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## **Xin Di (邸新), PhD**

Department of Biomedical Engineering, New Jersey Institute of Technology  
University Heights, Newark, NJ, 07102, USA

Tel: 1-201-628-5188

E-mail: [synge.x.d@gmail.com](mailto:synge.x.d@gmail.com)

Website: <http://me.dixin.info/>

### **Academic appointment**

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|------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|
| New Jersey Institute of Technology<br>Research Assistant Professor<br>Department of Biomedical Engineering<br>Supervisor: Dr. Bharat B. Biswal | Newark, NJ, USA<br>Sept. 2012 - present    |
| University of Medicine and Dentistry of New Jersey<br>Postdoctoral Researcher<br>Department of Radiology<br>Supervisor: Dr. Bharat B. Biswal   | Newark, NJ, USA<br>Jan. 2011 to Sept. 2012 |

### **Education**

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|--------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|
| Sun Yat-Sen University<br>Ph.D. in Psychology<br>Supervisor: Dr. Hengyi Rao                                              | Guangzhou, China<br>Sept. 2007 - Jun. 2010 |
| Institute of Biophysics, Chinese Academy of Sciences<br>Visiting student<br>State Key Lab of Brain and Cognitive Science | Beijing, China<br>Feb. 2009 to May 2010    |
| Sun Yat-Sen University<br>M.Sc. in Psychology<br>Supervisor: Dr. Hengyi Rao                                              | Guangzhou, China<br>Sept. 2004 - Jun. 2006 |
| Civil Aviation University of China<br>B.Eng. in Electronic Engineering                                                   | Tianjin, China<br>Sept. 2000 - Jun. 2004   |

### **Research Funding**

NJDOH – NJ Autism Center of Excellence (CAUT16APL019), 2016 - 2018  
Multimodal neuroimaging study of sex differences in children with autism spectrum disorder  
Role: PI  
Total cost: \$400,000

### **Awards**

2017, Publons Top Reviewers for Neuroscience (Top 1% of reviewers).  
2016, Publons Sentinels of Science Awards (2<sup>nd</sup> in neuroscience field).  
2008, travel stipend, ISMRM annual meeting, Toronto.  
2007, travel stipend, ISMRM annual meeting, Berlin.

### Editorial board

Review editor: Frontiers Brain Imaging Methods section, 2014 – present.

Review editor: Frontiers in Human Neuroscience, 2015 – present.

### Ad hoc journal reviewer

Verified peer review records from Publons: <https://publons.com/author/18286/xin-di>

|                                                      |                              |
|------------------------------------------------------|------------------------------|
| Cerebral Cortex                                      | Neurobiology of Aging        |
| PLoS Computational Biology                           | Brain Connectivity           |
| Neuroimage                                           | GigaScience                  |
| Human Brain Mapping                                  | Brain Structure and Function |
| Scientific Reports                                   | Journal of Neurophysiology   |
| Neuroscience Bulletin                                | Magnetic Resonance Imaging   |
| NeuroImage: Clinical                                 | Neuroinformatics             |
| PLoS One                                             | Neural Plasticity            |
| BioMed Research International                        | Neuroscience Letters         |
| Frontiers in Human Neuroscience                      | Brain Imaging and Behavior   |
| Frontiers in Behavioral Neuroscience                 | Oncotarget                   |
| Frontiers in Brain Imaging Methods                   | Engineering                  |
| Frontiers in Computational Neuroscience              |                              |
| IEEE Journal of Selected Topics in Signal Processing |                              |
| Medicine & Science in Sports & Exercise              |                              |
| Computer Methods and Programs in Biomedicine         |                              |

### Ad hoc grant reviewer

Ontario Mental Health Foundation (OMHF) (2013)

### Conference abstract reviewer

Annual Meeting of the Organization for Human Brain Mapping (2013, 2014, & 2015)

### Working papers

1. **Di X**, Biswal BB (2016). Sex-dependent and sex-independent brain resting-state functional connectivity in children with autism spectrum disorder. bioRxiv doi: <http://dx.doi.org/10.1101/038026>

