Neurobiology and Anatomy  
University of Texas Health Science Center at Houston  
McGovern Medical School

Assistant Professor, Non-Tenure Research 2018 - present  
Department of Neurobiology and Anatomy

University of Texas Health Science Center at Houston  
McGovern Medical School

**PROFESSIONAL ORGANIZATIONS:**

Member of Mission Connect (a program of TIRR Foundation) 02/2018 – present

**HONORS AND AWARDS:**

Third Place Scholarship 1999  
Capital University of Medical Sciences, Beijing, China

John P. McGovern Award, First Place Winner 11/2004  
Graduate Student Research Poster Session (Post-Ph.D. candidacy Category)  
University of Texas-Health Science Center at Houston Research Day  
Graduate School of Biomedical Sciences  
University of Texas at Houston, Health Science Center

Student Travel Award 09/2005  
Graduate School of Biomedical Sciences  
University of Texas at Houston, Health Science Center

Roberta M. and Jean M. Worsham Endowed Scholarship 03/2006  
Graduate School of Biomedical Sciences  
University of Texas at Houston, Health Science Center

First Place GSEC Poster Competition Winner 04/2006  
The Graduate Student Education Committee (GSEC) Poster Competition  
University of Texas at Houston, Medical School

Student Travel Grant 07/2006  
The 24th Annual National Neurotrauma Symposium, St. Louis, MO  
National Neurotrauma Society

Michael Goldberger Award of Excellence 07/2006  
The 24th Annual National Neurotrauma Symposium, St. Louis, MO  
National Neurotrauma Society

Dean's Research Scholarship Award 08/2006  
Graduate Student Education Committee  
University of Texas at Houston, Medical School

Student Travel Grant 07/2007  
The 25th Annual National Neurotrauma Symposium, Kansas City, MO  
National Neurotrauma Society

Dee S. and Patricia Osborne Endowed Scholarship 12/2007  
In The Neurosciences  
Neuroscience Research Center 14th Annual Poster Session Winner  
The University of Texas, Health Science Center at Houston

Presidents' Research Scholarship 01/2008  
University of Texas, Health Science Center at Houston

University of Texas, M.D. Anderson Cancer Center  
University of Texas, Graduate School of Biomedical Sciences

#### **CURRENT GRANT SUPPORT:**

The role of mitochondrial fission in TBI outcome  
P.I.: (multi-P.I.) Waxham (contact), Dash, Zhao  
NIH/NINDS 09/15/2017 – 08/31/2022  
\$67,974 (Zhao direct costs/yr)

#### **PUBLICATIONS**

##### **Abstracts**

Zhao, J., Clifton, G.L., and Dash, P.K.: The isothiocyanate sulforaphane attenuates blood-brain barrier compromise and brain edema following traumatic brain injury. *J. Neurotrauma*. 22(10):1233, 2005.

Zhao, J., Clifton, G.L., and Dash, P.K.: Lessening traumatic brain injury-associated blood-brain barrier compromise and brain edema. Program No. 435.19. 2005 Abstract Viewer/Itinerary Planner. Washington, DC: Society for Neuroscience, 2005. (Online)

Zhao, J., Redell, J., and Dash, P.: Consequences of altered catechol-o-methyl transferase (COMT) expression after TBI. *J. Neurotrauma*. 23(6):1040, 2006.

Zhao, J., Moore, A., and Dash, P.: The role of nuclear factor Nrf2-driven genes in attenuating blood-brain barrier disruption and brain edema following traumatic brain injury. *J. Neurotrauma*. 23(6):988, 2006.

Zhao, J., Moore, A.N., and Dash, P.K.: Attenuating blood-brain barrier disruption and brain edema following traumatic brain injury by the induction of Nrf2-driven genes. Program No. 414.1. 2006 Neuroscience Meeting Planner. Atlanta, GA: Society for Neuroscience, 2006. (Online)

Zhao, J., Moore, A.N., and Dash, P.K.: Induction of Nrf2-driven genes offers protection following traumatic brain injury. *J. Neurotrauma*. 24(7):1278, 2007.

Zhao, J., Moore, A.N., and Dash, P.K.: Activation of Nrf2-dependent gene regulation offers protection following traumatic brain injury. Program No. 494.8. 2007 Neuroscience Meeting Planner. San Diego, CA: Society for Neuroscience, 2007. (Online)

##### **Refereed Original Articles in Journals**

Zhao, J., Wang, Z.C., and Xu, C.: The relationship between dopamine receptors and cerebral ischemia. *Foreign Medical Sciences-Cerebrovascular Disease*, 8(3):146-148, 2000.

