

## Yingying Wang, Ph.D.

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### Education

**Ph.D., Biomedical Engineering/Medical Imaging** University of Cincinnati, OH 2009 – 2013.  
Dissertation: "*Integration of fMRI and MEG towards modeling language networks in the brain*",  
Advisor: Dr. Scott K. Holland

**M.S., Biomedical Engineering/Medical Imaging** Shanghai University, China 2002 – 2005.  
Dissertation: "*Three-dimensional reconstruction technique of image from digital subtraction angiography (DSA)*", Advisor: Dr. Weicheng Zhang

**B.S., Biomedical Engineering/Medical Imaging** Shanghai University, China 1998 – 2002.  
Dissertation: "*Collection, conversation and net transport of medical signal*", Advisor: Dr. Weicheng Zhang

### Professional Experience

**Assistant Professor** University of Nebraska-Lincoln, NE 2016/01 – present.  
• Establish Neuroimaging lab and stimulate Neuroimaging research in the department.  
• Research focuses are to use Neuroimaging techniques to study brain functions and structures.

**Post-doc Research Fellow** Boston Children's Hospital, MA 2014/01 – 2015/12.  
• Mentor: Nadine Gaab, Ph.D.  
• Built data processing pipeline in MATLAB to analyze functional magnetic resonance imaging (fMRI) and diffusion weighted imaging (DWI) data in order to learn about dyslexia and to explore the bio-markers for early identification of children at risk for dyslexia.

**Graduate Research Assistant** Cincinnati Children's Hospital, OH 2009/09 – 2013/12.  
• Mentor: Scott K. Holland, Ph.D.  
• Developed MATLAB tools to combine fMRI and Magnetoencephalography (MEG) data in order to study language function and networks in the brain.

**Research Assistant III** Cincinnati Children's Hospital, OH 2006/06 – 2009/09.  
• Supervisor: Jing Xiang, Ph.D.  
• Recruited over 150 children to participate in a MEG study and collected MEG data with different paradigms targeting visual, auditory, sensory motor and language functions.  
• Collaborated with clinical doctors and helped them design and set up their MEG studies.  
• Trained many undergraduate students and visiting scholars on how to use MEG system and analyze MEG data.

**Research Assistant** Hospital for Sick Children, Toronto, Canada 2005/11 – 2006/06.  
• Supervisor: Jing Xiang, Ph.D.  
• Developed MEG signal processing toolbox.

**Graduate Research Assistant** Shanghai University, Shanghai, China 2002/09 – 2005/03.  
• Mentor: Weicheng Zhang, Ph.D.  
• Developed a software package which connects two computers through serial interface.  
• Developed a MATLAB program to simulate DSA signals.

**Teaching Experience****Directed Research** University of Nebraska-Lincoln, NE Fall 2017 – Spring 2019

- Direct speech-language pathology master student to do neuroimaging research.
- Taught her how to write IRB protocols and how to analyze neuroimaging data.
- Taught her how to generate final report to summarize research findings.

**Neuroimaging Data Analysis** University of Nebraska-Lincoln, NE Summer 2017, 2018

- Designed course syllabus and created instructions on various neuroimaging data analysis techniques (MRI, fMRI, MEG, DTI).
- Provided sample data for students to practice and understand different neuroimaging data processing pipelines.

**Neuroimaging & Lang Disorders** University of Nebraska-Lincoln, NE Spring 2017, Fall 2018

- Designed course syllabus, created and presented 14 lectures on basic neuroimaging techniques, literature review on topics including traumatic brain injury in children and adults.
- Provided hands-on experience on functional Near-infrared spectroscopy (fNIRS) system.

**Research in Language & Literacy** University of Nebraska-Lincoln, NE Fall 2016, 2017, 2018

- Designed course syllabus, created and presented 15 lectures on language and reading development, neuroimaging research studies in language and reading impairments, and interventions.

**Neuroimaging course** Boston Children's Hospital, MA Summer, Fall 2014

- Designed course syllabus, created and presented 10 lectures on basic MRI principles, basic fMRI data analysis, and advanced neuroimaging data processing techniques.
- Designed and built the course website and provided trainees with hands-on materials.

**Neuroimaging course** Cincinnati Children's Hospital, OH Summer 2013

- Organized the entire summer neuroimaging training course including inviting speakers and booking conference rooms.
- Prepared 2 lectures on advanced imaging methods including independent component analysis and connectivity analysis.
- Held 2 hands-on sessions and helped trainees with various analysis problems.

**Bioinstrumentation** University of Cincinnati, OH Winter, Spring 2009, Winter, Spring 2012

- Taught ten 4-hour laboratory lectures covering basic principles of biopotential electrodes, analysis and selection of physical, electrical, mechanical, and thermal transduction mechanisms for four quarters.
- Held weekly questions and answers sessions to provide additional help to students.
- Graded students' laboratory reports, midterm, and final exams.

