

Yirong Yang

POSITION TITLE

- 05/2011 - present **MRI Scientist and Core Manager**
Preclinical Imaging Core, Brain and Behavioral Health Institute
University of New Mexico Health Science Center, Albuquerque, NM
Research Assistant Professor
Department of Pharmaceutical Sciences, College of Pharmacy
University of New Mexico Health Science Center, Albuquerque, NM
- 01/2011-05/2011 **Post-doctoral Fellow**
Image Processing Core, Center for Neuroscience and Regenerative
Medicine
The Henry M. Jackson Foundation for the Advancement of Military Medicine,
Inc., Bethesda, MD
- 05/2008-12/2010 **Post-doctoral Fellow**
Advanced Imaging Center, Evanston Hospital, Northwestern University,
Evanston, IL

EDUCATION

- Ph.D. in BioEngineering** December 2007
University of Illinois, Chicago, Illinois, U.S.A.
Dissertation: "Quantitative Analysis and Improvement of Retinal Image Quality"
Concentration: Signal/Image Processing and Analysis, Biomedical Imaging
- M.S. in Electrical Engineering** April 2003
Zhejiang University, Hangzhou, Zhejiang, China
Thesis: "Embedded Web-based Real-time Ethernet Distributed Control System"
Concentration: Control Theory and Control Engineering
- B.S. in Electrical Engineering** June 2000
Zhejiang University, Hangzhou, Zhejiang, China
Final Year Project Thesis: "Automatic Calibration System for I/O Cards of Distributed Control
System"
Concentration: Industry Automation
- Certificate in Bruker Preclinical PET Training** June 2018
Bruker Biospin Corp., Billerica, Massachusetts, U.S.A.

Certificate in Bruker Preclinical MRI Training
Bruker Biospin Corp., Billerica, Massachusetts, U.S.A.

June 2019 and November 2011

Certificate in Summer School on Adaptive Optics
The Center for Adaptive Optics, University of California, Santa Cruz, California, U.S.A.

August 2006

PROFESSIONAL EXPERIENCE

Research Assistant Professor, Department of Pharmaceutical Sciences; MRI Scientist and Core Manager, Preclinical Imaging Core, UNM Health Sciences Center, University of New Mexico, Albuquerque, NM, 05/2011 - Present

Post Doctoral Fellow, Image Processing Core, The Center for Neuroscience and Regenerative Medicine, The Henry M. Jackson Foundation for the Advancement of Military Medicine and National Institutes of Health, Rockville, MD, 01/2011 – 05/2011

Post Doctoral Fellow in Research, Evanston Hospital, NorthShore University HealthSystem (Previously Known as Evanston Northwestern Healthcare and Northwestern University), Evanston, IL, 06/2008 – 12/2010

Research Assistant/Associate, Department of Pathology, 08/2006 – 05/2008
Research Assistant, Department of Ophthalmology and Visual Sciences, 09/2003 - 05/2007
Research Assistant, Department of Biochemistry and Molecular Genetics, 01/2006 - 08/2006
Research Assistant, Department of Bioengineering, 01/2003 - 09/2003
Research Assistant, Department of Electrical Engineering, Zhejiang University, Zhejiang, China, 06/2000 - 12/2002
University of Illinois at Chicago, IL, 01/2003 – 05/2008

R&D Engineer, Zheda Fangyuan Co Ltd, Zhejiang, China, 09/2000 – 09/2002

Software Engineer, SUPCON GROUP Co Ltd, Zhejiang, China, 09/1999 - 09/2000

HONORS AND AWARDS

- Distinguished Service Award, International Society for Magnetic Resonance in Medicine, 2015
- UIC Graduate Research Assistantship and Tuition & Fee Waiver, 2003 – 2007
(*The funds total more than \$180,000.*)
- UIC Graduate College Student Travel Award, 2007
- UIC Provost's Award for Graduate Research, 2006
- UIC Graduate Student Council Travel Award, 2006
- Xi Wang Shen Lan Award for Outstanding Graduate Student, Zhejiang University, 2002

- (one selected from among 400 graduate students in College of Electrical Engineering)*
- Outstanding Graduate Student Award, Zhejiang University, 2001-2002
(one of ten selected from among 400 graduate students in College of Electrical Engineering)
 - Ikeda Award for Best Student Paper, Joint International Conference on Advanced Sciences and Technologies, Shizuoka University and Zhejiang University, 2001
 - Outstanding Undergraduate Student Award, Zhejiang University, 1996-1998
(one selected from among 40 undergraduate students in a class)