### Peer-reviewed publications (Google Scholar h-index: 18)

Google Scholar Profile: <https://scholar.google.com/citations?user=wDjD46gAAAAJ&hl>

38. **Di X**, Biswal BB (accepted). Toward Task Connectomics: Examining Whole-Brain Task Modulated Connectivity in Different Task Domains. Cereb Cortex.
37. Fu Z, Tu Y, **Di X**, Biswal BB, Calhoun VD, Zhang Z (2017). Associations between Functional Connectivity Dynamics and BOLD Dynamics are Heterogeneous across Brain Networks. Front. Hum. Neurosci. doi: 10.3389/fnhum.2017.00593
36. **Di X**, Azeez A, Li X, Haque E, Biswal BB (2018). Disrupted focal white matter integrity in autism spectrum disorder: a voxel-based meta-analysis of diffusion tensor imaging studies. Prog Neuropsychopharmacol Biol Psychiatry 82:242-248.

35. Fu Z, Tu Y, **Di X**, Du Y, Pearlson GD, Turner JA, Biswal BB, Zhang Z, Calhoun VD (2017). Characterizing Dynamic Amplitude of Low-Frequency Fluctuation and Its Relationship with Dynamic Functional Connectivity: An Application to Schizophrenia. *Neuroimage* doi:10.1016/j.neuroimage.2017.09.035.
34. **Di X**, Gohel S, Thielcke A, Wehrl HF, Biswal BB, and Alzheimer's Disease Neuroimaging Initiative (2017). Do all roads lead to Rome? A comparison of brain networks derived from inter-subject volumetric and metabolic covariance and moment-to-moment hemodynamic correlations in old individuals. *Brain Struct Funct* 222(8):3833–3845.
33. **Di X**, Biswal BB (2017). Psychophysiological Interactions in a Visual Checkerboard Task: Reproducibility, Reliability, and the Effects of Deconvolution. *Front Neurosci* 11:573.
32. Jin H, Wang P, Fang Z, **Di X**, Ye Z, Xu G, Lin H, Cheng Y, Li Y, Xu Y, Rao H (2017). Effects of badminton expertise on representational momentum: A combination of cross-sectional and longitudinal studies. *Front. Psychol.* doi: 10.3389/fpsyg.2017.01526
31. **Di X**, Reynolds RC, Biswal BB (2017). Imperfect (de)convolution may introduce spurious psychophysiological interactions and how to avoid it. *Hum Brain Mapp* 38(4), 1723–1740.
30. **Di X**, Huang J, Biswal BB (2017). Task-modulated brain connectivity of the amygdala: a meta-analysis of psychophysiological interactions. *Brain Struct Funct* 222(1):619-634.
29. Xu H, Wang P, Ye Z, **Di X**, Xu G, Mo L, Lin H, Rao H and Jin H (2016) The Role of Medial Frontal Cortex in Action Anticipation in Professional Badminton Players. *Front. Psychol.* 7:1817.
28. Ray S, **Di X**, Biswal BB (2016). Effective Connectivity Within the Mesocorticolimbic System During Resting-State in Cocaine Users. *Front. Hum. Neurosci.* 10:563.
27. Yuan R, **Di X**, Taylor PA, Gohel S, Tsai YH, Biswal BB (2016). Functional topography of the thalamocortical system in human. *Brain Struct Funct* 221(4):1971-1984.
26. Zhang X, **Di X**, Lei H, Yang J, Xiao J, Wang X, Yao S, Rao H (2016): Imbalanced Spontaneous Brain Activity in Orbitofrontal-Insular Circuits in Individuals with Cognitive Vulnerability to Depression. *J Affect Disord* 198:56-63.
25. **Di X**, Biswal BB (2016). Similarly expanded bilateral temporal lobe volumes in female and male children with autism spectrum disorder. *Biological Psychiatry: Cognitive Neuroscience and Neuroimaging* 1(2):178-185.
24. Hu C, **Di X**, Eickhoff SB, Zhang M, Peng K, