

Curriculum Vitae

PERSONAL

Name: Lu, Zhong-Lin

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EDUCATION

Ph.D., Physics, 1992, New York University. Thesis title: Neuromagnetic Investigation of Sensory Evoked and Spontaneous Activity of Human Cerebral Cortex (Advisor: Samuel J. Williamson).

M.S., Physics, 1991, New York University.

B.S., Theoretical Physics, 1989, University of Science and Technology of China, thesis title: Berry Phase Factor --- multi-dimensional generalization, classic correspondence and applications in optics (Advisor: Yong-De Zhang).

PROFESSIONAL EXPERIENCE

College of Arts and Sciences Distinguished Professor of Psychology, Ohio State University (September 2017 -)

Distinguished Professor of Social and Behavioral Science and Professor of Psychology, Ohio State University (October 2011- August 2017).

Professor of Optometry, School of Optometry, Ohio State University (August 2013 -).

Member, Translational Data Analytics, Ohio State University (August 2015 -).

William M. Keck Chair in Cognitive Neuroscience, University of Southern California (August 2006 - 2011).

Professor of Psychology and Biomedical Engineering, University of Southern California (December 2004 -2011).

Overseas' Evaluation Expert. Chinese Academy of Science (2002 -).

Adjunct Professor of Life Sciences, University of Science and Technology of China, Hefei, Anhui, PR China (2000 -).

Adjunct Professor, Cognitive Neuroscience and Learning, Beijing Normal University (December 2004 -).

Adjunct Professor, Ophthalmology Center, Zhongshan University, Guangzhou, China (June 2016-).

Adjunct Professor, Wenzhou Medical University, Wenzhou, Zhejiang, China (October 2017 -).

Visiting Professor, Department of Rehabilitation, Polytechnic University of Hong Kong (2010).

Associate Professor, Departments of Psychology and Biomedical Engineering, University of Southern California. (May 2000 to December 2004).

Assistant Professor. Department of Psychology and Program in Neural, Informational and Behavioral Sciences, University of Southern California (September 1996 to April 2000).

Assistant Researcher (Supervisor: George Sperling). Human Information Processing Laboratory, Department of Cognitive Sciences and Institute for Mathematical Behavioral Sciences, University of California, Irvine (September 1992 to August 1996).

Postdoctoral Fellow (Supervisor: Samuel J. Williamson). Neuromagnetism Laboratory, Physics Department and Center for Neural Science, New York University (April 1992 to August 1992).

Graduate Research Assistant (Advisor: Samuel J. Williamson). Neuromagnetism Laboratory, Physics and Psychology Departments, and Center for Neural Science, New York University (September 1989 to March 1992).

Undergraduate Research Assistant (Advisor: Yong-De Zhang). Theoretical Group, Modern Physics Department, University of Science and Technology of China (September 1988 to June 1989).

ADMINISTRATIVE EXPERIENCE

Director, Center for Cognitive and Brain Sciences, The Ohio State University, 2012-

Director, Center for Cognitive and Behavioral Brain Imaging, The Ohio State University, 2011-

co-Director, Humanities and Cognitive Sciences Summer High School Institute, OSU, 2014 -
 Member, Committee on Intellectual Property, Patents and Copyrights, OSU, 2014 -2017
 Member, Neuroscience Major Program Oversight Committee, OSU, 2012 –
 co-PI, Concussion Neuroimaging Consortium, Big Ten, 2014 –
 OSU Contact, Big Ten/CIC-Ivy League Traumatic Brain Injury Research Collaboration, 2014 –
 Chair, Chronic Brain Injury Search Committee, Department of Psychology, 2015-2016.
 Member, Chronic Brain Injury Executive Committee, OSU, 2014 –
 Member, Outcomes/Metrics Sub-Council, One University Health and Wellness Council, OSU, 2013-
 Member, International Evaluation Panel, PKU Academic Committee, Center for Life Sciences, Beijing, China, 2012 –
 Founding member, Amblyopia Translational Research Alliance, Canada, 2013-
 Member, Faculty Search Committee, McGovern Institute for Brain Research, Beijing Normal University, 2014-
 Member, Data Analytics Collaborative Advisory Committee, 2014 – 2015.
 Chair, Cognitive Neuroscience Search Committee, Department of Psychology, 2014-2015.
 Member, Research, Innovation, and Commercialization Committee, College of Arts and Sciences, OSU, 2011-2012.
 Member, Review Board, AFOSR/AFRL Center of Excellence in Neuroergonomics, Technology, and Cognition
 (CENTEC) at George Mason University, 2010 – 2011.
 Member, McGuigan award committee, American Psychological Association, 2010, 2014.
 Member, Health and Well-Being Cluster, Discovery Themes on Data Analytics, OSU, 2013-2014.
 Member, Data Analytics Advisory Committee, OSU, 2014-2015.
 Chair, Cognitive Neuroscience Search Committee, Department of Psychology, 2013-2014.
 Member, Social Cognitive Neuroscience Search Committee, Department of Psychology, 2012-2013.
 Member, Oversight Committee of the Center for Cognitive Science, OSU, 2011 – 2012
 Member, Cognitive Science Committee, USC College of Letters, Arts and Sciences, 2009-2011.
 Evaluator, Changjiang Scholars Program, Minister of Education, China, 2009.
 Chair, Joint Search Committee on Decision-Making, USC College of Letters, Arts and Sciences, 2008-2009.
 Member, Deans and Provost Neuroscience Advisory Group, USC, 2008-2011.
 Chair, Dean's Neuroscience Advisory Committee, USC College of Letters, Arts and Sciences, 2008-2011.
 Chair, College Neuroscience Committee, USC College of Letters, Arts and Sciences, Spring, 2008-2011.
 Member, University Committee of Appointment, Promotion and Tenure, USC, 2006-2009.
 Co-Director, Dana and David Dornsife Cognitive Neuroscience Imaging Center, College of Letters, Arts, and Sciences,
 University of Southern California (September 2005 to December 2011).
 Scientific Director, Dana and David Dornsife Cognitive Neuroscience Imaging Center, College of Letters, Arts, and
 Sciences, University of Southern California (September 2004 to August 2005).
 Primary Technical Coordinator, Dana and David Dornsife Cognitive Neuroscience Imaging Center, University of
 Southern California. In charge of fMRI installation, calibration and staffing (May 2004 to August 2004).

TEACHING EXPERIENCE

Vision (Psychology 131A, Undergraduate Lecture Class, Winter, 1994. UCI. With Prof. George Sperling)
 Sensory and Perceptual Processes (Psychology 130, Undergraduate Lecture Class, UCI, Summer, 1995)
 Sensory and Perceptual Processes (Psychology 130A, Undergraduate Lecture Class, UCI, Summer, 1996)
 Statistics (Psychology 274, Undergraduate Lecture Class, USC, Fall, 1996)
 Sensation and Perception (Psychology 304, Undergraduate Lecture Class, USC, Spring, 1997)
 Modeling Human Information Processing (Psychology 599, Graduate Lecture Class, USC, Spring, 1997)
 Statistics (Psychology 274, Undergraduate Lecture Class, USC, Fall, 1997)
 Theories of Attention (Psychology 599, Graduate Lecture Class, USC, Spring, 1998)
 Brain Imaging for Psychology (Psychology 599, Graduate Lecture Class, USC, Fall, 1998)
 Sensation and Perception (Psychology 304, Undergraduate Lecture Class, USC, Spring, 1999)

Statistics (Psychology 274, Undergraduate Lecture Class, USC, Fall, 1999)

Auditory and Visual Perception (Psychology 599, Graduate Lecture Class, USC, Spring, 2000)

Statistics (Psychology 274, Undergraduate Lecture Class, USC, Fall, 2000)

Auditory and Visual Perception (Psychology 599, Graduate Lecture Class, USC, Spring, 2001, 6 students enrolled in the class).

Brain Imaging (Psychology 499, Undergraduate Lecture Class, USC, Spring, 2002)

Statistics (Psychology 274, Undergraduate Lecture Class, USC, Fall, 2003. 140 students enrolled in the class)

NeuroLunch (Neuro 524, Graduate Seminar, USC, Fall 2003. 30 students enrolled in the class)

Perceptual Learning (Psychology 599, Graduate Class, USC, Spring, 2004. 10 students enrolled in the class).

Introduction to Functional Magnetic Resonance Imaging (Psychology 599, Graduate Lecture/Lab Class, USC, Fall, 2004. Jointly with Bosco Tjan. 13 students enrolled in the class. Auditing: 4 professors and 3 graduate students.)

Introduction to Functional Magnetic Resonance Imaging (Psychology 599, Graduate Lecture/Lab Class, USC, Spring 2005. 13 students enrolled in the class. Auditing: 3 professors and 3 graduate students.)

Cognitive Neural Imaging (Psychology 599, Graduate Lecture/Lab Class, USC, Fall 2005. 15 students enrolled in the class. Auditing: 2 postdocs and 6 graduate students.)

Functional Imaging of the Human Brain (Psychology 499, Undergraduate Lecture/Lab Class, USC, Spring 2006, 22 students enrolled in the class. Auditing: 1 professor).

Introduction to Functional Magnetic Resonance Imaging (Psychology 555, Graduate Lecture/Lab Class, USC, Fall 2006. 12 students enrolled in the class. Auditing: 3 professors and 3 postdocs.)

Functional Imaging of the Human Brain (Psychology 499, Undergraduate Lecture/Lab Class, USC, Spring 2007, 9 students enrolled in the class. Auditing: 1 graduate student).

Introduction to Functional Magnetic Resonance Imaging (Psychology 555, Graduate Lecture/Lab Class, USC, Fall 2007. 15 students enrolled in the class. Auditing: 1 professor and 2 postdocs.)

Psychological Science I (Psychology 599, Graduate Proseminar, USC, Fall 2007. 22 first and second year graduate students enrolled in the class).

Psychological Science II (Psychology 599, Graduate Proseminar, USC, Spring 2008. 19 first and second year graduate students enrolled in the class).

Seminar in Quantitative Psychology (Psychology 621, Graduate Lecture/Lab Class, USC, Summer 2008. 11 students enrolled in the class. Auditing: 1 professor, 6 postdocs and 5 graduate students).

Introduction to Functional Magnetic Resonance Imaging (Psychology 555, Graduate Lecture/Lab Class, USC, Fall 2008. 15 students enrolled in the class. Auditing: 2 postdocs.)

Functional Imaging of the Human Brain (Psychology 425, Undergraduate Lecture/Lab Class, USC, Spring 2009, 22 students enrolled in the class.)

Introduction to Functional Magnetic Resonance Imaging (Psychology 555, Graduate Lecture/Lab Class, USC, Fall 2009. 13 students enrolled in the class. Auditing: 2 postdocs.)

Functional Imaging of the Human Brain (Psychology 425, Undergraduate Lecture/Lab Class, USC, Fall 2010, 15 students enrolled in the class.)

Visual Psychophysics (Psychology 599, Graduate Lecture/Lab Class, USC, Spring 2011, 8 students enrolled in the class.)

Introduction to Functional Magnetic Resonance Imaging (Psychology 800, Graduate Lecture/Lab Class, OSU, Fall 2011. 9 students enrolled in the class. Auditing: 4 graduate students and two professors.)

Introduction to Functional Magnetic Resonance Imaging (Psych 7695.04, Seminar in cognitive psychology. Graduate Lecture/Lab Class, OSU, Spring 2013. 15 students enrolled in the class. Auditing: 6 postdocs/lab staff).

Introduction to Functional Magnetic Resonance Imaging (Psych 7695.04, Seminar in cognitive psychology. Graduate Lecture/Lab Class, OSU, Spring 2014. 7 students enrolled in the class. Auditing: 6 postdocs/visiting scholars/faculty).

Introduction to Functional Magnetic Resonance Imaging (Psych 5425, Graduate and Undergraduate Lecture/Lab Class, OSU, Spring 2015. 17 students enrolled in the class. Auditing: 2 postdocs).

Introduction to Functional Magnetic Resonance Imaging (Psych 5425, Graduate and Undergraduate Lecture/Lab Class, OSU, Spring 2016. 17 students enrolled in the class. Auditing: 1 visiting scholar).

Introduction to Functional Magnetic Resonance Imaging (Psych 5425, Graduate and Undergraduate Lecture/Lab Class, OSU, Fall 2016. 18 students enrolled in the class).

Introduction to Functional Magnetic Resonance Imaging (Psych 5425, Graduate and Undergraduate Lecture/Lab Class, OSU, Fall 2017. 20 students enrolled in the class).

RESEARCH INTERESTS

Computational & psychophysical study of visual and auditory perception, attention, and perceptual learning. Functional brain imaging study of sensory and attentional processes, learning and memory, reading, and human decision-making. Visual deficits in dyslexia, amblyopia, and Alzheimer's disease.

TEACHING INTERESTS

Vision and visual perception; attention; human information processing; image processing; mathematics (algebra, statistics, linear system analysis, modeling); computer programming; psychophysics; functional brain imaging.

COMPUTER EXPERIENCE

System administrator for network containing Sun, NeXT, PC (DOS and LINUX) and Macintosh computers. Programming languages, applications: C and C++ (real-time systems programming), Fortran, Pascal, Splus, Matlab, Mathematica, Unix shell; numerous text and graphic processing systems. Highly experienced with multi-media real-time information presentation (visual, auditory, neuromagnetic) and real-time control of data acquisition and analysis using DOS and Unix systems. Monitor Evaluation.

FUNDING

- 1997 Air Force Office of Scientific Research Grant F49620-98-1-0020 (Visual Information Processing Program): "Mechanism of Perceptual Attention." P.I., Z.-L. Lu; starting date, 10/1/97; duration, 36 months; total funding \$191,775.
- 1998 National Institute of Mental Health, "Training in Cognitive and Computational Neuroscience", co-P.I.'s, M. Seidenberg, M. Arbib, I. Biederman, and Z.-L. Lu, 07/01/98 – 6/30/03; 60 months; total funding \$139,559 [4 pre- and 1 post-doctoral fellowships].
- 2000 Provost Undergraduate Research Awards. "Mechanisms of multi-modal Attention", Faculty P.I., Z.-L., Lu, 1/1/2000-6//30/2000, 6 months, total funding \$6430.
- Alzheimer Disease Research Center (USC) Pilot Study Award (via National Institute of Aging grant # 5P50AG005142-17), "Sensory memory and its attentional gating to short-term memory in normal and Alzheimer's patients", P.I., Z.-L. Lu & S. Madigan, 4/1/2000-3/31/2001, 12 months, total direct cost \$30,000.
- National Science Foundation Grant BCS-9911801, "Collaborative Research: Mechanisms of Perceptual Learning", P.I., Z.-L. Lu, 9/1/2000-8/31/2004, 48 months, total funding \$152,397.
- National Institute of Mental Health Grant 1 R01 MH61834-01, USC subcontractor, "Functions and Mechanism of Perceptual Learning", P. I., Z.-L. Lu, 7/15/2000-9/30/2005, 63 months, total funding \$388,756.
- Air Force Office of Scientific Research Grant F49620-01-1-0109, "Functions and Mechanisms of Perceptual Attention", P.I., Z.-L. Lu, 1/1/2001-3/31/2005, 51 months, \$314,921.
- 2002 National Natural Science Foundation of China, "Physiological basis of perceptual learning", P. I., Z.-L. Lu, 3/1/2002-3/31/2005, 36 months, ¥400,000.
- National Institutes of Child Health and Human Development Grant: NICHD 2 R01 HD29891-05, "Bases of Normal and Disordered Reading", co-PIs: Franklin R. Manis, Mark S. Seidenberg, Zhong-Lin Lu, Susan Bookheimer, Patricia Keating, 04/01/2002 - 3/31/2007, 60 months, \$2,281,129.
- Wang Kwang-Chen Research Award, Hong Kong WKC Foundation of Education, 3/7/2002, \$2,000.00.
- 2004 National Science Foundation, Major Research Instrumentation Grant (BCS-0420794): Acquisition of an fMRI Basic Research Imaging System at the University of Southern California. PI: Irving Biederman. Co-Pis: Michael Arbib, Laurent Itti, Zhong-Lin Lu and Adrian Raine. 8/1/04-7/31/06, 24 months, \$1,772,149.

- Chinese Academy of Sciences, Team Grant, “Investigating the feature-binding problem”, PIs: Sheng He, Zhong-Lin Lu, Li Zhaoping, Jun Zhang, Jia Hong Gao, and Xiaohong Zhou, 12/1/04-11/30/07, ¥6,000,000.
- 2005 Provost Undergraduate Research Awards. “Mechanisms of Visual Deficits of Amblyopic Patients”, Faculty P.I., Z.-L., Lu, 1/1/2005-6/30/2005, 6 months, total direct cost \$9,500.
- Center for Biodemography and Population Health Pilot 2006, “Evaluating Fast Decay of Iconic Memory as an Early Sign for Alzheimer Disease”, P. I., Z.-L. Lu & Linda Clark, 10/1/2005-6/30/2006, 8 months, total direct cost \$20,000.
- 2006 National Eye Institute Grant 9 R01 EY017491-05, USC subcontract, “Functions and Mechanisms of Perceptual Learning”, P. I., Z.-L. Lu, 5/1/2006-4/30/2011, 60 months, total funding \$719,905.
- Pfizer, “Rapid iconic memory decay as a marker predicting Mild Cognitive Impairment and Alzheimer’s Disease”, PIs: Carbary, Cornett, Knox, Lu, Mullineaux, Pavez & Schmitt, 4/1/2006-3/31/2007, total funding: \$71,878.
- 2007 Department of Education and the Bureau of Foreign Experts, China, “Mechanisms of Object Recognition: Evolution, Genetics and Cognitive Development”, PIs: George Sperling, Elizabeth Loftus, Nancy Kanwisher, Zhong-Lin Lu, Chuansheng Cheng, Xiaoping Hu, Ping Li, Zhaoping Li, Doris Tsao, Winrich Freiwald, 1/1/2006-12/31/2011, 48 months, ¥8,000,000.
- National Natural Science Foundation of China, “Mechanisms of Visual Deficits in Amblyopia”, co-PIs, Y. Zhou and Z.-L. Lu, 1/1/2007-12/31/2010, 36 months, ¥1,400,000.
- House Ear Institute, “Multisensory processing: plasticity and accommodation to a sensory prosthesis”, 2/1/2007-6/30/2009, \$17,500
- House Ear Institute, “Audiovisual Speech Processing”, 3/1/2007 – 6/30/2009, \$11,736.
- National Eye Institute, 1R01 EY016093-01A1, Bioengineering Research Partnerships: Mid-level vision systems for low vision, PI: N. M. Grzywacz, co-PIs: I. Biederman, Z.-L. Lu, G. Medioni, B. Mel, & B. Tjan, 12/1/2007-11/30/2012, 60 month, total funding \$5,816,039.
- Alzheimer’s Disease Research Center, Prefrontal cortex decline and decision-making in older adults, PI: A. Bechara, co-PI: C. Vidal, Investigators: Z.-L. Lu, X. Li & H. Damasio, 9/1/2007-8/31/2008, direct cost \$30,000.
- 2008 National Institute of Mental Health, 1 R01 MH081018-01A1, USC subcontract, “Mechanisms and Taxonomy of Visual Attention”, PI: Z.-L. Lu, 5/19/2008-5/18/2013, 60 months, total funding \$823,410.
- National Science Foundation, BCS 0823495, “Collaborative Research: Learning to Read a Second Language: Neural Basis and Individual Variation”, PI: Z.-L. Lu, 9/1/2008-8/31/2011, 36 months, total funding \$259,772.
- National Science Foundation, BCS 0817729, “Workshop on Cognitive Science: From Cellular Circuitry to Computational Cognition”, PI: Z.-L. Lu, Co-PIs: Xiaoping Hu, Guoqiang Bi, and Richard Shiffrin, 7/1/2008-6/30/2009, 12 months, total direct costs \$29,900.
- 2009 Department of the Air Force, Asian office of aerospace research and development, FA2386-09-1-4009, AOARD-09-4006, “State of Art Review--Cognitive Science: from cellular mechanisms to computational theories.”, PI: Z.-L. Lu, 3/1/2009-8/31/2009, 6 months, total direct costs \$28,800.
- National Institutes of Child Health and Human Development, 1 R01 HD057884-01A2, USC subcontract, “Learning to read and comprehend a second language”, PI: Z.-L. Lu, co-PI: G. Xue, 04/01/2009 – 3/31/2014, 60 months, total funding \$593,673.
- 2010 Air Force Office of Scientific Research Grant F49620-10-1-0109, “Collaborative Research: Developing, Testing and Validating Brain Alignment Algorithm Using Geometric Analysis”, co-P.I./Consultant, Z.-L. Lu (PI: Hanna Damasio), 7/1/2010-6/30/2013, 36 months, \$450,000.
- 2011 National Cancer Institute, 1 R01 CA152062-01, "Neurocognitive Mechanisms of Decisions and Impulse Control in Nutrition Behavior", co-I, Z.-L. Lu (PI: Antoine Bechara), 4/1/2011-3/31/2016, 60 months, \$2,402,039.

- National Eye Institute, 2 R01 EY017491-10, OSU subcontract, "The Functions and Mechanisms of Perceptual Learning", PI: Z.-L., Lu, 5/1/2011-4/30/2015, 48 months, \$810,000.
- National Institute of Health, 1 R01 DA031626-01, "Neural Mechanisms of Risky Sexual Decision-Making in METH and non-METH Using MSM", co-PI/Consultant, Z.-L. Lu (PI: Stephen Read), 7/1/2011 - 6/30/2016, 60 months, \$2,844,615.
- 2012 National Natural Science Foundation of China, "A study on the brain mechanisms underlying perceptual learning of orientation discrimination", co-PI, Z.-L., Lu (PI: Tianmiao Hua), 1/1/2012 - 12/31/2015, 48 months, ¥640,000.
- National Natural Science Foundation of China, " Practice makes perfect: The neural mechanisms of the practice effect and its application ", co-PI, Z.-L., Lu (PI: Gui Xue), 1/1/2012 - 12/31/2015, 48 months, ¥2,000,000.
- National Eye Institute, 1 R01 EY021553-01, "Efficient Assessment of Visual Deficits and Rehabilitation Methods in Amblyopia", PI, Z.-L. Lu, 4/1/2012 – 3/31/2017, 60 months, \$ 2,143,038.
- National Institute of Child Development and Health, 1 R24 HD075460-01, "Neurobiological Underpinnings of Math and Reading Comorbidity: A Twin Study", co-I (PI: Stephen Petrill), 10/1/2012 - 9/30/2016, \$2,444,000.
- 2013 Department of Human Sciences, College of Education and Human Ecology, OSU, "A Feasibility Study of Time Commitment: Benefit of Physical Activity and Cognition", Li, W. & Lu, Z.-L., 12/1/2013-4/30/2014, \$25,000.
- 2014 National Science Foundation, DMS 1412722, Collaborative Research: Quantifying Human Retinotopic Mapping by Conformal Geometry, PI: Zhong-Lin Lu, 7/1/2014-6/30/2017, 36 months, total funding \$60,000.
- National Eye Institute, SBIR grant R43 EY023902, "A rapid, portable test to monitor gradual vision loss in dry age-related macular degeneration", consultant Z.-L. Lu (PI: Luis A. Lesmes, Adaptive Sensory Technology, LLC), 9/12/2014-3/11/2015, 6 months, total funding \$99,982.
- 2015 National Science Foundation, SMA 1533500, "NCS-FO: Collaborative Research: Understanding Individual Differences in Cognitive Performance: Joint Hierarchical Bayesian Modeling of Behavioral and Neuroimaging Data", PI: Zhong-Lin Lu, 8/1/2015-7/31/2018, 36 months, total funding \$472,165.
- National Eye Institute, 2 R01 EY017491-14, OSU subcontract, "The Functions and Mechanisms of Perceptual Learning", PI: Z.-L., Lu, 9/1/2015-8/31/2018, 36 months, \$577,500.
- National Eye Institute, 1 R01 REY025658A, "Efficient assessment of visual deficits in low vision", co-I: Z.-L. Lu (PI: Deyue Yu), 12/1/2015-11/30/2020, 60 months, total funding \$2,493,876.
- 2016 National Center for Simulation in Rehabilitation Research (NCSRR), R21 HD086451, "Optimal Physical and Cognitive Rest after Sports-Related Concussions among Youth", consultant: Z.-L. Lu (PI: Ginger Yang), 9/1/2016-8/31-2018, 24 months, total funding: 423,770.
- 2017 National Institute of Drug Abuse, 1R01DA042080, "The effects of exposure to violence on risk for substance abuse: neural mechanisms and community level moderators", co-I: Z.-L. Lu (PI: Baldwin Way), 4/1/2017 – 3/31/2022, 60 months, total funding \$3,837,362.

INVENTIONS/PATENTS

- 2011 Lu, Z.-L. & Lesmes, L. A., United States Patent 7,938,538, "Efficient Bayesian measurement and classification of contrast sensitivity functions", **granted** on May 10, 2011.
- Li, G., Chuan, H. F., Lu, Z.-L., Li, X., Huang, C.-B., Gao, J.-H. & Chow Y.-M., United States Patent 8,002,409, "Vision treatment procedures and devices", **granted** on August 23, 2011.
- 2012 Bavelier, D., Levi, D., Lu, Z.-L. & Pascual-Leone, A., United States Patent Application 13/200,080, "Method and system for treating amblyopia", filed on September 16, 2012.

- 2013 Wang, J. & Lu, Z.-L., United States Patent US2013/0251227A1, “Methods and apparatus for accurate characterization of signal coil receiver sensitivity in magnetic resonance imaging (MRI)”, filed on Feb 27, 2013. US patent No 9,146,293 B2, **granted** on September 29, 2015.
Bex, P., Dorr, M., Lesmes, L.A., Lu, Z.-L., PCT/US2013/040434, "Rapid Measurement of Visual Sensitivity", filed on May 8, 2013, **granted** in the US on July 11, 2017.
Wang, J. & Lu, Z.-L., United States Patent, US patent Application No. 2014/023388, “Methods And Devices For Optimization Of Magnetic Resonance Imaging Protocols”, filed on September 10, 2013, **granted** on May 17, 2016.
Kim, W., Pitt, M. A., Lu, Z.-L., Steyvers, M. & Myung, J., United States Provisional Patent, “Rapid Individualized Assessment: A Method for Optimizing the Measurement of Sensory and Neuropsychological Abilities”, filed on October 4, 2013.
- 2014 Wang, J., Lu, Z.-L., Constable, T., International application No. PCT/US2014/027850, “Methods and apparatus for signal inhomogeneity correction and performance evaluation”, filed on March 15, 2014.
- 2015 Wang, J., Parikh, N., Lu, Z.-L., He, L., Provisional Patent Application, “Methods and devices for optimizing magnetic resonance imaging protocols”, filed on March 11, 2015.
Lu, Z.-L., Lesmes, L. A. & Baek, J., International application No. PCT/US15/25640, “Method of generating an adaptive partial report and apparatus for implementing the same”, filed on April 14, 2015.
Lu, Z.-L., Huang, C.-B., Jia, W., Lesmes, L. A. & Zhou, J., International Patent Application No. PCT/US2015/028657, “Method of identifying an eye disorder of an observer and Apparatus for implementing the same”, filed on May 1, 2015.
Wang, J. & Lu, Z.-L., United States Utility Patent, Application No. 2015/14863770, “Methods and apparatus for accurate characterization of signal coil receiver sensitivity in magnetic resonance imaging (MRI)”, filed on September 24, 2015.
- 2016 Wang, J., Parikh, N., Lu, Z.-L., He, L., PCT/US2016/022086, “Methods and devices for optimizing magnetic resonance imaging protocols”, filed on March 11, 2016.
Bex, P., Hou, F., Lesmes, L. A., Lu, Z.-L., Yu, D., US Provisional Patent 62/378,334, “Efficient measurement of reading performance”, filed on August 23, 2016.
Lu, Z.-L., Huang, C.-B., Diao, Q., Methods and devices for individualized adaptive vision treatment (iAVT) for amblyopia, myopia, and presbyopia. Disclosed on July 21, 2016.
- 2017 Lu, Z.-L., Zhao, Y., Lesmes, L. A., U.S. Provisional Patent Application 62/470,542, “Systems and methods for measuring behavior changes of processes”, filed on March 13, 2017.
Cranmer, S., Bhamidi, S., Desmarais, B., Denny, M., Lu, Z.-L., Stillman, P., Wilson, J., US Provisional Patent 62/393,949, “Systems and methods for modeling neural architecture”, filed on September 13, 2016. Converted to PCT/US17/51343 on September 13, 2017.
Lu, Z.-L., Bex, P., Hou, F., Lesmes, L. A., Yu, D., US Provisional Patent 62/562810, “Systems and methods for measuring reading performance”, filed on September 25, 2017.
Wang, Y, Ta, D., Lu, Z.-L., US Provision Patent 62/609,704, “Apparatus and method for quantification of the mapping of the sensory areas of the brain”, filed on December 22, 2017.

ACADEMIC AWARDS

- 2009 Distinguished Visitor, The University of Hong Kong.
- 2009 First Prize, 5th Annual Best Visual Illusion Contest, The Neural Correlate Society. “The Break of the Curveball” by Shapiro, Lu, Knight & Ennis.
- 2008 Finalist, 4th Annual Best Visual Illusion Contest, The Neural Correlate Society. “Dramatically different percepts between foveal and peripheral vision” by Knight, Shapiro & Lu.
- 2007 Fellow, Association for Psychological Science.
- 2004 Outstanding Scientist, Chinese Academy of Science.

- 2003 Early Investigator Award & Fellow elected, Society of Experimental Psychologists.
- 2003 Outstanding Scientist, National Natural Science Foundation of China.
- 2002 Wang Kwang-Chen Research Award, Hong Kong WKC Foundation of Education (\$2,000.00).
- 1991 Dean's Dissertation fellowship, New York University (full graduate tuition+ stipend).
University fellowship, New York University (full tuition).
- 1989 Meyer fellowship, New York University (full graduate tuition plus stipend).
University of Science and Technology of China. Special dispensation to finish five year program in four years.
- 1988 National Competition: China-U.S. Physics Examination Application (CUSPEA). Awarded travel and living stipend for study in a graduate school of choice in the USA.
- 1986 University fellowship, University of Science and Technology of China.
- 1985 Winner, Mathematics, Physics, English competition, University of Science and Technology of China. Awarded entrance to the special interdisciplinary program which takes only the 30 best students in the university.
Combined award based on competitions below: Free admission to university of choice in China, waiver of entrance examination.
Combined award based on competitions below: Best student in Shashi City, waiver of all previous educational fees.
- 1984 Winner of the second place in the National High School Students' Mathematics Contest in Hubei Province, China.
Winner of the third place in the National High School Students' Physics Contest in Hubei Province, China.

PROFESSIONAL MEMBERSHIPS

- 1990 Member of the American Physics Society
- 1992 Member of the Association for Research in Vision and Ophthalmology (ARVO)
- 1995 Member of the Society for Mathematical Psychology
- 1996 Member of the Psychonomics Society
- 2003 Fellow, Society for Experimental Psychologists
- 2007 Fellow, Association for Psychological Science

EDITORIAL & GRANT REVIEW BOARD

- Consulting Editor, Psychological Review (2015-)
- Associate Editor, PsyCh Journal (2011-)
- Editorial Board Member, PLoS ONE (2013-)
- Editorial Board Member, MDPI Brain Sciences (2012-)
- Associate Editor, Psychological Review (2010-2015)
- Associate Editor, Spatial Vision (2004-2009)
- Associate Editor, Seeing and Perceiving (2009-2012)
- NIH Study Section "Central Visual Processing", Ad hoc Member, Feb, Jun & Oct, 2004; Feb, 2005
- Chinese Natural Science Foundation Study Section "National Key Projects in Life Sciences", Jul, 2005
- National Science Foundation, Perception, Action and Cognition Panel, November, 2007; May, 2008
- National Science Foundation, Cognitive Neuroscience Panel, November, 2008
- National Science Foundation, Major Research Instrumentation Panel, October, 2009.
- National Science Foundation, Cognitive Neuroscience Panel, May, 2010.
- National Science Foundation, Cognitive Neuroscience Panel, December, 2011.
- National Science Foundation, Science of Learning/TDLC Site Visit Panel, June, 2012.
- NIH Study Section "Sensory, Perception, and Cognition", Ad hoc Member, Oct, 2012.

JOURNALS AND PROPOSALS REVIEWED

Brain Research, Attention, Perception & Psychophysics, Current Biology, eLife, Experimental Brain Research, Journal of Vision, Journal of the Optical Society of American, Journal of Cognitive Neuroscience, Journal of Computational Neuroscience, Journal of Experimental Psychology: Human Perception and Performance, Journal of Neuroscience, NeuroImaging, Nature Neuroscience, Neural Networks, NeuroReport, Psychonomic Bulletin & Review, Proceedings of National Academy of Science, USA, Psychological Review, Scientific Reports, Vision Research.

SYNERGISTIC ACTIVITIES

- 2007 Organizer, Symposium on Functional Brain Imaging, Society for Mathematical Psychology, Costa Mesa, California.
- 2007 Co-Organizer, Frontiers in Human Information Processing, Festschrift Conference in Honor of George Sperling, University of California, Irvine, California
- 2008 Member, APS delegation to China.
- 2008 Organizer, The First International Workshop on Perceptual Learning, Beijing, China.
- 2009 Organizer, NSF/AFOSR Workshop on Cognitive Science: From Cellular Circuitry to Computational Modeling, Beijing, China.
- 2010 Co-Organizer, The Richard F. Thompson Symposium: The Bridge Between the 20th and 21st Century, University of Southern California, Los Angeles, California.

PUBLICATIONSA. Dissertation

- 1992 Lu, Z.-L., Neuromagnetic investigation of evoked and spontaneous activity of human cerebral cortex. Ph.D Thesis, Physics Department, New York University.

B. Books and Edited Volumes

- 2003 Lu, Z.-L. & Kaufman, L. (Eds.), Magnetic Source Imaging of the Human Brain. Lawrence Erlbaum Associates, Inc., Mahwah, New Jersey.
- 2007 Lu, Z.-L. & Eskew, R. (Eds.), Special Issue on Signal Detection Theory, *Spatial Vision* 20 (1), 1-175.
- 2009 Lu, Z.-L., Zhou, Y., He, S. & He, Z. (Eds.), *Vision Science*. University of Science and Technology of China Press, Hefei, Anhui, China, 1-530.
- Lu, Z.-L., Yu, C., Watanabe, T., Sagi, D., & Levi, D. (Eds.), Special Issue on Perceptual Learning (I), *Vision Research*, 49 (21), 2531-2634.
- 2010 Lu, Z.-L., Yu, C., Watanabe, T., Sagi, D., & Levi, D. (Eds.), Special Issue on Perceptual Learning (II), *Vision Research*, 50 (4), 365-485.
- 2012 Chung, S. & Lu, Z.-L. (Eds.), Special Issue on Clinical Vision, *Seeing and Perceiving*, 25 (5), 397-520.
- 2013 Chubb, C. F., Doshier, B., Lu, Z.-L. & Shiffrin, R. (Eds.), *Human Information Processing: Vision, Memory, Attention*, American Psychological Association: Washington, DC. (264 pages).
- Lu, Z.-L. & Luo, Y. (Eds.) *Progress in Cognitive Science: From Cellular Mechanisms to Computational Theories*, Peking University Press, Beijing, China (480 pages).
- Lu, Z.-L. & Doshier, B., *Visual Psychophysics: From Laboratory to Theory*, The MIT Press. (464 pages)
- 2014 Kawato, M., Lu, Z.-L., Sagi, D., Sasaki, Y., Yu, C. & Watanabe, T. (Eds.), Special Issue on Perceptual Learning, *Vision Research*, 99 (1), 1-186.
- 2017 Eckstein, M., Lu, Z.-L., Yu, C., Sagi, D. (Eds.), Special Issue on Perceptual Learning, *Vision Research*, 102, in press.