PROFESSIONAL ACTIVITIES

2015	Reviewer, HISTOLOGY AND HISTOPATHOLOGY
2015 -	Reviewer, World Journal of Surgical Oncology
2014 -	Reviewer, International Journal of Imaging Systems and Technology
2014 -	Reviewer, PLOS ONE
2013 -	Reviewer, The Journal of Magnetic Resonance Imaging
2013 -	Abstract Reviewer, Joint Annual Meeting ISMRM-ESMRMB
2008 -	Member, International Society for Magnetic Resonance in Medicine
2003 -	Member, Institute of Electrical and Electronics Engineers
2002 -	Session Chair, International Conference on Control and Automation

GRANT SUPPORT

01/01/2019-12/31/2019	College of Pharmacy Pilot Project "Blood occluding as a biomarker for cerebral ischemia induced hemorrhage" Role: Co-PI
09/22/2016-09/21/2017	1S10OD021598-01, National Institutes of Health "Purchase of a high gradient strength 7T 30 cm bore magnetic resonance imaging scanner" Role: KP
01/20/2015-12/31/2015	HSC-22417, Lovelace Respiratory Research Institute "Animal MRI Scan Service to LRRI" Role: PI
09/01/2013-08/31/2018	5R01NS082225, National Institute of Neurological Disorders and Stroke "In Vivo Inhibition of Specific Micrnas to Support Post-stroke Revascularization" Role: KP
03/15/2011-02/29/2016	5P30GM103400, National Institute of General Medical Sciences "Integrative Program in CNS Pathophysiology Research" Role: KP

07/01/2013-06/30/2015

13GRNT17060032, American Heart Association
"Neurovascular Remodeling after Ischemic Stroke"
Role: KP

PUBLICATIONS

Book

1. Yirong Yang:" Quantitative Analysis and Improvement of Retinal Image Quality," VDM Verlag Dr. Mueller e.K. Publisher, 2008.

Journal Articles

- Laurel O Sillerud, **Yirong Yang**, Lisa Y Yang, Kelsey B Duval, Jeffrey Thompson, Yi Yang. Longitudinal monitoring of microglial/macrophage activation in ischemic rat brain using Iba-1-specific nanoparticle-enhanced magnetic resonance imaging. J Cereb Blood Flow Metab, 2020 Sep 22; Online ahead of print.
- Maphis NM, Peabody J, Crossey E, Jiang S, Jamaledin Ahmad FA, Alvarez M, Mansoor SK, Yaney A, **Yang Y**, Sillerud LO, Wilson CM, Selwyn R, Brigman JL, Cannon JL, Peabody DS, Chackerian B, Bhaskar K.Qβ Virus-like particle-based vaccine induces robust immunity and protects against tauopathy. NPJ Vaccines. 2019 Jun 3;4:26. doi: 10.1038/s41541-019-0118-4. eCollection 2019.
- Robinson S, Winer JL, Chan LAS, Oppong AY, Yellowhair TR, Maxwell JR, Andrews N, **Yang Y**, Sillerud LO, Meehan WP 3rd, Mannix R, Brigman JL, Jantzie LL. Extended Erythropoietin Treatment Prevents Chronic Executive Functional and Microstructural Deficits Following Early Severe Traumatic Brain Injury in Rats. Front Neurol. 2018 Jun 19;9:451. doi: 10.3389/fneur.2018.00451. eCollection 2018.
- **Yang Y**, Yang L, Orban L, Cuylear D, Thompson J, Simon B, Yang Y. (2018) Non-Invasive Vagus Nerve Stimulation Reduces Blood-Brain Barrier Disruption in a Rat Model of Ischemic Stroke. Brain Stimulation, pii: S1935-861X(18)30064-0.
- Robinson S, Corbett CJ, Winer JL, Chan LAS, Maxwell JR, Anstine CV, Yellowhair TR, Andrews NA, **Yang Y**, Sillerud LO, Jantzie LL. (2017) Neonatal erythropoietin mitigates impaired gait, social interaction and diffusion tensor imaging abnormalities in a rat model of prenatal brain injury. Exp Neurol, 302:1-13.
- Rheological effects of drag-reducing polymers improve cerebral blood flow and oxygenation after traumatic brain injury in rats. Bragin DE, Kameneva MV, Bragina

OA, Thomson S, Statom GL, Lara DA, **Yang Y**, Nemoto EM. J Cereb Blood Flow Metab. 2017 Mar;37(3):762-775.