**Honors, Fellowships and Awards**

- The Fellow Award, Division of Developmental Medicine, Boston (1/30) 12/2015
- Cognitive Neuroscience Society (CNS), People's Choice Award, Boston (1/300) 04/2014
- NIH funded Neuroimaging Training Award, University of California Summer 2014
- Graduate Student Research Fellowship, University of Cincinnati (top 27%) Summer 2012
- Conference Travel Awards, University of Cincinnati (top 20%) 2012, 2013
- Shanghai Outstanding Graduate Student Award (top 5%) 2005
- Special Grade Scholarship, Shanghai University, China (top 5%) 1998 - 1999
- First Grade Scholarship, Shanghai University, China (top 5%) 1999 - 2001
- Merit Student, Shanghai University, China (top 5%) 1998 - 2005

**Peer-Reviewed Publications**

- (1) Ozernov-Palchik, O., Norton, E.S., **Wang, Y.**, Beach, S.D., Zuk, J., Wolf, M., Gabrieli, J.D.E., and Gaab, N. (2018). The relationship between socioeconomic status and white

- matter microstructure in pre-reading children: A longitudinal investigation. *Hum Brain Mapp.*, epub. DOI: 10.1002/hbm.24407
- (2) Mathur, A., Sibaii, F., Hughes, M., **Wang, Y.**, (2018). Understanding the Reading Brain: An Insight from Deafness/Impaired Hearing/Hearing loss, *Hearing research*, (In preparation).
  - (3) **Wang, Y.** (in press). Development of Emergent Reading Experience. In *Early Childhood Education*. London: Development of Emergent Reading Experience. IntechOpen Limited. (In press)
  - (4) Custead, R., Oh, H., **Wang, Y.**, Barlow, S., (2017) Brain encoding of saltatory velocity through a pulsed pneumotactile array in the lower face. *Brain research*, 1677:58-73. PMID: 28958864
  - (5) **Wang, Y.**, Mauer, M., Raney, T., Peysakhovich, B., Becker, B., Sliva, D., Gaab, N., (2017) Development of tract-specific white matter pathways during early reading development in children at familial risk for dyslexia, *Cerebral Cortex*, 27(4):2469-2485. PMID: 27114172
  - (6) Oh, H., Custead, R., **Wang, Y.**, Barlow, S., (2017) Neural encoding of saltatory pneumotactile velocity in human glabrous hand. *PloS one*, 12(8):e0183532. PMID: 28841675
  - (7) Raschle, N.M., Becker, B.L., Smith, S., Fehlbauer, L.V., **Wang, Y.**, Gaab, N., (2017) Investigating the Influences of Language Delay and/or Familial Risk for Dyslexia on Brain Structure in 5-Year-Olds. *Cerebral cortex*, 27(1):764-776. PMID: 26585334
  - (8) Powers, S., **Wang, Y.**, Sideridis, G., Gaab, N., (2016) Examining the relationship between home literacy environment and neural correlates of phonological processing in beginning readers with and without a familial risk for dyslexia: an fMRI study, *Annals of Dyslexia*, 66(3):337-360. PMID: 27550556 [co-first author]
  - (9) Ozernov-Palchik, O., Yu, X., **Wang, Y.**, Gaab, N., (2016) Lessons to be learned: how a comprehensive neurobiological framework of atypical reading development can inform educational practice, *Neuroscience of education*, 10: 45-58.
  - (10) Ji, L., **Wang, Y.**, Zhu, D., Liu, W., Shi, J., (2015) White matter differences between multiple system atrophy (parkinsonian type) and Parkinson's disease: a diffusion tensor image study, *Neuroscience*, 205: 109-116. PMID: 26215920
  - (11) Thompson, E.A., Xiang, J., and **Wang, Y.**, (2015). Frequency-spatial beamformer for MEG source localization. *Biomedical Signal Processing and Control*, 18, 263-273.
  - (12) Horowitz-Kraus, T., DiFrancesco, M., Kay B., **Wang, Y.**, Holland, S.K., (2015) Increased resting-state functional connectivity of visual- and cognitive-control brain networks after training in children with reading difficulties, *NeuroImage: Clinical*, 8: 619-630. PMID: 26199874
  - (13) Pardos, M., Korostenskaja, M., Xiang, J., Fujiwara, H., Lee, K.H., Horn, P.S., Byars, A., Vannest, J., **Wang, Y.**, Hemasilpin, N., et al. (2015). Physical Feature Encoding and Word Recognition Abilities Are Altered in Children with Intractable Epilepsy: Preliminary Neuromagnetic, *Evidence. Behav Neurol*, 2015, 237436.
  - (14) **Wang, Y.**, Holland, S.K., (2014) Comparison of functional network connectivity for passive-listening and active-response narrative comprehension in adolescents, *Brain Connectivity*, 4(4): 273-285. PMID: 24689887
  - (15) Szaflarski, J., **Wang, Y.**, Altaye, M., Rajagopal, A., Byars, A., Plante, E., Holland, S.K., (2014) Ten years in the making a longitudinal study of language development in children and adolescents. *Neurology*, 82 (10 supplement): 337.
  - (16) Horowitz-Kraus, T., **Wang, Y.**, Plante, E., Holland, S.K., (2014) Involvement of the right hemisphere in reading comprehension: A DTI study. *Brain Research*, 1582: 34-44. PMID: 24909792
  - (17) Horowitz-Kraus, T., Vannest, J., Kadis, D., Cicchino, N., **Wang, Y.**, Holland, S.K., (2014) Reading acceleration training changes brain circuitry in children with reading difficulties, *Brain and Behavior*, Sep.21.2014. PMID: 25365797

- (18) Gummadavelli, A., **Wang, Y.**, et al. (2013) Spatiotemporal and frequency signatures of word recognition in the developing brain: A magnetoencephalographic study. *Brain Research*, 1498: 20-32. PMID: 23313876
- (19) Korostenskaja, M., Harris, E., Giovanetti, C., Horn, P., **Wang, Y.**, Rose, D., Fujiwara, H., and Xiang, J. (2013). Magnetoencephalography reveals altered auditory information processing in youth with obsessive-compulsive disorder. *Psychiatry Res* 212, 132-140.
- (20) **Wang, Y.**, Adamson, C., Yuan, W., Altaye, M., Rajagopal, A., Holland, S.K., (2012) Sex differences in white matter development during adolescence: a DTI study, *Brain Research*, 1478: 1-15. PMID: 22954903
- (21) **Wang, Y.**, Holland, S.K., Vannest, J., (2012) Concordance of MEG and fMRI patterns in adolescents during verb generation. *Brain Research*, 1447:79-90. PMID: 22365747
- (22) Guo, X., Xiang, J., **Wang, Y.**, et al. (2012) Aberrant Neuromagnetic Activation in the Motor Cortex in Children with Acute Migraine: A Magnetoencephalography Study. *Plos one*, 7 (11): e50095. PMID: 23185541
- (23) **Wang, Y.**, Xiang, J., Vannest, J., Holroyd, T., Narmoneva, D., Horn, P., et al. (2011) Neuromagnetic measures of word processing in bilinguals and monolinguals. *Clinical Neurophysiology*, 122(9): 1706-1717.
- (24) Zhang, R., Wu, T., **Wang, Y.**, et al., (2011) Interictal magnetoencephalographic findings related with surgical outcomes in lesional and nonlesional neocortical epilepsy, *Seizure*, 20(9): 692-700. PMID: 21782477
- (25) Guo, X., Xiang, J., Mun-Bryce, S., Bryce, M., Huang, S., Huo, X., **Wang, Y.**, Rose, D., Degrauw, T., Gartner, K., et al. (2011). Aberrant high-gamma oscillations in the somatosensory cortex of children with cerebral palsy: A meg study. *Brain and Development*. 34(7):576-83. PMID: 22018901. Epub 2011
- (26) Korostenskaja, M., Pardos, M., Kujala, T., Rose, D.F., Brown, D., Horn, P., **Wang, Y.**, Fujiwara, H., Xiang, J., Kabbouche, M.A., et al. (2011). Impaired Auditory Information Processing During Acute Migraine: A Magnetoencephalography Study. *International Journal of Neuroscience*, 121, 355-365.
- (27) Huo, X., **Wang, Y.**, Kotecha, R., Kirtman, E. G., Fujiwara, H., Hemasilpin, N., et al. (2010). High Gamma Oscillations of Sensorimotor Cortex During Unilateral Movement in the Developing Brain: a MEG Study. *Brain Topography*, 23(4): 375-384. PMID: 20577795
- (28) Korostenskaja, M., Pardos, M., Fujiwara, H., Kujala, T., Horn, P., Rose, D., Byars, A., Brown, D., Seo, J.H., **Wang, Y.**, et al. (2010). Neuromagnetic evidence of impaired cortical auditory processing in pediatric intractable epilepsy. *Epilepsy Res*, 92, 63-73.
- (29) Chen, Y., Xiang, J., Kirtman, E.G., **Wang, Y.**, Kotecha, R., and Liu, Y. (2010). Neuromagnetic biomarkers of visuocortical development in healthy children. *Clin Neurophysiol*, 121, 1555-1562.
- (30) Huo, X., Xiang, J., **Wang, Y.**, Kirtman, E. G., Kotecha, R., Fujiwara, H., et al. (2010) Gamma oscillations in the primary motor cortex studied with MEG. *Brain and Development*, 32(8): 619-624. PMID: 19836911
- (31) Wang, X., Xiang, J., **Wang, Y.**, Pardos, M., Meng, L., Huo, X., et al. (2010) Identification of Abnormal Neuromagnetic Signatures in the Motor Cortex of Adolescent Migraine. *Headache*, 50(6): 1005-1016. PMID: 20487034
- (32) Xiang, J., **Wang, Y.**, Chen, Y., Liu, Y., Kotecha, R., Huo, X., et al. (2010) Noninvasive localization of epileptogenic zones with ictal high-frequency neuromagnetic signals. *Journal of Neurosurgery: Pediatrics*, 5: 113-122. PMID: 20043746
- (33) Xiang, J., Liu, Y., **Wang, Y.**, Kotecha, R., Kirtman, E., Chen, Y., et al. (2009) Neuromagnetic correlates of developmental changes in endogenous high-frequency brain oscillations in children: A wavelet-based beamformer study. *Brain Research*, 1274(5): 28-39. PMID: 19362072

