BIOGRAPHICAL SKETCH

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NAME	POSITION TITLE
Lin Wang, M.D., Ph.D.	Associate Scientist
eRA COMMONS USER NAME (credential, e.g., agency login)	

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
Xuzhou Medical College, China	M.D.	3/1978	Medicine
Tongji Medical University, China	M.S.	6/1989	Ophthalmology
Uppsala University, Sweden	Ph.D.	5/1997	Physiology

A. Positions and Honors

Ophthalmologist, Institute of Eye Diseases, Xuzhou, Jiangsu, China.	1978-1986
Research student, MS in ophthalmology, Tongji Medical University, China	1986-1989
Research fellow, Inst. of Physiology & Medical Biophysics, Uppsala University, Sweden	1989-1993
Research student, Ph.D. Physiology, Uppsala University, Sweden.	1993-1997
Post-Doc fellow, Discoveries in Sight, Devers Eye Institute, Portland, Oregon	1997-1999
Assistant Scientist, Discoveries in Sight, Devers Eye Institute, Portland, Oregon	1999-2009
Associate Scientist, Discoveries in Sight, Devers Eye Institute, Portland, Oregon	2009-

Honored Research Student, Tongji Midical University	1987
Honor Award, Outstanding Senior Student, Tongji Midical University	1989
Uppsala University Research Fellowship, Uppsala University, Sweden	1994-1997
Excellent Research Award, Dept of Science & Education, Hubei, China	2000

Membership: The Association for Research in Vision and Ophthalmology
Association of Ocular Circulation

B. Publications

1. Shih YY, **Wang L**, De La Garza BH, et al. Quantitative retinal and choroidal blood flow during light, dark adaptation and flicker light stimulation in rats using fluorescent microspheres. Current eye research 2013;38:292-298.
2. Piper C, Fortune B, Cull G, Cioffi GA, **Wang L**. Basal blood flow and autoregulation changes in the optic nerve of rhesus monkeys with idiopathic bilateral optic atrophy. Investigative ophthalmology & visual science 2013;54:714-721.
3. Abbott C, Choe T, Lusardi T, Burgoyne C, **Wang L**, Fortune F. Imaging axonal transport in the rat visual pathway. Biomedical Optics Express 2013.
4. **Wang L**, Cull GA, Piper C, Burgoyne CF, Fortune B. Anterior and posterior optic nerve head blood flow in nonhuman primate experimental glaucoma model measured by laser speckle imaging technique and microsphere method. Investigative ophthalmology & visual science 2012;53:8303-8309.
5. Gardiner SK, Fortune B, **Wang L**, Downs CJ, Burgoyne CF. Intraocular Pressure Magnitude and Variability as Predictors of Rates of Structural Change in Non-Human Primate Experimental Glaucoma. Exp Eye Res 2012,103C:1-8. PMID: 22960316

6. Reynaud J, Cull G, **Wang L**, et al. Automated quantification of optic nerve axons in primate glaucomatous and normal eyes--method and comparison to semi-automated manual quantification. Invest Ophthalmol Vis Sci 2012;53:2951-2959. PMID: 22467571
7. Fortune B, Burgoyne CF, Cull GA, Reynaud J, **Wang L**. Structural and functional abnormalities of retinal ganglion cells measured in vivo at the onset of optic nerve head surface change in experimental glaucoma. Invest Ophthalmol Vis Sci 2012;53:3939-3950. PMID: 22589428
8. Fortune B, Choe TE, Reynaud J, Hardin C, Cull GA, Burgoyne CF and **Wang L**. Deformation of the rodent optic nerve head and peripapillary structures during acute intraocular pressure elevation. Invest Ophthalmol Vis Sci, 2011:52(9):6651-61. PMID: 21730343.
9. Liang Y, Fortune B, Cull GA, Cioffi GA, **Wang L**. Quantification of Dynamic Blood Flow Autoregulation in Optic Nerve Head of Rhesus Monkeys. Exp Eye Res 2010;90:203-209. PMID: 19853603
10. Stowell C, **Wang L**, Arbogast B, Lan J-Q, Cioffi G.A, Burgoyne CF, and Zhou A. "Retinal proteomic changes under different ischemic conditions - implication of an epigenetic regulatory mechanism." Int J Physiol Pathophysiol Pharmacol. 2010; 2(2):148-160 PMID: 20740046
11. Liang Y, Downs JC, Fortune B, Cull GA, Cioffi GA, **Wang L**. Impact of Systemic Blood Pressure on the Relationship between Intraocular Pressure and Blood Flow in the Optic Nerve Head of Non-Human Primates. Invest Ophthalmol Vis Sci 2009;50:2164-2160. PMID: 19074806
12. **Wang L**, Grant C, Fortune B, Cioffi GA. Retinal and choroidal vasoreactivity to altered PaCO2 in rat measured with a modified microsphere technique. *Exp Eye Res* 2008;86:908-913. PMID: 18420196
13. Fortune B, **Wang L**, Cull G, et al. Intravitreal Colchicine Causes Decreased RNFL Birefringence without Altering RNFL Thickness. *Invest Ophthalmol Vis Sci.* 2008;49:255-61 PMID: 18172100
14. **Wang L**, Fortune B, Cull G, et al. Microspheres method for ocular blood flow measurement in rats: size and dose optimization. *Exp Eye Res*. 2007;84:108-17. PMID: 17069799
15. **Wang L**, Fortune B, Cull G, et al. Endothelin B Receptor in Human Glaucoma and Experimentally Induced Optic Nerve Damage. *Arch Ophthalmol*. 2006;124:717-24. PMID: 16682595
16. Fortune B, **Wang L**, Bui BV, et al. Idiopathic bilateral optic atrophy in the rhesus macaque. *Invest Ophthalmol Vis Sci*. 2005;46:3943-56. PMID: 16249467
17. Fortune B, Bui BV, Cull G, **Wang L**, et al. Inter-ocular and inter-session reliability of the electroretinogram photopic negative response (PhNR) in non-human primates. *Exp Eye Res*. 2004;78:83-93. PMID: 14667830
18. Cioffi GA, **Wang L**, Fortune B, et al. Chronic ischemia induces regional axonal damage in experimental primate optic neuropathy. *Arch Ophthalmol.* 2004;122:1517-25. PMID: 15477464
19. **Wang L**, Dong J, Cull G, et al. Varicosities of intraretinal ganglion cell axons in human and nonhuman primates. *Invest Ophthalmol Vis Sci*. 2003;44:2-9. PMID: 12506048
20. Fortune B, **Wang L**, Bui BV, et al. Local ganglion cell contributions to the macaque electroretinogram revealed by experimental nerve fiber layer bundle defect. *Invest Ophthalmol Vis Sci*. 2003;44:4567-79. PMID: 14507906
21. Cull G, Cioffi GA, Dong J, Homer L, **Wang L**. Estimating normal optic nerve axon numbers in non-human primate eyes. *J Glaucoma*. 2003;12:301-6. PMID: 12897574
22. Bui BV, Fortune B, Cull G, **Wang L**. Cioffi, G. A. Baseline characteristics of the transient pattern electroretinogram in non-human primates: inter-ocular and inter-session variability. *Exp Eye Res*. 2003;77:555-66. PMID: 14550397
23. **Wang L**, Cioffi GA, Cull G, et al. Immunohistologic evidence for retinal glial cell changes in human glaucoma. *Invest Ophthalmol Vis Sci*. 2002;43:1088-94. PMID: 11923250
24. Fortune B, Cull G, **Wang L**, et al. Factors affecting the use of multifocal electroretinography to monitor function in a primate model of glaucoma. *Doc Ophthalmol*. 2002;105:151-78. PMID: 12462442
25. **Wang L**, Cull G, Cioffi GA. Depth of penetration of scanning laser Doppler flowmetry in the primate optic nerve. *Arch Ophthalmol*. 2001;119:1810-4. PMID: 11735792

26. Sullivan P, Cioffi GA, **Wang L**, et al. The influence of ocular pulsatility on scanning laser Doppler flowmetry. *Am J Ophthalmol*. 1999;128:81-7. PMID: 1048209
27. Cioffi GA, **Wang L**. Optic nerve blood flow in glaucoma. *Semin Ophthalmol*. 1999;14:164-70. PMID: 10790581
28. Bhandari A, Cioffi GA, Van Buskirk EM, **Wang L**. Effect of brimonidine on optic nerve blood flow in rabbits. *Am J Ophthalmol*. 1999;128:601-5. PMID: 10577528
29. **Wang L**, Cioffi GA, Van Buskirk EM. The vascular pattern of the optic nerve and its potential relevance in glaucoma. *Curr Opin Ophthalmol*. 1998;9:24-9. PMID: 10180509
30. **Wang L**, Tornquist P, Bill A. Glucose metabolism of the inner retina in pigs in darkness and light. *Acta Physiol Scand*. 1997;160:71-4. PMID: 9179313
31. **Wang L**, Tornquist P, Bill A. Glucose metabolism in pig outer retina in light and darkness. *Acta Physiol Scand*. 1997;160:75-81. PMID: 9179314
32. **Wang L**, Kondo M, Bill A. Glucose metabolism in cat outer retina. Effects of light and hyperoxia. *Invest Ophthalmol Vis Sci*. 1997;38:48-55. PMID: 9008629
33. **Wang L**, Bill A. Effects of constant and flickering light on retinal metabolism in rabbits. *Acta Ophthalmol Scand*. 1997;75:227-31. PMID: 9253962
34. Kondo M, **Wang L**, Bill A. The role of nitric oxide in hyperaemic response to flicker in the retina and optic nerve in cats. *Acta Ophthalmol Scand.* 1997 Jun;75(3):232-5. PMID: 9253963
35. Granstam E, **Wang L**, Bill A. Vascular effects of endothelin-1 in the cat; modification by indomethacin and L-NAME. *Acta Physiol Scand* 1993;148:165-176.PMID: 8352028
36. **Wang L**, Bill A, Sperber GO. Blood supply and nutrition of the retina in rabbits: Effect of light. In: Lutjen-Drecoll E, Rohen JW (eds), *Basic Aspects of Glaucoma Research III.* Stuttgart - New York: Schattauer; 1993:167-177
37. Granstam E, **Wang L**, Bill A. Ocular effects of endothelin-1 in the cat. *Curr Eye Res* 1992;11:325-332.PMID: 1526164
38. Granstam E, **Wang L**, Bill A. Effects of endothelins (ET-1, ET-2 and ET-3) in the rabbit eye; role of prostaglandins. *Eur J Pharmacol* 1991;194:217-223.PMID: 2060603
39. **Wang L**, Wei HR, Zeng SQ, Lu YS, Zhang SJ. [Tissue culturing and ultrastructural observation of human trabecular cells]. *Chung Hua Yen Ko Tsa Chih* 1989;25:97-99. PMID: 2507261