C. Published Articles

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- Williamson, S. J., Lu, Z.-L., Karron, D. & Kaufman, L., Advantages and limitations of magnetic source imaging. Special Issue: Functional localization with EEG and MEG: Comparative aspects. *Brain Topography*, 4: 169-180.

- 1992 Lu, Z.-L., Williamson, S. J. & Kaufman, L., Human auditory primary and association cortex have differing lifetimes for activation traces. *Brain Research*, 572: 236-241.
- Lu, Z.-L., Wang, J.-Z. & Williamson, S. J., Neuronal sources of parieto-occipital alpha rhythm. In *Biomagnetism: Clinical Aspects*. Edited by Hoke, M., Erne, S. N., Okada, Y. C. & Romani, G. L.
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- Lu, Z.-L., Williamson, S. J. & Kaufman, L., Magnetic source image of the human brain. In: *Proceedings of the 26th Mexican Winter Conference on Condensed Matter: Modern Topics on Condensed Matter*, Mexico city, Mexico.
- 1993 Sperling, G., Wurst, S. A. & Lu, Z.-L., Using repetition detection to define and localize the processes of selective attention. In *Attention and Performance XIV: Synergies in Experimental Psychology, Artificial Intelligence, and Cognitive Neuroscience*, edited by Meyer, D. E. & Kornblum, S., Cambridge, Massachusetts: The MIT Press, page 265-298.
- Lu, Z.-L., Magnetic source imaging of the human brain. In *Proceedings of physiological imaging, spectroscopy, and early-detection diagnostic methods*, edited by Barbour, R. L., Carvlin, M. J. & Katzir, A., Bellingham, Washington: SPIE proceeding series, vol 1887, page 2-15.
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- Jia, W., Lan, F., Lu, Z.-L., Huang, C.-B., Zhao, W. & Li, M., The effects of Monocular Training on Binocular Functions in Amblyopia, *Vision Research, Special Issue on Perceptual Learning*, in press.
- Barkley-Levenson, E. E., Xue, F., Droutman, V., Miller, L. C., Smith, B. J., Jeong, D., Lu, Z.-L., Bechara, A., & Read, S. J., Prefrontal cortical activity during the Stroop task: New Insights into the Why and the Who of Real-World Risky Sexual Behavior, *Annals of Behavioral Medicine*, in press.
- He, L., Wang, J., Lu, Z.-L. & Parikh, N. A., Optimization of Neonatal Magnetization-Prepared Rapid Gradient Echo (MP-RAGE) Sequence with Shorter Acquisition Train Length, *Pediatric Radiology*, in press.
- Palestro, J. J., Bahg, G., Sederberg, P. B., Lu, Z.-L., Steyvers, M., Turner, B. M., A Tutorial on Joint Models of Neural and Behavioral Measures of Cognition, *Journal of Mathematical Psychology*, in press.
- Kwon, M., Lu, Z.-L. & Bex, P. J., A dichoptic test to assess visual-field dependent suppression in amblyopia, *Scientific Reports*, in revision.
- Ma, M., Su, Z., Zeng, W., Wang, Y., Lu, Z.-L. & Gu, X., Riemannian Optimal Mass Transport Map and Its Application to Brain Image Analysis, *IEEE Transactions on Medical Imaging*, in revision.
- Zhao, Y., Lesmes, L. A. & Lu, Z.-L., Efficient Measurement of the Time Course of Perceptual Sensitivity Change, *Journal of Vision*, in revision.
- Hou, F., Zhao, Y., Lesmes, L. A., Bex, P., Yu, D. & Lu, Z.-L., Bayesian estimation of reading performance: the quick Reading method, *Journal of Vision*, in revision.
- Zhang, P., Hou, F., Xi, J., Zhang, M.-Y., He, Q., Barbara A. Doshier, Lu, Z.-L. & Huang, C.-B., High Reward Enhances Perceptual Learning and Transfer, *Journal of Vision*, in revision.
- Banich, M. T., Wang, K., Reinberg, A., Willcutt, E., Cutting, L., Thompson, L., Tufo, S. D., Opfer, J., Lu, Z.-L. & Petrill, S. A., The neural substrates of reading and substantially overlap in regions that support executive function. *Psychological Science*, in revision.
- Droutman, V., Xue, F., Barkley-Levenson, E. E., Smith, B. J., Xue, G., Lu, Z.-L., Bechara, A., Miller, L. C. & Read, S. J., Neural and behavioral deficits leading to increased risk in methamphetamine users, *Human Brain Mapping*, in revision.

INVITED TALKS AND COLLOQUIA

- 1992 Lu, Z.-L., Williamson, S. J. & Kaufman, L., Magnetic source image of the human brain. Invited talk given by Lu in Modern Topics on Condensed Matter, Mexico city, Mexico.

- Lu, Z.-L., Williamson, S. J. & Kaufman, L., Dynamic processes in the human brain: lifetimes of sensory memory and the time required to scan memory. Invited talk given by Williamson in MEG Workshop, Centre de Formation, Permanente du CNRS, Gif sur Yvette, France.
- 1993 Lu, Z.-L., Magnetic source imaging of the human brain. Invited talk given by Lu in SPIE Conference: Physiological imaging, spectroscopy, and early-detection diagnostic methods, Los Angeles, California.
- 1994 Sperling, G., Chubb, C., Solomon, J. & Lu, Z.-L., Fullwave and halfwave processes in 2nd-order motion and texture. Invited talk given by Sperling at Ciba Foundation Symposium 184: Higher-order processing in the visual system.
Sperling, G. & Lu, Z.-L., Visual perception. Invited talk given by Lu at the 1994 IEEE World Congress on Computational Intelligence, Orlando, Florida.
- 1995 Lu, Z.-L., The functional architecture of human visual motion. Colloquium given by Lu at the Institute for Mathematical Behavioral Sciences, University of California, Irvine.
Sperling, G. & Lu, Z.-L., Deriving the tripartite functional architecture of visual motion perception. Invited talk given by Sperling at the 26th European Mathematical Psychology Group (EMPG) Meetings, Universitat Regensburg, Germany.
- 1996 Lu, Z.-L., The functional architecture of human visual motion. Colloquium given by Lu in Center for Adaptive Systems and Department of Cognitive and Neural Systems, Boston University, Boston.
Lu, Z.-L., The functional architecture of human visual motion. Invited lecture given by Lu in Visual Sciences Laboratory, Department of Psychology, Harvard University, Boston.
Lu, Z.-L., The functional architecture of human visual motion. Colloquium given by Lu in Department of Psychology, University of Southern California, Los Angeles.
Lu, Z.-L., The functional architecture of human visual motion. Colloquium given by Lu in Department of Brain and Cognitive Sciences, Massachusetts Institute of Technology, Boston.
Lu, Z.-L., The functional architecture of human visual motion. Invited talk given by Lu at NEC Research Institute, New Jersey.
Sperling, G. & Lu, Z.-L. New theories of motion perception. Invited talk given by Sperling at the Symposium on "Attention and Perception", XXVI International Congress of Psychology, Montreal, Quebec, Canada.
Lu, Z.-L., Three systems for human visual motion perception. Colloquium given by Lu in Department of Biomedical Engineering, University of Southern California, Los Angeles.
- 1997 Suppes, P., Lu, Z.-L. & Han, B., Brain-wave recognition of words. Talk given by Suppes at the Neuroimaging Symposium, National Academy of Science, Irvine, CA.
Lu, Z.-L., Motion and Attention. Colloquium by Lu at Salk Institute for Biological Studies, San Diego, CA.
Lu, Z.-L., Motion and Attention. Colloquium by Lu in the Department of Psychology, University of California, Santa Barbara.
- 1998 Lu, Z.-L., Time courses of two forms of auditory sensory memory as measured by MEG and psychophysics, Vision Lunch by Lu in the Department of Cognitive Sciences, University of California, Irvine.
Lu, Z.-L., Brain-wave recognition of words. Invited talk at the Sloan Center, California Institute of Technology, Pasadena, CA.
- 1999 Sperling, G. & Lu, Z.-L., Attention and Motion. Talk given by Sperling & Lu in the Helmholtz Society.
Doshier, B. A. & Lu, Z.-L., Mechanisms of perceptual attention,. Invited talk given by Doshier at the 3rd Annual Vision Research Conference: Preattentive and Attentive Mechanisms in Vision, Fort Lauderdale, Florida.
- 2000 Lu, Z.-L., Mechanisms of perceptual attention, invited talk given by Lu in the Department of Psychology, Chinese University of Hong Kong, Hong Kong.

- Lu, Z.-L., Sensory memory, invited talk given by Lu in the Department of Psychology, Chinese University of Hong Kong, Hong Kong.
- Lu, Z.-L., Retuning of perception by attention, invited talk given by Lu in the AFOSR Attention Forum, Dayton, Ohio.
- Sperling, G. & Lu, Z.-L., The current status of the three-systems theory of visual motion perception, Optical Society Annual Meeting, Rhode Island.
- Lu, Z.-L., Constructing computational brain models: An interdisciplinary approach. Beijing Research Laboratory of Cognitive Science, Chinese Academy of Science, Beijing, China.
- Lu, Z.-L., Attention and its mechanisms. School of Life Sciences, University of Science and Technology of China, Hefei, Anhui, China.
- Lu, Z.-L., How to conduct multidisciplinary research. Student Association, University of Science and Technology of China, Hefei, Anhui, China.
- Lu, Z.-L., Motion perception and computational models. School of Information and Computer Science, University of Science and Technology of China, Hefei, China.
- Lu, Z.-L., Mechanisms of perceptual attention. Institute of Psychology, Chinese Academy of Science, Beijing, China.
- Lu, Z.-L., The functional architecture of human visual motion perception. Beijing Research Laboratory of Cognitive Science, Beijing, China.
- 2001 Lu, Z.-L., Physiological basis of perception learning, Natural Science Foundation of China, Beijing.
- 2002 Lu, Z.-L., Mechanisms of perceptual learning. Graduate Seminar, Department of Psychology, University of California, Los Angeles.
- Lu, Z.-L., Mechanisms of perceptual learning. Center for Brain and Cognitive Science, Beijing University, Beijing, China.
- Lu, Z.-L., Perceptual learning: Physiological investigations. Laboratory of Biophysiology, Department of Psychology and Information Science, Beijing University, Beijing, China.
- Lu, Z.-L., Mechanisms of perceptual learning. School of Life Sciences, University of Science and Technology of China, Hefei, Anhui, China.
- Lu, Z.-L., External noise methods, observer models, and mechanisms of attention/perceptual learning. School of Optometry, University of California, Berkeley.
- Lu, Z.-L. Brain mechanisms of attention. International Conference on Cognitive Neuroscience, Tsingtao, Shangdong, China.
- Lu, Z.-L., Lesmes, L. A. & Sperling, G., Equiluminance, sensitive calibration, three-systems theory, and equiluminous chromatic motion perception, invited talk given by Lu at the 25th European Conference on Visual Perception (ECVP), Glasgow, Scotland.
- Lu, Z.-L., Brain mechanisms of attention. Gatsby Computational Neuroscience Center, University of College London, London, England.
- Lu, Z.-L., Habituation and Sensory Memory, Department of Psychology and the MIND Institute, University of New Mexico, Albuquerque, New Mexico.
- Lu, Z.-L., Lesmes, L. A. & Sperling, G., Equiluminance, sensitive calibration, three-systems theory, and equiluminous chromatic motion perception, invited talk given by Lu in the 18th Annual Meeting of the International Society for Psychophysics – Fechner Day 2002, Rio de Janeiro, Brazil.
- Lu, Z.-L., The feature-binding problem. Institute of Biophysics, Chinese Academy of Science, Beijing, China.
- 2003 Lu, Z.-L., External noise methods, observer models, and mechanisms of attention/perceptual learning, Institute of Mathematical Behavioral Sciences, University of California, Irvine.
- Lu, Z.-L., On excluding unwanted information by spatial attention, Workshop on visual attention, San Miniato, Italy.

- Lu, Z.-L., Habituation and sensory memory. The 5th UCI Neuroscience Symposium, University of California, Irvine.
- 2004 Lu, Z.-L., Mechanisms of perceptual learning. Second annual USC Vision Symposium, University of Southern California, Los Angeles.
- Lu, Z.-L., Mechanisms of perceptual learning. 11th Joint Symposium on Neural Computation, University of Southern California, Los Angeles.
- Lu, Z.-L., Mechanisms of perceptual learning, School of Life Sciences, University of Science and Technology of China, Hefei, Anhui, China.
- Lu, Z.-L., Mechanisms of perceptual learning, School of Cognitive Neuroscience and Learning, Beijing Normal University, Beijing, China.
- Lu, Z.-L., Mechanisms of perceptual learning, National Laboratory of Cognitive Science, Institute of Biophysics, Beijing, China.
- 2005 Lu, Z.-L., How the visual system computes motion? Department of Biomedical Engineering, University of Southern California, Los Angeles, CA.
- Lu, Z.-L., Characterizing Mechanisms Underlying Observer Performance Improvements and Decrements, Smith Kettlewell Institute of Eye Research, San Francisco, CA.
- Lu, Z.-L., Mechanisms of attention. School of Optometry, University of Houston, Texas.
- Lu, Z.-L., Habituation and sensory memory, University of Texas, San Antonio, Texas.
- Lu, Z.-L., Characterizing Mechanisms Underlying Observer Performance Improvements and Decrements, Department of Cognitive Science, University of California, Irvine, CA.
- Lu, Z.-L., Third-order motion and feature-binding, Institute of Biophysics, Chinese Academy of Science, Beijing, China.
- Lu, Z.-L., Mechanisms of perceptual learning, Posit Science Corporation, San Francisco, CA.
- Lu, Z.-L., Fast decay of iconic memory in observers at-risk for the Alzheimer's Disease, Alzheimer's Disease Research Center, USC, Los Angeles, CA.
- 2006 Lu, Z.-L., Characterizing observers and their functions. Department of Cognitive Sciences, University of California, Irvine, CA.
- Lu, Z.-L. & Doshier, B., Characterizing observer states with external noise, Society of Experimental Psychologists, San Diego, CA.
- Lu, Z.-L., Characterizing observers and their functions. Department of Brain and Psychological Science, Indiana University, Bloomington, IN.
- Lu, Z.-L., Characterizing observers and their functions. Department of Psychology, University of California, Santa Barbara, CA.
- Lu, Z.-L., Characterizing observers and their functions. Department of System Management and Automatic Control, Huazhong University of Science and Technology, Wuhan, Hubei, China.
- Lu, Z.-L., Faculty Bios, Psi Chi, Department of Psychology, University of Southern California, Los Angeles, CA.
- Lu, Z.-L., Fast decay of iconic memory in observers at-risk for Alzheimer's disease, Multidisciplinary Research Colloquium Series, School of Gerontology, University of Southern California, Los Angeles, CA.
- Lu, Z.-L., Magnetic source imaging of the human brain. Beijing Normal University, Beijing, China.
- Lu, Z.-L., Covert attention enhances stimulus and excludes external noise in early visual areas. Sino-Western Exchanges in Cognitive Neuroscience, Beijing, China.
- Lu, Z.-L., Characterizing Mechanisms Underlying Observer Performance Improvements and Decrements, Department of Psychology, Beijing University, Beijing, China.
- Lu, Z.-L., Characterizing observers and their functions. CVS Boynton Colloquium, Center for Vision Sciences, University of Rochester, Rochester, NY.

- Lu, Z.-L., What can we learn about human perceptual from the external noise methods. Technical Talk, Center for Vision Sciences, University of Rochester, Rochester, NY.
- Lu, Z.-L., Ross workshop on research schools, East Hampton, NY.
- 2007 Lu, Z.-L., Covert attention enhances stimulus and excludes external noise in early visual areas. Workshop on Visual Attention, Buenos Aires, Argentina.
- Lu, Z.-L., Effects of covert attention in early visual cortical areas. 5th Vision Symposium, Neuroscience Graduate Program, USC.
- Lu, Z.-L., Effects of covert attention in early visual cortical areas: Contrast-gain and external noise exclusion. Department of Biomedical Engineering, Emory University, Atlanta, GA.
- Lu, Z.-L., Identifying Mechanisms of Amblyopia, *Frontiers in Human Information Processing: Vision, Attention, Memory, and Applications: A Tribute to George Sperling*. Irvine, CA.
- Lu, Z.-L., Introduction to MRI and fMRI, fMRI Symposium, 40th Annual Society of Mathematical Psychology Meeting, Costa Mesa, CA.
- Lu, Z.-L., Effects of covert attention in early visual cortical areas: Contrast-gain and external noise exclusion. Department of Biomedical Engineering, Southeast University, Nanjing, China.
- Lu, Z.-L., Mechanisms of attention: Psychophysics and fMRI, School of Information Science, University of Science and Technology of China, Hefei, Anhui, China.
- Lu, Z.-L., Mechanisms of attention: Psychophysics and fMRI, State Key Laboratory of Cognitive and Learning Science, Beijing Normal University, Beijing, China.
- Lu, Z.-L., Four Lectures: (1) Administrative logistics and overview, (2) MRI scanners and safety issues, (3) fMRI design (Block-design), and (4) Advanced fMRI design (Event-related & mixed design). Neuroimaging Training Workshop at Beijing Normal University , Beijing, China.
- Lu, Z.-L., Mechanisms of attention: Psychophysics and fMRI, Neuroscience Graduate Program Retreat, USC.
- Lu, Z.-L., Three systems theory of human visual motion perception, Neuroscience Graduate Program, USC.
- Lu, Z.-L., Perceptual Mechanisms and Learning in Anisotropic Amblyopia, *Plasticity of Sensory Systems: Critical Periods Re-examined*, McDonnell Foundation, New York, NY.
- Lu, Z.-L., Deficits in external noise exclusion underlie the etiology of dyslexia, *Plasticity of Sensory Systems: Critical Periods Re-examined*, McDonnell Foundation, New York, NY.
- Lu, Z.-L., Psychophysics and dyslexia, Sackler Institute, New York, NY.
- Lu, Z.-L., Mechanisms of Attention: Psychophysics, cognitive Psychology, and Cognitive Neuroscience, Keynote talk, Japanese Psychonomic Society, Tokyo, Japan.
- Lu, Z.-L., Mechanisms of Attention: Psychophysics, cognitive Psychology, and Cognitive Neuroscience, Riken Brain Science Institute, Wako City, Saitama, Japan.
- Lu, Z.-L., Characterizing Mechanisms Underlying Observer Performance Improvements and Decrements, NTT Research, Tokyo, Japan.
- Lu, Z.-L., Characterizing Observers and Their Functions, Department of Psychology, University of Tokyo, Tokyo, Japan.
- 2008 Lu, Z.-L., Fast decay of iconic memory in observers at-risk for Alzheimer's disease, International Symposium on Neuroimaging, Cognitive Aging, and Alzheimer's Disease, Beijing Normal University, Beijing, China.
- Lu, Z.-L., Characterizing Mechanisms Underlying Observer Performance Improvements and Decrements, National Key Laboratory of Cognitive Science and Learning, Beijing Normal University, Beijing, China.

- Lu, Z.-L., Mechanisms of Attention, Symposium on Frontiers in Psychological Science, Association of Psychological Science and Chinese Psychological Society, Beijing, China.
- Lu, Z.-L., Characterizing Mechanisms Underlying Observer Performance Improvements and Decrements, National Taiwan University, Taipei, Taiwan.
- Lu, Z.-L., Habituation and Sensory Memory, National Yang-Ming University, Taipei, Taiwan.
- Lu, Z.-L., Three Systems Theory of Human Visual Motion Perception, National Taiwan University, Taipei, Taiwan.
- Lu, Z.-L., Lesmes, L. A., Baek, J., Jeon, S., Doshier, B. A. & Albright, T., The Quick Methods: Bayesian Adaptive Estimation of Psychological Functions. The 15th Joint Symposium on Neural Computation, University of California, Irvine, CA.
- Lu, Z.-L., Mechanisms of Attention: Psychophysics, Cognitive Psychology, and Cognitive Neuroscience, The Salk Institute, La Jolla, CA.
- Lu, Z.-L., Update on amblyopia and dyslexia, Critical Period Re-examined (CPR) Network Meeting, Champagne, France.
- Lu, Z.-L., Characterizing Observers and Their Functions, Laboratoire Psychologie de la Perception (LPP), UMR 2929, Université Paris Descartes & CNRS, Paris, France.
- Lu, Z.-L., Perceptual Learning, Accelerated Learning Workshop, Institute for Defense Analyses, Alexandria, VA.
- Lu, Z.-L., Mechanisms of Attention, NIH, Bethesda, MD.
- Lu, Z.-L., Feasibility of an amblyopia treatment system: Training equipment and procedure, Hong Kong Applied Science and Technology Research Institute Company Limited, Hong Kong.
- Lu, Z.-L., Characterizing Mechanisms Underlying Observer Performance Improvements and Decrements in Visual and Auditory Perception, The Distinguished Speaker Series, House Ear Institute, Los Angeles, CA.
- Lu, Z.-L., Mechanisms of Perceptual Learning, The 1st International Workshop on Perceptual Learning, Beijing, China.
- Lu, Z.-L., Brainwave Recognition, Asia-Pacific Conference on Mind Brain and Education, Nanjing, China.
- Lu, Z.-L., Update on perceptual learning in amblyopia, General Hospital of the Nanjing Division of the People's Liberation Army, Nanjing, China.
- 2009 Lu, Z.-L., Functions and mechanisms of perceptual learning, Seminars in Plasticity, Learning and Memory, Neuroscience Graduate Program, USC.
- Lu, Z.-L., Functional magnetic resonance imaging and its application in understanding the neural mechanisms of attention, Colloquium, Department of Physics, USC.
- Lu, Z.-L., Risk and rewarding processing in human decision making, Colloquium, Department of Biomedical Engineering, Emory University, Atlanta, GA.
- Lu, Z.-L., Cognitive and neural mechanisms of attention, invited talk, Opening of the Penn State Social, Life & Engineering Sciences Imaging Center (SLEIC), State College, Pennsylvania.
- Lu, Z.-L., Cognitive and neural mechanisms of attention, Colloquium, Department of Psychology, University of Richmond, Richmond, Virginia.
- Lu, Z.-L., Study and research: the pursuit of truth. Shashi Middle School, Jingzhou, Hubei, China.
- Lu, Z.-L., Cognitive and neural mechanisms of attention, Workshop on Cognitive Science: from cellular mechanisms to computational theories, Beijing, China.
- Lu, Z.-L., Brain-wave Recognition, Famous Scholar Forum, Zhejiang University of Technology, Hangzhou, Zhejiang, China.

- Lu, Z.-L., Mechanisms and perceptual learning of anisometric amblyopia, Famous Scholar Forum, Zhejiang University of Technology, Hangzhou, Zhejiang, China.
- Lu, Z.-L., Functions and Mechanisms of Perceptual Learning, Critical Period Re-examined (CPR) Network Meeting, RIKEN, Japan.
- Lu, Z.-L., How to publish in SCI/SSCI journals. School of Education, University of Hong Kong, Hong Kong.
- Lu, Z.-L., Functions and Mechanisms of Perceptual Learning, Department of Psychology, University of Hong Kong, Hong Kong.
- Lu, Z.-L., Cognitive and neural mechanisms of attention, Department of Psychology, University of Hong Kong, Hong Kong.
- 2010 Lu, Z.-L., Introduction to MRI and fMRI, Department of Rehabilitation, Polytechnic University of Hong Kong, Hong Kong.
- Lu, Z.-L., Experimental Design, Department of Rehabilitation Science, Polytechnic University of Hong Kong, Hong Kong.
- Lu, Z.-L., Perceptual Learning and Neural Rehabilitation, Department of Rehabilitation Science, Polytechnic University of Hong Kong, Hong Kong.
- Lu, Z.-L., Characterizing Observers and Their Functions, Department of Psychology, Ohio State University, Columbus, Ohio.
- Lu, Z.-L., Functions and Mechanisms of Perceptual Learning, School of Optometry, University of California, Berkeley.
- Lu, Z.-L., Perceptual Mechanisms and Learning in Amblyopia, Department of Rehabilitation Science, Polytechnic University of Hong Kong, Hong Kong.
- Lu, Z.-L., Writing Successful Grant Proposals, Department of Rehabilitation Science, Polytechnic University of Hong Kong, Hong Kong.
- Lu, Z.-L., Cognitive and neural mechanisms of attention, Colloquium, Department of Psychology, University of California, Riverside, California.
- Lu, Z.-L., Functions and Mechanisms of Perceptual Learning, Department of Psychology, University of California, Los Angeles.
- Lu, Z.-L., Augmented Hebbian Learning Accounts for Complex Patterns of Feedback in Perceptual Learning, Second International Workshop on Perceptual Learning, Eilat, Israel.
- 2011 Lu, Z.-L., Brain alignment based on conformal mapping, AFOSR PI Meeting, Dayton, Ohio
- Lu, Z.-L., Visual illusion contributes to the break of the curveball, Vision Symposium, USC, Los Angeles, CA
- Lu, Z.-L., Functions and mechanisms of perceptual learning, Symposium on Models of Perceptual Learning, Vision Science Society, Naples, Florida
- Lu, Z.-L., Perceptual learning in adults with normal vision, Canadian Institute of Advanced Research (CIFAR), Quebec, Canada.
- 2012 Lu, Z.-L., Brain alignment based on conformal mapping, AFOSR PI Meeting, Washington, DC.
- Lu, Z.-L., Exploring individual differences in sensory memory, Duke Institute for Brain Sciences Constituent Centers, Duke University, Durham, NC.
- Lu, Z.-L., Quick Methods, Center for Cognitive Science, Ohio State University, Columbus, OH.
- Lu, Z.-L., Binocular combination in normal and amblyopic vision, Schepens Eye Research Institute, Boston, MA.
- Lu, Z.-L., Functions and mechanisms of perceptual learning, 16th International Conference on Cognitive Neural Systems, Boston, MA.