Zhao, J., Xu, C., and Wang, Z.C.: Effect of dopamine D2 and D3 receptors on temporary local cerebral ischemia on rats. *Chinese Journal of Neurosurgery*, 18(3):160-163, 2002.

Zhao, J., Moore, A.N., Clifton, G.L., and Dash, P.K.: Sulforaphane enhances aquaporin-4 expression and decreases cerebral edema following traumatic brain injury. *J. Neurosci Res*. 82(4):499-506, 2005.

Zhao, J., Kobori, N., Aronowski, J., and Dash, P.K.: Sulforaphane reduces infarct volume following focal cerebral ischemia in rodents. *Neurosci Lett*. 393(2-3):108-112, 2006.

Kalsotra, A., Zhao, J., Anakk, S., Dash, P.K., and Strobel, H.W.: Brain trauma leads to enhanced lung inflammation and injury: evidence for role of P4504Fs in resolution. *J. Cereb Blood Flow Metab.* 27(5):963-974, 2007.

Redell, J.B., Zhao, J., and Dash, P.K.: Acutely increased cyclophilin a expression after brain injury: A role in blood-brain barrier function and tissue preservation. *J. Neurosci Res.* 85(9):1980-1988, 2007.

Zhao, J., Moore, A.N., Redell, J.B., and Dash, P.K.: Enhancing expression of Nrf2-driven genes protects the blood brain barrier after brain injury. *J. Neurosci.* 27(38):10240-10248, 2007.

Wang, Y., Zhao, J., Kalsotra, A., Turman, C.M., Grill, R.J., Dash, P.K., and Strobel H.W.: CYP4F expression in rat brain correlates with changes in LTB4 levels after traumatic brain injury. *J. Neurotrauma.* 25(10):1187-1194, 2008.

Dash, P.K., Zhao, J., Orsi, S.A., Zhang, M., and Moore, A.N.: Sulforaphane improves cognitive function administered following traumatic brain injury. *Neurosci Lett.* 460(2):103-107, 2009.

Dash, P.K., Redell, J.B., Hergenroeder, G., Zhao, J., Clifton, G.L., and Moore, A.: Serum ceruloplasmin and copper are early biomarkers for traumatic brain injury-associated elevated intracranial pressure. *J. Neurosci Res.* 88(8):1719-26, 2010.

Dash, P.K., Zhao, J., Hergenroeder, G., and Moore, A.N.: Biomarkers for the diagnosis, prognosis, and evaluation of treatment efficacy for traumatic brain injury. *Neurotherapeutics.* 7(1):100-14, 2010.

Hill, J., Zhao, J., and Dash, P.K.: High blood glucose does not adversely affect outcome in moderately brain injured rodents. *J. Neurotrauma.* 27(8):1439-48, 2010.

Dash, P.K., Orsi, S.A., Zhang, M., Grill, R.J., Pati, S., Zhao, J., and Moore, A.N.: Valproate administered after traumatic brain injury provides neuroprotection and improves cognitive function in rats. *PLoS One.* 5(6):e11383, 2010.

Pati, S., Khakoo, A.Y., Zhao, J., Jimenez, F., Gerber, M.H., Harting, M., Redell, J.B., Grill, R., Matsuo, Y., Guha, S., Cox, C.S., Reitz, M.S., Holcomb, J.B., and Dash, P.K.: Human mesenchymal stem cells inhibit vascular permeability by modulating vascular endothelial cadherin/ $\beta$ -catenin signaling. *Stem Cells Dev.* 20(1):89-101, 2011.

Redell, J.B., Zhao, J., and Dash, P.K.: Altered expression of miRNA-21 and its targets in the hippocampus after traumatic brain injury. *J. Neurosci. Res.* 89(2):212-21, 2011.

Zhao, J., Redell, J.B., Moore, A.N., and Dash, P.K.: A novel strategy to activate cytoprotective genes in the injured brain. *Biochem. Biophys. Res. Commun.* 407(3):501-6, 2011.

Dash, P.K., Johnson, D., Clark, J., Orsi, S.A., Zhang, M., Zhao, J., Grill, R.J., Moore, A.N., and Pati, S.: Involvement of the glycogen synthase kinase-3 signaling pathway in TBI pathology and neurocognitive outcome. *PLoS One.* 6(9):e24648, 2011.