- Microstructural and microglial changes after repetitive mild traumatic brain injury in mice. Robinson S, Berglass JB, Denson JL, Berkner J, Anstine CV, Winer JL, Maxwell JR, Qiu J, **Yang Y**, Sillerud LO, Meehan WP 3rd, Mannix R, Jantzie LL. J Neurosci Res. 2017 Apr;95(4):1025-1035.
- Zinc contributes to acute cerebral ischemia-induced blood-brain barrier disruption. Qi Z, Liang J, Pan R, Dong W, Shen J, **Yang Y**, Zhao Y, Shi W, Luo Y, Ji X, Liu KJ. Neurobiol Dis. 2016 Nov;95:12-21.
- High Intracranial Pressure Induced Injury in the Healthy Rat Brain. Dai X, Bragina O, Zhang T, **Yang Y**, Rao GR, Bragin DE, Statom G, Nemoto EM. Crit Care Med. 2016 Aug;44(8):e633-8
- Imaging and serum biomarkers reflecting the functional efficacy of extended erythropoietin treatment in rats following infantile traumatic brain injury. Robinson S, Winer JL, Berkner J, Chan LA, Denson JL, Maxwell JR, **Yang Y**, Sillerud LO, Tasker RC, Meehan WP 3rd, Mannix R, Jantzie LL. J Neurosurg Pediatr. 2016 Jun;17(6):739-55.
- In Vivo Inhibition of miR-155 Promotes Recovery after Experimental Mouse Stroke. Caballero-Garrido E, Pena-Philippides JC, Lordkipanidze T, Bragin D, **Yang Y**, Erhardt EB, Roitbak T. J Neurosci. 2015 Sep 9;35(36):12446-64.
- **Yang Y**, Salayandia VM, Thompson JF, Yang LY, Estrada EY, Yang Y. Attenuation of acute stroke injury in rat brain by minocycline promotes blood-brain barrier remodeling and alternative microglia/macrophage activation during recovery. J Neuroinflammation. 2015 Feb 10;12(1):26.
- Pena-Philippides JC, **Yang Y**, Bragina O, Hagberg S, Nemoto E, Roitbak T. Effect of Pulsed Electromagnetic Field (PEMF) on Infarct Size and Inflammation After Cerebral Ischemia in Mice. Transl Stroke Res. 2014 Feb 20.
- Weaver J, **Yang Y**, Purvis R, Weatherwax T, Rosen GM, Liu KJ. In vivo evidence of methamphetamine induced attenuation of brain tissue oxygenation as measured by EPR oximetry. Toxicol Appl Pharmacol. 2014 Mar 1; 275(2):73-8.
- Gann PH, Deaton R, Amatya A, Mohnani M, Rueter EE, **Yang Y**, Ananthanarayanan V. (2013) Development of a nuclear morphometric signature for prostate cancer risk in negative biopsies. PLoS One, 8(7):e69457.

- Yang Y., Thompson J.F., Taheri S., Salayandia V.M., Mcavoy T.A., Hill J.W., **Yang Y.**, Estrada E.Y., Rosenberg G.A. (2013) Spatiotemporal involvement of pericytes, astrocytes, and MMPs in functional neurovascular remodeling during stroke recovery in rat brain. *Journal of Cerebral Blood Flow & Metabolism*, 33(7):1104-14.
- Drobyshevsky A., Yu L., **Yang Y.**, Khalid S., Luo K., Jiang R., Ji H., Derrick M, Kay L., Silverman R.B., Tan S. (2012) Antenatal Insults Modify Newborn Olfactory Function By Nitric Oxide Produced From Neuronal Nitric Oxide Synthase. *Experimental Neurology*, 237(2), 427-434.
- Jin X., Liu J, Yang Y., Liu K, **Yang Y.**, Liu W. (2012). Spatiotemporal evolution of blood brain barrier damage and tissue infarction within the first 3 hours after ischemia onset. *Neurobiology of Disease*, 48(3), 309-316.
- Rao S., Lin Z., Drobyshevsky A., Chen L., Ji X., Ji H., **Yang Y.**, Yu Y., Derrick M., Silverman R.B., Tan S. (2011). Involvement of Neuronal Nitric Oxide Synthase in Ongoing Fetal Brain Injury following Near-Term Rabbit Hypoxia-Ischemia. *Developmental Neuroscience*, 33(3-4), 288-298.
- Derrick M, Drobyshevsky A, Ji X, Chen L, **Yang Y**, Ji H, Silverman RB, Tan S. Hypoxia-ischemia causes persistent movement deficits in a perinatal rabbit model of cerebral palsy: assessed by a new swim test. *International Journal of Developmental Neuroscience* 2009; 27(6): 549-557.
- **Yirong Yang**, Justin Wanek, and Mahnaz Shahidi. Representing the retinal line spread shape with mathematical functions. *Journal of Zhejiang University Science B* 2008; 9(12): 996-1002.
- Mahnaz Shahidi, **Yirong Yang** etc. A method for differentiating ocular higher-order aberrations from light scatter applied to retinitis pigmentosa. *Optometry and Vision Science*, 2005; 82:976-80.
- Mahnaz Shahidi, **Yirong Yang**. Measurements of ocular aberrations and light Scatter in healthy subjects. *Optometry and Vision Science* 2004; 81: 853-7.
- **Yirong Yang**, Shanan Zhu and Qipeng Hu. Embedded web-based real-time distributed control system. *Industrial Control Computer* 2003; 16: 48-50.
- **Yirong Yang** and Shanan Zhu etc. An remote virtual thermal control Lab based-on Internet. *Thermal Power Generation* 2003; 32: 60- 63.