- Lu, Z.-L., Mechanisms of attention: Psychophysics, physiology, and cognitive neuroscience, Institute of Psychology, Chinese Academy of Science, Beijing, China
- Lu, Z.-L., Functions and mechanisms of perceptual learning, National Central University, Chungli, Taiwan
- Lu, Z.-L., Quick methods: Bayesian adaptive methods for estimating psychological functions, National Central University, Chungli, Taiwan
- Lu, Z.-L., Perceptual Learning in Adults with Amblyopia, Third International Workshop on Perceptual Learning, Nara, Japan.
- 2013 Lu, Z.-L., Mechanisms of attention: Psychophysics, physiology, and cognitive neuroscience, Neuroscience Program, Michigan State University, East Lansing, Michigan
- Lu, Z.-L., Visual Illusion Contributes to the Break of the Curveball, Center for Cognitive and Brain Sciences, OSU, Columbus, OH
- Lu, Z.-L., Functions and mechanisms of perceptual learning, Neuroscience Major, OSU, Columbus, OH
- Lu, Z.-L., Binocular interaction in phase, contrast, and depth perception, Asian Pacific Conference on Vision, Suzhou, China
- Lu, Z.-L., Quick methods: Bayesian adaptive methods for estimating psychological functions, First Global Chinese Vision Sciences Conference, Suzhou, China
- Lu, Z.-L., Perceptual Learning in Adults with Amblyopia, Amblyopia Translational Research Alliance (ATRA), Toronto, Canada
- Lu, Z.-L., Functions and mechanisms of perceptual learning, Neuroscience Graduate Student Program, OSU, Columbus, OH
- Lu, Z.-L. & Wang, J. H., Optimization of MRI Images, Wakeup Startup, Technology Commercialization Office, OSU, Columbus, OH
- Lu, Z.-L., Quick methods: Bayesian adaptive methods for estimating psychological functions, Center for Cognitive Science, Rutgers University, New Brunswick, New Jersey.
- Lu, Z.-L., Neural Basis of Learning to Read a Second Language: Evidence from Artificial Language Training Studies, Institute of Chinese Studies, OSU, Columbus, OH
- Lu, Z.-L., qCSF: A Bayesian Adaptive Procedure for Precise and Efficient Measurement of Contrast Sensitivity Function, School of Optometry, OSU, Columbus, OH
- Lu, Z.-L., Quick methods: Bayesian adaptive methods for estimating psychological functions, Department of Psychology, OSU, Columbus, OH
- Lu, Z.-L. & Wang, J. H., Optimization of MRI Images, Big IDEAs for Health, IDEA Studio, OSU, Columbus, OH
- Lu, Z.-L., Perceptual Learning: How Visual Experience Shapes Perception, Center for Brain, Cognition and Behavior, Penn State University, State College, PA
- 2014 Lu, Z.-L. & Wang, J. H., Optimization of MRI Images, Big IDEAs for Health, IDEA Studio, OSU, Columbus, OH
- Lu, Z.-L., The break of the curveball, Humanities and Cognitive Sciences High School Summer Institute, OSU, Columbus, Ohio
- Lu, Z.-L., Perceptual learning: How experience shapes visual perception, Department of Psychology, OSU
- Lu, Z.-L., Efficient assessment of visual deficits and rehabilitation methods in amblyopia, Amblyopia Translational Research Alliance, Second Annual Meeting, Boston, Massachusetts
- Lu, Z.-L., Stability and plasticity in perceptual learning, 4th International Workshop on Perceptual Learning, Jongny, Switzerland

- Lu, Z.-L., Efficiency assessment of visual deficits in amblyopia, SUNY College of Optometry, New York, NY
- Lu, Z.-L., Quick Methods: Bayesian Adaptive Methods for Estimating Psychological Functions, Asia-Pacific Conference on Computational Behavioral Sciences (APCCBS*2014), Seoul, Korea.
- Lu, Z.-L., Quick Methods: Bayesian Adaptive Methods for Estimating Psychological Functions, Central Chinese Normal University, Wuhan, Hubei, China
- Lu, Z.-L., Perceptual Learning: How Visual Experience Shapes Perception, McGovern Institute, Peking University
- 2015 Lu, Z.-L., Mechanisms of abnormal binocular interactions in anisometric amblyopia, The 30th Asia-Pacific Academy of Ophthalmology Congress and the 20th Congress of the Chinese Ophthalmological Society, Guangzhou, China
- Lu, Z.-L., Binocular deficits and perceptual learning in amblyopia, People's Hospital, Nanning, Guangxi, China
- Lu, Z.-L., Mechanisms of abnormal binocular interactions in anisometric amblyopia, Amblyopia Translational Research Alliance (ATRA), Third Annual Meeting, Woods Hole, MA
- Lu, Z.-L., Mechanisms of abnormal binocular interactions in anisometric amblyopia, Vision Health Forum, Chengdu, Sichuan, China
- Lu, Z.-L., Design of fMRI experiments in cognitive neuroscience, Jiangsu Normal University, Xuzhou, Jiangsu, China
- Lu, Z.-L., Applications of fMRI in Vision Research: Retinotopy, Jiangsu Normal University, Xuzhou, Jiangsu, China
- Lu, Z.-L., Mechanisms of Covert Attention: External Noise Exclusion and Stimulus Enhancement in Early Visual Areas, Jiangsu Normal University, Xuzhou, Jiangsu, China
- Lu, Z.-L., Pattern similarity and memory: Towards a mechanistic understanding, Jiangsu Normal University, Xuzhou, Jiangsu, China
- Lu, Z.-L., The Quick Methods: Bayesian Adaptive Estimation of Psychological Functions, Center for Cognitive and Brain Sciences, Deer Creek, OH
- Lu, Z.-L., Exploring Individual Differences in Sensory Memory, Cognitive Area Brown Bag, Department of Psychology, OSU, Columbus, OH
- Lu, Z.-L., Stillman, P. & Cranmer, S., Quantifying network health using the exponential random graph model, First Concussion Neuroimaging Consortium Meeting, Lincoln, Nebraska
- 2016 Lu, Z.-L., The quick Methods, Rotman School of Management, University of Toronto, Toronto, Canada
- Lu, Z.-L., Stillman, P. & Cranmer, S., Quantifying network health using the exponential random graph model, Global Brain Health and Performance Summit, OSU, Columbus, OH
- Lu, Z.-L., Exploring individual differences in sensory memory, Undergraduate Summer Institute, Center for Cognitive and Brain Sciences, OSU, Columbus, OH
- Lu, Z.-L., Sensory memory and Alzheimer's disease, Humanities and Cognitive Sciences High School Summer Institute, OSU, Columbus, OH
- Lu, Z.-L., Exploring individual differences in sensory memory, Annual Retreat, Center for Cognitive and Brain Sciences, OSU, Deer Creek, OH
- Lu, Z.-L., Quick CSF: Detecting hidden vision loss, University of Alabama, Birmingham, AL.
- 2017 Lu, Z.-L., Mechanisms of visual attention, NEUR 525 Advanced Overview of Neuroscience II, University of Southern California, Los Angeles
- Lu, Z.-L., Quick CSF: Detecting hidden vision loss, School of Ophthalmology and optometry, Sun Yat-sen University, Guangzhou, Guangdong, China

- Lu, Z.-L., Quick CSF: Detecting hidden vision loss, Hainan Zhongshan Ophthalmology and optometry Hospital, Haikou, Hainan, China
- Lu, Z.-L., Perceptual learning and models, Rank Prize Funds Symposium on Learning to See: From Retinal to Brain Computations, Grasmere, UK
- Lu, Z.-L., Bosco S. Tjan: An ideal scientific role model, In Fondest Memory of Bosco, pre-VSS Symposium, St Peters Beach, Florida
- Lu, Z.-L., Attention Enhances Signal and Excludes External Noise in Visual Cortex, Memorial Symposium of Kang Cheng, 2nd Beijing Vision Conference, Qufu, Shandong, China
- Lu, Z.-L., Quick CSF: Detecting Hidden Vision Loss, Symposium on Translational Vision Research, 2nd Beijing Vision Conference, Qufu, Shandong, China
- Lu, Z.-L., Quick CSF: Detecting Hidden Vision Loss, School of Optometry, Indiana University, Bloomington, Indiana
- Lu, Z.-L., Recent Advances in Bayesian Adaptive Assessment of Behavioral Functions and Statistical Modeling of Brain Networks, New York University Shanghai, Shanghai, China
- Lu, Z.-L., Quick CSF: Detecting Hidden Vision Loss, Wenzhou Medical University, Wenzhou, Zhejiang, China
- Lu, Z.-L., Next-generation vision testing: the quick CSF, 14th China Forum on Solid State Lighting, Beijing, China
- Lu, Z.-L., Recent Advances in Bayesian Adaptive Assessment of Behavioral Functions and Statistical Modeling of Brain Networks, Cognitive Seminar, OSU, Columbus, Ohio
- 2018 Lu, Z.-L., Perceptual Learning: How Visual Experience Shapes Perception, Center for Neuroscience, New York University, New York