

BIOGRAPHICAL SKETCH

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NAME Yimin Zou	POSITION TITLE Professor and Vice Chair		
eRA COMMONS USER NAME (credential, e.g., agency login) YIMINZOU			
EDUCATION/TRAINING (Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable.)			
INSTITUTION AND LOCATION	DEGREE (if applicable)	MM/YY	FIELD OF STUDY
Dept of Genetics, Fudan University, Shanghai	B.S.	1984-1988	Genetics
University of California, Davis and San Diego	Ph. D.	1989-1995	Biochemistry and Molecular Biology
University of California, San Diego	Postdoctoral Fellowship	1995-1996	With Kenneth R. Chien Developmental Biology with Kenneth R. Chien
University of California, San Francisco	Postdoctoral Fellowship	1996-2000	Developmental Neuroscience with Marc Tessier-Lavigne

A. Personal Statement

My lab studies molecular and cellular mechanisms of axon guidance, synapse formation, and assembly, stability and regeneration of neural circuits. We identify molecular guidance cues that provide directional information for axon wiring *in vivo* as well as signal transduction pathways and cell biological mechanisms underlying growth cone turning. We also study synaptogenesis and how specific synaptic connection patterns emerge from the interplay of molecular guidance system and neural activity. We are interested in how central nervous system responds to traumatic injury and develop therapeutic approaches to promote axonal and neuronal survival to combat degenerative disorders and improve axon regeneration and functional recovery following spinal cord injury.

B. Positions and Honors**Positions and Employment**

12/1996-10/2000	Postdoctoral Fellowship, University of California, San Francisco.
11/2000-04/2006	Assistant Professor, Dept of Neurobiology, Pharmacology and Physiology. The University of Chicago.
05/2006-06/2006	Associate Professor (with tenure), Dept of Neurobiology, Pharmacology and Physiology. The University of Chicago.
07/2006-06/2011	Associate Professor, Neurobiology Section, Biological Sciences Division. University of California, San Diego
07/2011-Present	Full Professor, Neurobiology Section, Biological Sciences Division. University of California, San Diego
07/2012-Present	Vice Chair, Neurobiology Section, Biological Sciences Division. University of California, San Diego

Other Experience and Professional Memberships

Faculty Search Committee, Dept of Neurobiology, Pharmacology and Physiology, U Chicago
Graduate Admission Committees for Developmental Biology and Neurobiology, U Chicago
Organizing Committee, Chicago Signal Transduction Symposium
Curriculum Committee, Committee on Developmental Biology, the University of Chicago
International Graduate Student Admission Committee, Molecular Biosciences, U Chicago
Graduate Student Travel Award Committee, Neurobiology, U Chicago
Neuroscience Task Force, Biological Science Division, U Chicago
Divisional Search Committee for Director of Center for Stem Cell Research and Regenerative Medicine, U Chicago
UCSD Neuroscience Program Recruitment Coordinator (co-chair, 2007-2012)
UCSD/Salk Biology Program Retreat Planning Committee (chair, 2008-2011)
UCSD Kamen Prize Committee for Best Chemistry and Biochemistry Ph.D. Thesis (Chair, 2010-2012)
NIH Training Grant Co-Director: Developmental Biology of Neural Disease (2009-present)
Ad Hoc Member of NIH and DoD Study Sections, European Research Council
NIH NDPR Study Section Regular Member (July 2011- June 2017)
UCSD Academic Senate Faculty Welfare Committee (2011-2013)
Editorial Board: *Developmental Neurobiology*, *Neural Regeneration Research*, *Neuroscience Bulletin* (Associate Editor) and *Frontiers in Biology* (Section Editor)
President, Association of Chinese Neuroscientists (2012&2013)
Medical Advisory Board of HeadNorth Help & Hope for Spinal Cord Injury Survivors (2012-2014)
Selection Committee for the Distinguished Neuroscientist Award by GlaxoSmithKline (GSK) R&D China
UCSD Neurobiology Faculty Search Committee (2012)
UCSD Neurobiology Senior Faculty Search Committee (Chair) (2013)
Member and Secretary of Board of Directors of Ray Wu Memorial Fund (2013-)
Member of Board of Directors of Chinese Biological Investigators Society (CBIS) (2013-)

Honors

1989-1993	CUSBEA Fellowship
1993-1995	Institutional Predoctoral NRSA, NIH
1995-1996	Institutional Postdoctoral NRSA, NIH
1996-1998	Individual Postdoctoral NRSA, NIH
1999-2000	Postdoctoral Fellowship from the Spinal Cord Research Foundation
2002-2005	Schweppe Foundation Career Development Award
2002-2004	March of Dimes Basil O'Connor Starting Scholar Research Award
2003-2005	Alfred P. Sloan Research Fellow Award
2003	W. M. Keck Foundation Research Achievement Award (Semi-finalist in Keck Young Scholar Competition)
2005	<u>Chair</u> of "Minisymposium on Wnt Signaling in Neural Circuit Development" at Society for Neuroscience Meeting. Washington, DC.
2006	<u>Gail Beach Memorial Seminar Series</u> at the University of Miami Miller School of Medicine. Miami, Florida
2006	<u>Keynote Speaker</u> at Midwest Student Biomedical Research Forum. Omaha, Nebraska.
2008	<u>Chair</u> of "Symposium on Genetic determinants specifying neuronal connections" at Society for Neuroscience Meeting. Washington, DC.
2009	<u>Killam Research Seminar</u> the Montreal Neurological Institute McGill University. Montreal, Canada.
2011	<u>Chair</u> of Symposium Organizer: Signaling and cell biological mechanisms of growth cone guidance at 8th IBRO World Congress of Neurosciences. Florence Italy
2011	<u>Organizer</u> of Cold Spring Harbor Asia Meeting on Neural Circuits. Suzhou China
2012	<u>S. T. Huang-Chan Memorial Lecture</u> Hong Kong University, Hong Kong, China
2013	<u>Organizer</u> of Cold Spring Harbor Asia Meeting on Neural Circuits. Suzhou China
2013-	Member of Board of Directors of Ray Wu Memorial Fund and CBIS
2013-2016	Honorary Professor of the University of Hong Kong

C. Selected Peer-reviewed Publications

Most relevant to the current application

1. Anna I. Lyuksyutova, Chin-Chun Lu, Nancy Milanesio, Leslie A. King, Nini Guo, Yanshu Wang, Jeremy Nathans, Marc Tessier-Lavigne and Yimin Zou*. Anterior-posterior guidance of commissural axons by Wnt-Frizzled signaling. **Science**. 2003. 302, 1984-1988. (PMC Journal-In process). (Evaluated by Faculty of 1000 Biology).
2. Yaobo Liu, Jun Shi, Chin-Chun Lu, Zheng-Bei Wang, Xuejun Song and Yimin Zou*. Anterior-posterior guidance of corticospinal tract axons by conserved repulsive Wnt-Ryk interaction. **Nature Neuroscience**. 2005. 8(9):1151-9. (PMC Journal-In process). (Evaluated by Faculty of 1000 Biology)
3. Adam Schmitt, Jun Shi, Alex Wolf, Chin-Chun Lu, Leslie A. King and Yimin Zou*. Wnt-Ryk signaling mediates medial-lateral retinotectal topographic mapping. **Nature**. 2006. 439(7072):31-7. (PMC Journal-In process). (Evaluated by Faculty of 1000 Biology)
4. Alex M. Wolf, Anna I. Lyuksyutova, Ali G. Fenstermaker, Beth Shafer, Charles G. Lo and Yimin Zou*. PI3K-atypical PKC signaling is required for Wnt attraction and anterior-posterior axon guidance. **Journal of Neuroscience**. 2008. 28(13):3456-3467. (PMC Journal-In process).
5. Yaobo Liu, Xiaofei Wang, Chin-Chun Lu, Rachel Kermen, Oswald Steward*, Xiao-Ming Xu* and Yimin Zou*. Repulsive Wnt signaling inhibits axon regeneration following central nervous system injury. **Journal of Neuroscience**. 2008. 28(33):8376-8382. (PMC Journal-In process). (Evaluated by Faculty of 1000 Biology)
6. Elizabeth K. Davis, Yimin Zou and Anirvan Ghosh*. Wnts acting through canonical and non-canonical pathways exert opposite effects on hippocampal synapse formation. **Neural Development**. November 5, 2008. 3:32. Doi:10.1186/1749-8104-3-32. PMC2596118.
7. Liseth Parra and Yimin Zou*. Sonic hedgehog induces response of spinal cord commissural axons to Semaphorin repulsion during midline crossing. **Nature Neuroscience**. **Nature Neuroscience**. 2010 Jan;13(1):29-35. (Evaluated by Faculty of 1000 Biology)
8. Ali G. Fenstermaker, Asheeta Prasad, Ahmad Bechara, Youri Adolfs, Fadal Tissir, Andre Goffinet, Yimin Zou, Y*, R. Jeroen Pasterkamp*. Wnt-Planar Cell Polarity signaling controls the anterior-posterior organization of monoaminergic axons in the brainstem. **Journal of Neuroscience**. 2010. 30(47):16053-16064.
9. Beth Shafer, Charles Lo, Keisuke Onishi and Yimin Zou*. Vangl2 Promotes Wnt/Planar Cell Polarity-like Signaling by Antagonizing Dvl1-Mediated Feedback Inhibition in Growth Cone Guidance. **Developmental Cell**. 2011 Feb 15;20(2):177-91.
10. Kristen N. Fantetti, Yimin Zou and Donna M. Fekete*. Wnts and Wnt inhibitors do not influence axon outgrowth from chicken statoacoustic ganglion neurons. **Hearing Res**. 2011 Aug;278(1-2):86-95.
11. Edmund Hollis II and Yimin Zou*. Re-induced Wnt-Ryk signaling limits regeneration potential of sensory axons in the spinal cord following conditioning lesion. **Proc Natl Acad Sci U S A**. 2012 Aug 17. [Epub ahead of print].
12. Anna Tury, Kristine Tolentino and Yimin Zou*. Altered expression of atypical PKC and Ryk in the spinal cord of a mouse model of amyotrophic lateral sclerosis. **Dev Neurobiol**. 2013 Oct 7. doi: 10.1002/dneu.22137. [Epub ahead of print]
13. Keisuke Onishi, Beth Shafer, Charles Lo, Fadel Tissir, Andre M. Goffinet and Yimin Zou*. Antagonistic functions of Dishevelleds regulate Frizzled3 recycling via filopodia tips in Wnt-mediated growth cone guidance. **Journal of Neuroscience**. 2013 Dec 4;33(49):19071-85. doi: 10.1523/JNEUROSCI.2800-13.2013.

* Corresponding Author

Additional selected recent publications of importance to the field (in chronological order)

1. Yimin Zou, Esther Stoeckli, Hang Chen, and Marc Tessier-Lavigne*. Squeezing axons out of the gray matter: A role for slit and semaphorin proteins from midline and ventral spinal cord. **Cell**. 2000. 102, 363-375. (PMC Journal-In process).
2. Elke Stein, Yimin Zou, Mu-ming Poo, and Marc Tessier-Lavigne*. Binding of DCC by Netrin-1 to mediate axon guidance independent of adenosine A2B receptor activation. **Science**. 2001. 291, 1976-1982. (PMC Journal-In process).
3. Yimin Zou*, Florian Engert and Huizhong Tao. Meeting review on "the Assembly of Neural Circuits". **Neuron**. 2004. 43:1-5. (PMC Journal-In process).
4. Yimin Zou*. Wnt signaling in axon guidance. **Trends in Neurosciences**. 2004. 27(9): 528-532. (PMC Journal-In process).

5. Yimin Zou*. Navigating the anterior-posterior axis with Wnts. *Neuron*. 2006 Mar 16;49(6):787-9. (PMC Journal-In process).
6. Yimin Zou* and Anna I. Lyuksyutova. Morphogens in axon guidance. *Current Opinions in Neurobiology*. 2007 Jan 29. (PMC Journal-In process).
7. Patricia Salina* and Yimin Zou*. Wnt signaling and neuronal circuit assembly. *Annu Rev Neurosci*. 2008 Jul 21;31:339-358. (PMC Journal-In process).
8. Barry Dickson* and Yimin Zou*. Navigating intermediate targets: the nervous system midline. *Chapter in Cold Spring Harbor Perspectives in Biology "Neuronal Guidance"*. 2010.
9. Edmund Hollis and Yimin Zou*. Expression of the Wnt signaling system in central nervous system axon guidance and regeneration. *Frontiers in Molecular Neuroscience*. 2012;5:5. Epub 2012 Feb 2.
10. Yimin Zou*. Does planar cell polarity signaling steer growth cones? *Current Topics in Developmental Biology*. 2012. 101C:141-160.

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D. Research Support
Ongoing Research Support

1. R01 NS047484 12/01/2003 - 2/28/2014

NIH/NINDS

"Characterizing Wnt signaling pathways in axon guidance"

The major goal of this project is to understand the molecular and cellular mechanisms of axon guidance during nervous system development.

2. International Foundation for Research in Paraplegia 4/4/2012-3/31/2014

"Functional recovery of the motor system after spinal cord injury"

The major goal is to achieve motor function recovery after spinal cord injury

3. 1R21MH099082 9/18/2012-7/31/2014

"Wnt/planar cell polarity signaling in synapse formation"

The major goal is to understand the molecular and cellular mechanisms of synapse assembly.

4. 1R21NS081738 4/01/2013 - 3/31/2015

"Combinatorial approaches to maximize axon regeneration after spinal cord injury"

The major goal is enhance intrinsic growth state and overcome extrinsic inhibition to repair sensory pathways.

5. ALS Association 12/01/2012-11/30/2015

"Axon degeneration in ALS models"

The major goal is to test the role of axon survival pathway in ALS pathogenesis.

6. March of Dimes

"Synapse formation" 7/01/2013 – 6/30/2016

The major goal is to study the role of apical-basal polarity signaling components in synapse development.

Completed Research Support

1. R01 NS046357 10/1/06-12/31/08

NIH/NINDS

"Signaling Pathways in Axon Pathfinding"

The goal was to understand how Semaphorins and Slit signaling pathways interact with each other in mediating midline repulsion of commissural axons.

2. Packard ALS Center at Johns Hopkins grant 10/01/2003-09/31/2012

"Motor Axon Degeneration and ALS"

The major goal is to understand the signaling mechanisms leading to the survival of motor neuron axons and cell bodies in normal development and neurodegenerative disorders.

3. Roman Reed Foundation 1/01/2012-12/31/2012

"Combinatorial approaches for cortical motor axon regeneration"

The major goal is to combine Wnt signaling manipulation and pTEN deletion to maximize regeneration.

4. Wings for Life Foundation on Spinal Cord Injury 7/01/2011-6/30/2013

"Wnt signaling in corticospinal tract axon regeneration"

The major goal is to develop therapeutic tools to block axon retraction and promote regeneration.