C. <u>Active support</u>:

R01EY019939 (Wang, L) 7/1/10 – 6/31/15 7.2 calendar
NIH/NEI Annual Direct Costs: $250,000
Dynamic and Static Autoregulation Impairment in the Optic Nerve Head of Glaucoma
The major goals of this project are to investigate the longitudinal blood flow and autoregulatory capacity changes and potential underlying mechanism in a chronic glaucoma model of non-human primates.

Glaucoma Research Foundation 2013 (Wang, L) 2/16/13 – 2/15/14 1.2 calendar
GRF Annual Direct Costs: $40,000
Noninvasive assessment of dynamic autoregulation in optic nerve head
The goal of this project is to characterize and build a normal database of blood flow dynamic autoregulation in human optic nerve evoked by different noninvasive techniques and its test-retest reliability.

R01EY019327 (Fortune, B) 11/1/09 – 10/31/13 2.4 calendar
NIH/NEI Annual Direct Costs: $250,000
Axonal cytoskeletal changes in experimental glaucoma

The major goals of this project are to use clinical imaging tools and retinal functional tests to detect an early stage of glaucomatous damage to optic nerve axons that is characterized by abnormalities of the cytoskeleton.

R21 EY021311 (Fortune, B) 4/1/2011 - 3/31/2013 2.4 calendar
NIH/NEI Annual Direct Costs: $250,000
Imaging retinal astrocytes, ganglion cells and axonal transport in vivo
The goal of this project is to develop methods for evaluating two groups of cells and aspects of their function in the living eye using specialized imaging techniques.

Pending:
N/A

Previous support:

Pfizer Inc. Unrestricted Research Grant (Wang, L) 1/1/2008-12/31/09
Assessment of Ocular Blood Flow in Glaucoma
Major Goals: To longitudinally examine the optic nerve blood flow and the autoregulatory capacity, and to correlate the relationship between the hemodynamic and structural changes in a chronic glaucoma model of non-human primates.

NIH/NEI/NIBIB: R21 EY016149 (Downs JC) 9/30/07 - 8/31/09
Three-dimensional Reconstruction of Optic Nerve Heads
Major Goals: The major goals of this project are to design, construct, and develop an experimental serial sectioning and fluorescent imaging device capable of generating high-resolution, simultaneous, co-localized three-dimensional reconstructions of the vasculature and connective tissues of the optic nerve head.

NIH/NEI: R21EY017345-01 (Zhou, A) 07/01/06 – 06/30/08
Neuropeptide processing and ischemic retina injury
The major goal of this project is to obtain a thorough understanding of neuropeptide processing in the retina and its role in regulating the retina's response to injurious stresses.

Glaucoma Research Foundation (Wang, L) 01/01/06 – 12/31/06
Ocular Blood Flow in a Rat Model of Chronically Increased Intraocular Pressure.
The major goal of this project is to investigate the relationship of ocular blood flow and chronically increased intraocular pressure in glaucomatous rat model.

NIH/NEI: R01EY017345-01 (Van Buskirk, EM and Cioffi, GA) 012/01/96 – 04/30/04
Uveal vasculature: optic nerve microcirculation
The major goal of this project is to test that the anterior optic nerve is specially susceptiable to microcirculatory compromise, causing or ontribution to the developemetn fo glaucomatous optic neuropathy.