- Xiaorui Ying, **Yirong Yang**, Qipeng Hu and Shanan Zhu. The application of Java applet in an embedded remote level control system. Industrial Control Computer 2003; 16: 30-31.
- **Yirong Yang**, Shanan Zhu and Jing Ming. Research of Ethernet/IP applied in industrial real-time control. Mechanical and Electrical Engineering Magazine 2002; 19: 39-42.
- Helei Wu, **Yirong Yang**, You Wei. An analysis on a failure occurred in output circuit breaker of water turbine and its remedy. East China Electric Power 2001; 29:38-39.
- **Yirong Yang** and Shanan Zhu. Design of a small smart DCS controller based on double CPUs. Electronic Technology 2002; 29: 37-39.
- **Yirong Yang** and Shanan Zhu. Distributed motor control experiment system based on RS—485 bus. Laboratory Research and Exploration 2002; 21:53-55.
- **Yirong Yang** and Helei Wu. Introduction to basic electrical devices. Rural Electrification 2002; 6:46.

Articles/Abstracts in Conference Proceedings

- **Y. Yang**, A. Drobyshesky, X. Ji, L. Yu, and S. Tan. High-throughput manganese enhanced magnetic resonance imaging in newborn rabbits for olfactory response to nitric oxide stimulus. Proc. of Joint Annual Meeting ISMRM-ESMRMB 2010, Stockholm, Sweden, E-Poster #: 4503.
- M. Pazin, J. Rudnicki, **Y. Yang**, M. Caplan, T. Jilling. Platelet Activating Factor (PAF) Receptor Activation Hinders Restitution of Intestinal Epithelium. Proceedings of 2009 Annual Meeting of Pediatric Academic Societies, Poster#: 4350.349
- M. Derrick, A. Drobyshesky, X. Ji, L. Chen, **Y. Yang**, S. Tan. Joint motion analysis during supported swimming detects differences in non-hypertonic hypoxia-ischemic rabbits and changes with a very selective nNOS inhibitor. Proceedings of 2009 Annual Meeting of Pediatric Academic Societies, Baltimore, U.S., Poster#: 3871.338
- **Y. Yang**, M. Shahidi. Hybrid deconvolution for improved retinal imaging resolution. 2006 Annual Meeting of the Biomedical Engineering Society, Chicago, U.S., Poster#: 230.
- M. Shahidi, **Y. Yang** etc. A method for measurements of higher order aberrations and light scatter in human eyes. 2005 ARVO Annual Meeting, Lauderdale, U.S., Poster#: B686.
- Helei Wu, Jing Ming, **Yirong Yang**, Shanan Zhu. Integrating embedded-web technology and real-time Ethernet for modern distributed control. The Fifth World Congress on Intelligent Control and Automation, Conference Proceedings, 2004, p 1323-1325.

- Helei Wu, **Yirong Yang**. Application of continuous hopfield network to solve the TSP, 8th International Conference on Control, Automation, Robotics and Vision (ICARCV), 2004, p 2258-2263.
- **Yirong Yang** and Shanan Zhu. Small smart distributed control system. Proceedings of the 4th World Congress on Intelligent Control and Automation, 2002, Vol. 3, pp1976-1979.
- **Yirong Yang** and Shanan Zhu. Web-based real-time control engineering laboratory. Proceedings of the 2002 International Conference on Control and Automation (IEEE Catalog Number: 02EX560C), pp.1044-1046.
- **Yirong Yang**, Shanan Zhu and Qipeng Hu. Integrating embedded system and Internet technologies for real-time tank control and imaging. Proceedings of 2002 JCAST (The International Conference between Zhejiang University and Shizuoka University), pp310-312.
- **Yirong Yang**, Wenwen Wang and Shanan Zhu. Digitized DC servo control system based on network. Proceedings of the 2001 JCAST (The International Conference between Zhejiang University and Shizuoka University), pp. 173-176.