- (34) Xiang, J., Liu, Y., **Wang, Y.**, Kirtman, E., Kotecha, R., Chen, Y., et al. (2009) Frequency and spatial characteristics of high-frequency neuromagnetic signals in childhood epilepsy. *Epileptic disorders*, 11(2): 113-125. PMID: 19473946
- (35) Kotecha, R., Pardos, M., **Wang, Y.**, Wu, T., Horn, P., Brown, D., et al., (2009) Modeling the Developmental Patterns of Auditory Evoked Magnetic Fields in Children. *PLoS ONE*, 4(3): e4811. PMID: 19277207
- (36) Kotecha, R., Xiang, J., **Wang, Y.**, et al. (2009) Time, frequency and volumetric differences of high-frequency neuromagnetic oscillation between left and right somatosensory cortices. *International Journal of Psychophysiology*, 72(2): 102-110. PMID: 19041674
- (37) **Wang, Y.**, Xiang, J., Kotecha, R., Vannest, J., Liu, Y., Rose, D., et al. (2008) Spatial and Frequency Differences of Neuromagnetic Activities Between the Perception of Open-and Closed-class Words. *Brain Topography*, 21(2): 75-85. PMID: 18679788
- (38) Liu, Y., Xiang, J., **Wang, Y.**, Vannest, J.J., Byars, A.W., and Rose, D.F. (2008). Spatial and frequency differences of neuromagnetic activities in processing concrete and abstract words. *Brain Topography*, 20, 123-129.
- (39) **Wang, Y.**, Zhang, W., (2005) Design of 3D Reconstruction DSA System on Personal Computer. *Control & Automation*, 27: 105-107.
- (40) **Wang, Y.**, Zhang, W., (2004) The Technology of Digital Subtraction Angiography, *China Medical Devices Information*, 10(6): 1-4.
- (41) **Wang, Y.**, (2003) Bionic technology for implant systems, *Laboratory Material & Bio Technique*, 6: 41-45.

#### **Complete List of Published Work**

<https://www.ncbi.nlm.nih.gov/myncbi/browse/collection/51085230/?sort=date&direction=descending>

#### **Invited Presentations**

- (1) **Wang, Y.**, "Brain connectivity changes in children with and without a familial risk for dyslexia during reading development", Center for Brain, Biology and Behavior (CB3), MRI Users' meeting, Lincoln, NE, Dec., 2016.
- (2) **Wang, Y.**, "White Matter Development in at-risk children and typical controls", University of Nebraska Medical Center, Department of pharmaceutical sciences-seminar, Omaha, NE, Oct., 2016.
- (3) **Wang, Y.**, "Reading Development in Children", Department of Psychology, Cabin talk, Lincoln, NE, Sep., 2016.
- (4) **Wang, Y.**, "White Matter Development in Children", CB3, MRI Users' meeting, Lincoln, NE, Apr., 2016.
- (5) **Wang, Y.**, "White Matter Development in at-risk children and typical controls", Children, Youth, Families and Schools (CYFS) Summit, Research in Early Childhood, Lincoln Marriott Cornhusker Hotel, Lincoln, NE, Apr., 2016.
- (6) **Wang, Y.**, "White matter development in children at risk for dyslexia", Biomedical Engineering seminar series, University of Nebraska-Lincoln, Lincoln, NE, Mar., 2016.
- (7) **Wang, Y.**, "Brain research on reading and language development", Department of Special Education and Communication Disorders, Brown bag talk, Lincoln, NE, Feb., 2016.
- (8) **Wang, Y.**, "fMRI and MEG data fusion", Research Department of Biomedical Engineering in Institute of Electrical Engineering, Chinese Academy of Sciences (IEECAS), Beijing, China, Jun., 2012.
- (9) **Wang, Y.**, "Integration of fMRI and MEG in language network", First MRI-71 conference, Cincinnati Children's Hospital, OH. Jul., 2011.

#### **Oral and Poster Presentations**

- (1) **Wang, Y.**, Neural substrates of the executive attention network in children at-risk for dyslexia and typical controls, The dyslexia foundation, extraordinary brain symposium XV, The Buccaneer Hotel, St. Croix, US Virgin Islands. Jun.23.2016, *Oral presentation*.
- (2) **Wang, Y.**, Tract-specific white matter pathways during early reading development, Laboratories of Cognitive Neuroscience monthly meeting, Boston Children's Hospital, Boston, MA. Nov.13.2015, *Oral presentation*.
- (3) **Wang, Y.**, Raschle, N.M., Sliva, D., Mauer, M., Powers, S., Becker, B., Peysakhovich, B., Gaab, N., Atypical development of executive function in pre-readers at familial risk for dyslexia: a longitudinal fMRI study, 2<sup>nd</sup> annual meeting for New England Research on Dyslexia (NERDY) Society, Oct.24.2014, *Poster presentation*.
- (4) **Wang, Y.**, Atypical development of executive function in pre-readers at familial risk for dyslexia: a longitudinal fMRI study, Laboratories of Cognitive Neuroscience monthly meeting, Boston Children's Hospital, Boston, MA. Jul.9.2014, *Oral presentation*.
- (5) **Wang, Y.**, Raschle, N., Sliva, D., Dauvermann, M., Becker, B., Ozranov-Palchik, O., Peysakhovich, B., Smith, S., Figuccio, M., Zuk, J., Gaab, N., The development of phonological processing from the pre-reading to the beginning-reading stage in children with and without a family risk for developmental dyslexia, Cognitive Neuroscience Society (CNS), Apr.5 - 8.2014, *Poster presentation*.
- (6) **Wang, Y.**, Integration of fMRI and MEG towards modeling language networks in the brain, Fetal-Neonatal Neuroimaging & Developmental Science Center weekly meeting, Boston Children's Hospital, Boston, MA. Mar.18.2014, *Oral presentation*.
- (7) **Wang, Y.**, Holland, S.K., Vannest, J., Concordance of MEG and fMRI Patterns in Adolescents during Verb Generation, Human Brain Mapping conference, Beijing, China, Jun.10 - 14.2012, *Poster presentation*.
- (8) **Wang, Y.**, Preliminary MEG/fMRI Data I/II, MEG Users' Meeting, Cincinnati Children's Hospital, OH. Aug.27 and Sep.10.2009, *Oral presentation*.
- (9) **Wang, Y.**, Focus on the brain - Human Brain Mapping 2009 conference summary, MEG Users' Meeting, Cincinnati Children's Hospital, OH. Jul.2.2009, *Oral presentation*.
- (10) **Wang, Y.**, Xiang, J., et al., Neuromagnetic measures of word processing in bilinguals and monolinguals, Human Brain Mapping conference, San Francisco, CA. Jun.18 - 23.2009, *Poster presentation*.

#### **Conference Proceedings and Abstracts**

- (1) **Wang, Y.**, Sibaii, F., Oh, H., Barlow, S.M., (2018) Functional connectivity evoked by saltatory pneumotactile stimuli on the glabrous hand, 2019 OHBM Annual Meeting, Rome, Italy, June 8 (submitted).
- (2) Mathur, A., Sibaii, F., **Wang, Y.**, Neural specialization of reading in young children, (2018), CNS 2019 Annual Meeting, San Francisco, CA. March 23 (accepted).
- (3) Turesky, T., Jensen, S., Yu, X., Kumar, S., **Wang, Y.**, Sliva, D., Borjan, G., Sanfilippo, J., Haque, R., Kakon, S. H., Islam, N., Petri, W. J., Nelson, C., Gaab, N., (2018) The 6th Annual Flux Congress, "The relationship between poverty and resting-state functional connectivity in 2-month old Bangladeshi infants," Podium Conference Specialists, Berlin, Germany, Bangladesh. August 30.
- (4) Munn, L., Watkins, E., Walters, N., Sibaii, F., **Wang, Y.**, (2018) Spring Research Fair, Brain connectivity related to executive function in children with and without a familial risk for dyslexia, University of Nebraska-Lincoln, Lincoln, NE. April 11.
- (5) Ozernov-Palchik, O., Norton, E., **Wang, Y.**, Beach, S., Zuk, J., Wolf, M., Gabrieli, J., Gaab, N., (2017) The relationships among SES, white matter, and reading development: a longitudinal investigation from kindergarten to 2nd grade, Twenty-Fifth Annual Meeting Society for the Scientific Study of Reading (SSSR), July 8.

- (6) Turesky, T., Jensen, S., Kumar, S., Yu, X., **Wang, Y.**, Zollei, L., Boyd, E., Sanfilippo, J., Sliva, D., Gagoski, B., Nelson, C., Gaab, N., (2017) Functional neural networks present in 2-month old Bangladeshi infants, but show no association with adversity, Developmental Science Special Issue, Abstract.
- (7) Ozernov-Palchik, O., Norton, E., **Wang, Y.**, Beach, S., Zuk, J., Wolf, M., Gabrieli, J., Patel, A., Gaab, N., (2017) White matter integrity in kindergarten predicts rhythm performance in 2nd grade, The Neurosciences and Music – VI, Music, Sound and Health, Boston, June.
- (8) Zuk, J., Becker, B., Perdue, M., Yu, X., **Wang, Y.**, Chang, M., Raschle, N., Gaab, N., (2017) Neural correlates of phonological processing: disrupted in children with reading impairment and enhanced in children with musical training, The Neurosciences and Music – VI, Music, Sound and Health, Boston, June.
- (9) Zuk, J., Dunstan, J., Norton, E., Ozernov-Palchik, O., **Wang, Y.**, Gabrieli, J., Gaab, N., (2017) Investigating protective and compensatory mechanisms in kindergarteners at risk for reading impairment who subsequently develop typical reading skills, 29th APS Annual Convention, Boston, MA, May.
- (10) **Wang, Y.**, Mauer, M., Raney, T., Peysakhovich, B., Becker, B., Sliva, D., Gaab, N. (2016) Development of tract-specific white matter pathways during early reading development in children at familial risk for dyslexia, Cognitive Neuroscience Society, New York, NY. April 3.
- (11) **Wang, Y.**, Mauer, M., Raney, T., Peysakhovich, B., Becker, B., Sliva, D., Gaab, N. (2015) White matter development in children at risk for dyslexia, The Neurodevelopmental Disorders Symposium, Boston, MA. October.
- (12) **Wang, Y.**, Raschle, N.M., Sliva, D., Mauer, M., Powers, S., Becker, B., Peysakhovich, B., Gaab, N. (2014) Atypical development of executive function in pre-readers at familial risk for dyslexia: A longitudinal fMRI study. The 2nd Annual Meeting of the New England Research on Dyslexia (NERDY) Society, Boston, MA. October 2014.
- (13) Sliva, D., Peysakhovich, B., **Wang, Y.**, Grant, P.E., Gaab, N., Dehaes, M., (2014) Resting state auditory network strength is related to age, brain structure and familial risk for developmental dyslexia in infants, 4<sup>th</sup> Biennial Conference on Resting State Brain Connectivity, Cambridge, MA. September 11-13.
- (14) Zuk, J., **Wang, Y.**, Raschle, N.M., Becker, B., Chang, M., Gaab, N. (2014). Examining the neural correlates of rapid auditory processing and phonological processing in children with musical training, The 5th Annual Meeting of The Neurosciences and Music, Dijon, France, May.
- (15) **Wang, Y.**, Raschle, N.M., Sliva, D., Dauvermann, M.R., Becker, B., Ozernov-Palchik, O., Peysakhovich, B., Smith, S.A., Figuccio, M., Zuk, J., Gaab, N. (2014). The development of phonological processing from the pre-reading to the beginning-reading stage in children with and without a familial risk for developmental dyslexia, The 21st Annual Cognitive Neuroscience Society Meeting, Boston, April 2014.
- (16) Holland, S.K., **Wang, Y.**, et al. (2012) Sex difference of white matter anisotropic diffusion in developing adolescent brain, Human Brain Mapping conference, Beijing, China, June 10 - 14.
- (17) **Wang, Y.**, Xiang, J., Rose, D.F., Holroyd, T., Harris E., deGrauw, T.J., (2010) The Frequency Profile of Somatosensory Evoked Magnetic Fields in the Developing Brain, 17th International Conference on Biomagnetism Advances in Biomagnetism, IFMBE Proceedings, 28(9): 254-257.
- (18) Thompson, E.A., Holland, S.K., Xiang, J., **Wang, Y.**, (2010) MEG source localization using a frequency beamformer. Bioengineering Conference, Proceedings of the 2010 IEEE 36<sup>th</sup> Annual Northeast, 1-2.
- (19) Guo, X., Xiang, J., Chen, Y., Meng, L., Wang, X., **Wang, Y.**, (2010) Quantification of the Time and Frequency Signatures of Visual Cortical Activation in the Developing Brain: A Study with MEG and Wave-Cross Spectrogram, 17th International Conference on

- Biomagnetism Advances in Biomagnetism – Biomag2010, IFMBE Proceedings, 28(6): 183-186.
- (20) Korostenskaja, M., Pardos, M., Lee, K.H., Fujiwara, H., Kujala, T., Xiang, J., Vannest, J., **Wang, Y.**, et al., (2010) From Auditory Change Detection to Reading and Word Processing: Impairments in Children with Intractable Epilepsy. 17th International Conference on Biomagnetism Advances in Biomagnetism, IFMBE Proceedings, 28(13): 378-380.
  - (21) Xiang, J., **Wang, Y.**, et al., (2007) Volumetric localization of epileptic activity using wavelet-based synthetic aperture magnetometry. Proceedings of the 15th International Conference on Biomagnetism, International Congress Series, 1300:697-700.
  - (22) Xiang, J., Xiao, Z., **Wang, Y.**, et al., (2007) Detection of subtle structural abnormality in tuberous sclerosis using MEG guided post-image processing. Proceedings of the 15th International Conference on Biomagnetism, International Congress Series, 1300:693-696.

## **Research Grants**

### **Under Review**

- (1) **Wang, Y., Ph.D. (PI)** Biomedical Research Seed Grant, UNL, \$50,000, 09/19-08/20  
Project title: **“Neural Predictors of Speech Perception Outcomes in Adults with Cochlear Implants”**.  
My Role: Principal Investigator (PI), design and implement study protocols.
- (2) **Wang, Y., Ph.D. (PI)** Great Plains IDEa-CTR Scholars, \$50,000 annually, 09/19-08/20  
Project title: **“Neural Predictors of Speech Perception Outcomes in Adults with Cochlear Implants”**.  
My Role: Principal Investigator (PI), design and implement study protocols.
- (3) **Wang, Y., Ph.D. (PI)** Planning Grants, UNL, \$20,000, 07/01/19-06/30/20  
Project title: **“Building the Infrastructure for Collaborative Otorhinolaryngology-Communication Research”**.  
My Role: Principal Investigator (PI), draft the proposal and establish collaborations.
- (4) **Wang, Y., Ph.D. (PI)** Early Career Award R21, NIDCD, \$300,000, 07/01/19-06/30/22  
Project title: **“Neural Predictors of Speech Perception Outcomes in Adults with Cochlear Implants”**.  
My Role: Principal Investigator (PI), design and implement study protocols.

### **Rejected**

- (1) **Wang, Y., Ph.D. (PI)** Biomedical Research Seed Grant, UNL, \$50,000, 09/18-08/19  
Project title: **“Identifying Neural Predictors of Reading Development in Young Children with Hearing Loss”**.  
My Role: Principal Investigator (PI), design and implement study protocols.
- (2) **Wang, Y., Ph.D. (PI)** Great Plains IDEa-CTR Scholars, \$50,000 annually, 09/18-08/22  
Project title: **“Identifying Neural Predictors of Reading Development in Young Children with Hearing Loss”**.  
My Role: Principal Investigator (PI), design and implement study protocols.
- (3) **Wang, Y., Ph.D. (PI)** NIH DP2, \$ 2,086,671, 09/30/18-06/30/23  
Project title: **“Identifying Neural predictors of reading development in young children with hearing loss”**.  
My Role: PI, design and implement study protocols.

### **Awarded**

- (1) **Wang, Y., Ph.D. (PI)** Layman Seed Award, UNL, **\$10,000**, 05/01/18-04/30/19  
Project title: **“Identifying Neural and Behavioral Characteristics of Reading in Children with Hearing Loss”**.  
My Role: Principal Investigator (PI), design and implement study protocols.