Pati, S., Gerber, M.H., Menge, T.D., Wataha, K.A., Zhao, Y., Baumgartner, J.A., Zhao, J., Letourneau, P.A., Huby, M.P., Baer, L.A., Salisbury, J.R., Kozar, R.A., Wade, C.E., Walker, P.A., Dash, P.K., Cox, C.S. Jr, Doursout, M.F., and Holcomb, J.B.: Bone marrow derived mesenchymal

stem cells inhibit inflammation and preserve vascular endothelial integrity in the lungs after hemorrhagic shock. *PLoS One*. 6(9):e25171, 2011.

Zhao, J., Pati, S., Redell, J.B., Zhang, M., Moore, A.N., and Dash, P.K.: Caffeic acid phenethyl ester (CAPE) protects blood-brain barrier integrity and reduces contusion volume in rodent models of traumatic brain injury. *J. Neurotrauma*. 29(6):1209-18, 2012.

Menge, T., Zhao, Y., Zhao, J., Wataha, K., Gerber, M., Zhang, J., Letourneau, P., Redell, J., Shen, L., Wang, J., Peng, Z., Xue, H., Kozar, R., Cox, C.S. Jr, Khakoo, A.Y., Holcomb, J.B., Dash, P.K., and Pati, S.: Mesenchymal stem cells regulate blood-brain barrier integrity through TIMP3 release after traumatic brain injury. *Sci. Transl. Med.* 4(161):161ra150. 2012.

Redell, J.B., Moore, A.N., Grill, R.J., Johnson, D., Zhao, J., Liu, Y., and Dash, P.K.: Analysis of Functional Pathways Altered After Mild Traumatic Brain Injury. *J. Neurotrauma*. 1:30(9):752-64, 2013.

Hylin, M.J., Orsi, S.A., Zhao, J., Bockhorst, K.H., Perez, A.I., Moore, A.N., and Dash, P.K.: Behavioral and histopathological alterations resulting from mild fluid percussion injury. *J. Neurotrauma*. 1:30(9):702-15, 2013.

Hylin, M.J., Orsi, S.A., Rozas, N.S., Hill, J.L., Zhao, J., Redell, J.B., Moore, A.N., and Dash, P.K.: Repeated mild closed head injury impairs short-term visuospatial memory and complex learning. *J. Neurotrauma*. 1:30(9):716-26, 2013.

Gao, S., Zhao, J., Yin, T., Ma, Y., Xu, B., Moore, A.N., Dash, P.K., and Hu, M.: Development and validation of an UPLC-MS/MS method for the quantification of ethoxzolamide in blood, brain tissue, and bioequivalent buffers: applications to absorption, brain distribution, and pharmacokinetic studies. *J. Chromatogr. B. Analyt. Technol. Biomed. Life. Sci.* 986-987:54-9, 2015.

Dash, P.K., Hylin, M.J., Hood, K.N., Orsi, S.A., Zhao, J., Redell, J.B., Tsvetkov, A.S., and Moore, A.N.: Inhibition of Eukaryotic Initiation Factor 2 Alpha Phosphatase Reduces Tissue Damage and Improves Learning and Memory after Experimental Traumatic Brain Injury. *J. Neurotrauma*. 32(20):1608-20, 2015.

Gibb, S.L., Zhao, Y., Potter, D., Hylin, M.J., Bruhn, R., Baimukanova, G., Zhao, J., Xue, H., Abdel-Mohsen, M., Pillai, S.K., Moore, A.N., Johnson, E.M., Cox, C.S. Jr, Dash, P.K., and Pati, S.: TIMP3 Attenuates the Loss of Neural Stem Cells, Mature Neurons and Neurocognitive Dysfunction in Traumatic Brain Injury. *Stem Cells*. 33(12):3530-44, 2015.

Dash, P.K., Zhao, J., Kabori, N., Redell, J.B., Hylin, M.J., Hood, K.N., and Moore, A.N.: Activation of Alpha 7 Cholinergic Nicotinic Receptors Reduce Blood-Brain Barrier Permeability following Experimental Traumatic Brain Injury. *J. Neurosci.* 36(9):2809-18, 2016.

Fischer, T.D., Hylin, M.J., Zhao, J., Moore, A.N., Waxham, M.N., and Dash, P.K. Altered Mitochondrial Dynamics and TBI Pathophysiology. *Front. Syst. Neurosci.* 10:29, 2016.

Zhao, Y., Gibb, S.L., Zhao, J., Moore, A.N., Hylin, M.J., Menge, T., Xue, H., Baimukanova, G., Potter, D., Johnson, E.M., Holcomb, J.B., Cox, C.S. Jr, Dash, P.K., and Pati, S.: Wnt3a, a Protein Secreted by Mesenchymal Stem Cells Is Neuroprotective and Promotes Neurocognitive Recovery Following Traumatic Brain Injury. *Stem Cells*. 34(5):1263-72, 2016.

Hill, J.L., Kobori, N., Zhao, J., Rozas, N.S., Hylin, M.J., Moore, A.N., and Dash, P.K.: Traumatic brain injury decreases AMP-activated protein kinase activity and pharmacological enhancement of its activity improves cognitive outcome. *J. Neurochem.* 139(1):106-19, 2016.

McDaniel, S., Golla, S., Moore, A.N., DaCorta, J., Bode, A., Pati, S., Dash, P.K., and Zhao, J.: Resuscitation of hypotensive traumatic brain injured animals with spray dried plasma does not adversely alter physiology and improves blood-brain barrier function. *Mil. Med.* 182(7):e1706-e1711, 2017.

Zhao, J., Huynh, J.C., Hylin, M.J., OMalley, J., Perez, A.I., Moore, A.N., and Dash, P.K. Mild traumatic brain injury reduces spine density of projection neurons in the medial prefrontal cortex and impairs extinction of contextual fear memory. *J. Neurotrauma.* 35(1):149-156, 2018

Zhao, J., Hylin, M.J., Kobori, N., Hood, K.N., Moore, A.N., and Dash, P.K.: Post-Injury Administration of Galantamine Reduces Traumatic Brain Injury Pathology and Improves Outcome. *J. Neurotrauma.* 35(2):362-374, 2018

Hylin, M., Zhao, J., Tangavelou, K., Rozas, N.S., Hood, K.N., MacGowan, J.S., Moore, A.N., and Dash, P.K.: A role for autophagy in long-term spatial memory formation in male rodents. *J. Neurosci. Res.* 96(3):416-426, 2018.

Hood, K.N., Zhao, J., Redell, J.B., Hylin, M.J., Harris, B., Perez, A., Moore, A.N., and Dash, P.K.: Endoplasmic Reticulum Stress Contributes to the Loss of Newborn Hippocampal Neurons after Traumatic Brain Injury. *J. Neurosci.* 38(9):2372-2384, 2018.

Maynard, M.E., Underwood, E.L., Redell, J.B., Zhao, J., Kobori, N., Hood, K.N., Moore, A.N., and Dash, P.K.: Carnosic Acid Improves Outcome after Repetitive Mild Traumatic Brain Injury. *J. Neurotrauma.* 2019 [Epub ahead of print]

### **Chapters**

Jeter, C.B., Redell, J.B., Moore, A.N., Hergenroeder, G.W., Zhao, J., Johnson, D.R., Hylin, M.J., and Dash, P.K.: "Biomarkers of traumatic injury" in Li G., and Baker S.P. (Editors.). *Injury Research: Theories, Methods, and Approaches.* New York, Springer, 2011, pg. 337-355.

### **Other Professional Communications**

#### **Presentations**

"The role of nuclear factor Nrf2-driven genes in attenuating blood-brain barrier disruption and brain edema following traumatic brain injury" Open Communications Session B, The 24th Annual National Neurotrauma Symposium, St. Louis, MO, 07/08/2006.

"The role of nuclear factor Nrf2-driven genes in attenuating blood-brain barrier disruption following traumatic brain injury" 2006 Dean's Research Scholarship Award Ceremony, University of Texas at Houston, Medical School, 08/23/2006.

"Attenuating blood-brain barrier disruption and brain edema following traumatic brain injury by the induction of Nrf2-driven genes" Session 414, Society for Neuroscience (SfN) 36th Annual Meeting, Neuroscience 2006, Atlanta, GA, 10/16/2006.

"The Role of Nrf2-Dependent Gene Regulation in Protecting Blood-Brain Barrier Integrity Following Traumatic Brain Injury" 2007-2008 Presidents' Research Scholars Symposium,

University of Texas Health Science Center at Houston, University of Texas M.D. Anderson Cancer Center, University of Texas Graduate School of Biomedical Sciences, 01/25/2008.

“Protective effects of Nrf2-regulated gene expression on traumatic brain injury”. Neuroscience Seminar, Department of Neurobiology and Anatomy, UT-McGovern Medical School. 12/07/2017.

### **Scientific Exhibits**

Zhao, J., Clifton, G.L. and Dash, P.K.: Lessening traumatic brain injury-associated blood-brain barrier compromise and brain edema. University of Texas-Houston Research Day: Excellence Above All, 11/19/2004.