**Completed**

- (1) Charles Nelson, Ph.D. (PI) and Nadine Gaab, Ph.D. (Co-PI), Bill & Melinda Gates foundation, **\$1,267,354**, 05/01/16-03/31/17  
Project title: **“Brain imaging as measure of future cognitive outcomes in children”**.  
The goal of this project was to demonstrate that the brain development of infants in developing country like Bangladesh can be measured using brain imaging techniques including structure and functional magnetic resonance imaging (fMRI) and diffusion weighted imaging (DWI), which can be related to future cognitive outcomes.  
My Role: I am the research consultant on imaging data analysis. I am in charge of analyzing MRI structural, functional, and DTI data from Bangladesh MRI scans and providing statistical analyses for MRI data in relation to variable of interest.
- (2) Nadine Gaab, Ph.D. (PI), 1R01 HD065762-03, **\$1,898,740**, 03/15/11-03/31/16  
Project title: **“Neural Pre-markers of Dyslexia in Children Prior to Reading Onset: A Longitudinal fMRI Study”**.  
The major goal of this project was to comprehensively characterize brain function and morphology in children with and without a family history of developmental dyslexia prior to the onset of reading and longitudinally follow these children’s brain development.  
My Role: I am postdoc fellow and in charge of analyzing functional, and DTI data.
- (3) Ellen Grant, Ph.D. (PI) and Nadine Gaab, Ph.D. (Co-PI), Abbott Fund, **\$1,811,464**, 09/01/13-08/31/16  
Project title: **“Developing Advanced MRI Methods for Detecting the Impact of Nutrients on Infant Brain Development”**.  
The goal of the research was to demonstrate the usefulness of MRI in identifying the effects of diet on brain development, particularly the differences between breast fed and formula fed infants.  
My Role: I am postdoc fellow and in charge of analyzing functional, and DTI data.
- (4) Scott K. Holland, Ph.D. (PI), 1R01 HD038578-09/10/10S1, **\$534,823**, 07/01/09-06/30/12  
Project title: **“FMRI of normal language development in children”**.  
The goal of the research was to demonstrate the brain development during language development in a large cohort (>300) using advanced neuroimaging techniques.  
My Role: I am doctoral student and in charge of neuroimaging data collection and analysis.

**Student Mentoring****Post-doc Fellows and Graduate Students**

- (1) Avantika Mathur, Ph.D., Neuroscience, National Brain Research Center, India, Post-doc Fellow, Mar.2018 – Present, Primary mentor: Dr. Yingying Wang.
- (2) Fatima Sibaii, Biomedical Engineering, University of Dammam, Saudi Arabia, Ph.D. student, Aug.2017 - Present, Primary mentor: Dr. Yingying Wang.
- (3) Ying Chen, Ph.D., Industrial Engineering, University of Texas at Arlington, United States, Post-doc Fellow, Sep. 2017 – Dec. 2017, Primary mentor: Dr. Yingying Wang.
- (4) Vanessa Whattam, Speech-Language Pathology, Department of Special Education and Communication Disorders, University of Nebraska-Lincoln, Dec.2017 – May.2019, “Study the reading brain”, Primary mentor: Dr. Yingying Wang.
- (5) Mohsen Hozan, Biomedical Engineering, Biological Systems Engineering, Ph.D., Jun.2017 – Aug.2017, “Neuroimaging techniques”, Independent study mentor: Dr. Yingying Wang.
- (6) Poupack Bagheri, Electric Engineering, Computer and Electric Engineering, Master, Jan.2019 – May.2019, “Neuroimaging methods and their applications”, Independent study mentor: Dr. Yingying Wang.

**Academic Committee Member**

- (1) Jacob L. Greenwood, Agricultural & Biological Systems Engineering, Biological Systems Engineering, Ph.D., "Multimodal assessment of somatosensory stimulation in acute cerebrovascular infarction", Primary mentor: Dr. Steven M. Barlow.
- (2) Alajandra Marquez, Speech-Language Pathology, Department of Special Education and Communication Disorders, University of Nebraska-Lincoln, April 2018, Mid-review for thesis "Non-nutritive Suck Pattern Stability in Extremely Premature Infants as a Function of Pulmonary Status", Primary mentor: Dr. Steven M. Barlow.
- (3) Michaela K. Sullivan, Speech-Language Pathology, Department of Special Education and Communication Disorders, University of Nebraska-Lincoln, April 2018, Mid-review for thesis "Oral angle ramp-and-hold isomeric force dynamics in young neurotypical adults, Primary mentor: Dr. Steven M. Barlow.
- (4) Lauren E. Wondra, Biological Engineering, University of Nebraska-Lincoln, Nov.2017, Master of Science, M.S., Dissertation title: "Cerebral blood flow velocity hemodynamic values in critically ill infants under one year of age", Primary mentor: Dr. Gregory R. Bashford.
- (5) Hyuntaek Oh, Biological Engineering, University of Nebraska-Lincoln, Sep.2016, Doctor of Philosophy, Ph.D., Dissertation title: "Brain encoding of salutatory velocity-scaled somatosensory array in glabrous hand among neurotypical adults", Primary mentor: Dr. Steven Barlow.
- (6) Rebecca Custead, Human Sciences, University of Nebraska-Lincoln, Jul.2016, Doctor of Philosophy, Ph.D., Dissertation title: "Encoding of salutatory tactile velocity in the adult orofacial somatosensory system", Primary mentor: Dr. Steven Barlow.

#### **Undergraduate Creative Arts and Research Experience (UCARE)**

- (1) Emily Grybas, Department of Special Education and Communication Disorders, University of Nebraska-Lincoln, 2018-2019, *Study the reading brain*.
- (2) Linneaa Nguyen, Department of Biological Systems Engineering, University of Nebraska-Lincoln, 2018-2019, *Study the reading brain*.
- (3) Thy Thy Trat Thai, Department of Biological Systems Engineering, University of Nebraska-Lincoln, 2018-2019, *Study the reading brain*.
- (4) Nicole Walters, Department of Biology, University of Nebraska-Lincoln, 2017-2018, *Brain Connectivity Changes in Children with and without a Familial Risk for Dyslexia During Reading Development*.
- (5) Laura Munn, Department of Special Education and Communication Disorders, University of Nebraska-Lincoln, 2016-2018, *Brain Connectivity Changes in Children with and without a Familial Risk for Dyslexia During Reading Development, and Executive function in children at-risk for reading impairment*.
- (6) Ellie Watkins, Department of Special Education and Communication Disorders, University of Nebraska-Lincoln, 2016-2018, *Brain Connectivity Changes in Children with and without a Familial Risk for Dyslexia During Reading Development, and Executive function in children at-risk for reading impairment*.
- (7) Katie Monson, Department of Special Education and Communication Disorders, University of Nebraska-Lincoln, 2016-2017, *Executive function in children at-risk for reading impairment*.

#### **Undergraduate Volunteers and Student Workers**

- (1) Grace Oh, Department of Biology, University of Nebraska-Lincoln, May.2018-Present, *Study the reading brain*. Student volunteer.
- (2) Molly Thornbrugh, Department of Special Education and Communication Disorders, University of Nebraska-Lincoln, Aug.2018-Nov.2018, *Study the reading brain*. Student volunteer.

- (3) Cristal Franco-Granados, Department of Biology, University of Nebraska-Lincoln, May.2018-Aug.2018, *Study the reading brain*. Student worker.
- (4) Michelle Rohman, Department of Biology, University of Nebraska-Lincoln, May.2018-Aug.2018, *Study the reading brain*. Student worker.
- (5) Joelly Anderson, Department of Special Education and Communication Disorders,, University of Nebraska-Lincoln, May.2018-Aug.2018, *Study the reading brain*. Student worker.
- (6) Nicole Walters, Department of Biology, University of Nebraska-Lincoln, 2016-2017, *Neuroimaging techniques*. Student volunteer.
- (7) Sarah Hughes Berheim, Department of Psychology, University of Nebraska-Lincoln, 2017-2018, *Neuroimaging techniques*. Student volunteer.

### **Professional Memberships**

- Organization for Human Brain Mapping 2007 – Present
- IEEE Women in Engineering Membership 2010 – Present
- IEEE Engineering in Medicine and Biology Society Membership 2010 – Present
- Cognitive Neuroscience Society 2014 – Present
- American Association for the Advancement of Science 2014 – Present
- Society of Neuroscience 2015 – Present

### **Professional and Discipline Related Services**

- Human Brain Mapping Conference Abstract Reviewer 2009 – Present
- Psychology & Neuroscience Reviewer 2015 – Present
- Neuropsychologia Reviewer 2016 – Present
- Brain and Behavior Reviewer 2016 – Present
- Journal of Experimental Child Psychology Reviewer 2016 – Present
- Human Brain Mapping Reviewer 2016 – Present
- IEEE Access Reviewer 2017 – Present
- The Journal of Pediatrics Reviewer 2017 – Present
- Language, Cognition and Neuroscience Reviewer 2017 – Present
- Brain Structure and Function Reviewer 2017 – Present
- Child Neuropsychology Reviewer 2017 – Present
- Child Neurology Open Reviewer 2017 – Present
- Developmental Science Reviewer 2017 – Present
- Brain Imaging and Behavior Reviewer 2018 – Present
- Current Eye Research Reviewer 2018 – Present
- Dyslexia Reviewer 2018 – Present
- Neuroimaging Clinical Reviewer 2018 – Present
- Brain Connectivity Reviewer 2018 – Present
- Cortex Reviewer 2018 – Present
- Network: Computation in Neural Systems Reviewer 2018 – Present
- Journal of Medical Imaging and Health Informatics 2018 – Present

### **Extracurricular University and Community Services**

- Volunteer at Ronald McDonald House (Cincinnati, OH) 2006 – 2013
- Health Sciences Graduate Association Representative 2010 – 2011
- Health Sciences Graduate Association Webmaster 2011 – 2012
- Department Research Committee 2015 – Present
- Judged graduate posters at the 2016 UNL Biomedical Graduate Posters 4/8/2016
- Reviewed posters at the UNL Graduate Poster Session 4/5/2017

- Judged undergraduate posters at the UNL Spring Research Fair 4/4/2017
- CB3 Search Committee 2017
- Biomedical Engineering (BME) Ph.D. Graduate Committee 2017 – Present
- Reviewed posters at the UNL Graduate Poster Session 4/10/2018
- Judged undergraduate posters at the UNL Spring Research Fair 4/11/2018
- Led four tour groups visit Center for Brain, Biology and Behavior Jul. – Dec. 2018
- Graduate Governors committee member Aug. 2018 – Present
- Educational Neuroscience Certification Committee member Dec. 2018 – Present

**Languages**

- Chinese: native proficiency.
- English: full professional proficiency.