Zhao, J., Clifton, G.L. and Dash, P.K.: Attenuating blood-brain barrier compromise, brain edema and prefrontal dysfunction following brain injury. University of Texas-Houston Neuroscience Program Poster Session, 12/2004.

Zhao, J., Clifton, G.L. and Dash, P.K.: Lessening traumatic brain injury-associated blood-brain barrier compromise and brain edema. University of Texas-Houston, Graduate Student Education Committee (GSEC) Research Competition for Graduate Students, 04/19/2005.

Zhao, J., Clifton, G.L. and Dash, P.K.: The isothiocyanate sulforaphane attenuates blood-brain barrier compromise and brain edema following traumatic brain injury. The 23rd Annual National Neurotrauma Symposium, Washington D.C., 11/11/2005.

Zhao, J., Clifton, G.L. and Dash, P.K.: Lessening traumatic brain injury-associated blood-brain barrier compromise and brain edema. Society for Neuroscience (SfN) 35th Annual Meeting, Washington D.C., 11/14/2005.

Zhao, J., Clifton, G.L. and Dash, P.K.: Lessening traumatic brain injury-associated blood-brain barrier compromise and brain edema. The University of Texas-Health Science Center at Houston, Research Day, 11/18/2005.

Zhao, J., Clifton, G.L. and Dash, P.K.: Lessening traumatic brain injury-associated blood-brain barrier compromise and brain edema. University of Texas-Health Science Center at Houston, Neuroscience Research Center, Twelfth Annual Neuroscience Poster Session, 12/03/2005.

Zhao, J., Clifton, G.L. and Dash, P.K.: The role of nuclear factor Nrf2 in attenuating blood-brain barrier disruption and brain edema following traumatic brain injury. The 2006 Graduate Student Education Committee Research Competition for Graduate Students, University of Texas-Houston Medical School, 04/03/2006.

Zhao, J., Redell, J. and Dash, P.K.: Consequences of altered catechol-o-methyl transferase (COMT) expression after TBI. The 24th Annual National Neurotrauma Symposium, St. Louis, MO, 07/09/2006.

Zhao, J., Moore, A.N. and Dash, P.K.: The role of nuclear factor Nrf2-driven genes in attenuating blood-brain barrier disruption and brain edema following traumatic brain injury. The 24th Annual National Neurotrauma Symposium, St. Louis, MO, 07/07-09/2006.

Zhao, J., Moore, A.N. and Dash, P.K.: Induction of Nrf2-driven genes protects blood-brain barrier integrity following traumatic brain injury. University of Texas-Health Science Center at Houston, Neuroscience Research Center, Thirteenth Annual Neuroscience Poster Session, 12/02/06.

Zhao, J., Moore, A.N. and Dash, P.K.: Induction of Nrf2-driven genes offers protection following traumatic brain injury. The 25th Annual National Neurotrauma Symposium, Kansas City, MO, 07/29/2007.

Zhao, J., Moore, A.N. and Dash, P.K.: Activation of Nrf2-dependent gene regulation offers protection following traumatic brain injury. Society for Neuroscience (SfN) 37th Annual Meeting, San Diego, CA, 11/5/2007.

Zhao, J., Moore, A.N. and Dash, P.K.: Activation of Nrf2-dependent gene regulation pathway offers protection following traumatic brain injury. Neuroscience Research Center (NRC) 14th Annual Poster Session, University of Texas Health Science Center at Houston, 12/01/2007.

Zhao, J., Pati, S., Zhang, M., Moore, A.N. and Dash, P.K.: Caffeic acid phenethyl ester (CAPE) protects blood-brain barrier integrity and improves cognitive outcome following traumatic brain injury. Mission Connect Research Symposium, University of Texas Health Science Center at Houston, 12/08/2008.

Grill, R., Zhao, J. and Dash, P.: Mission Connect mild TBI translational research consortium: histopathology core. Mission Connect Research Symposium, Blast Injury Symposium, University of Texas Health Science Center at Houston, 12/04/2009.

Dash, P.K., Redell, J.B., Hergenroeder, G., Zhao, J., Clifton, G.L. and Moore, A.N.: Serum ceruloplasmin and copper are early biomarkers for TBI-associated elevated intracranial pressure. Mission Connect Research Symposium, Blast Injury Symposium, University of Texas Health Science Center at Houston, 12/04/2009.

Zhao, J., Orsi, S.A., Zhang, M., Grill, R.J., Moore, A.N. and Dash, P.K.: Valproic acid administered after TBI provides neuroprotection and improves cognitive function. Mission Connect Research Symposium, Blast Injury Symposium, University of Texas Health Science Center at Houston, 12/04/2009.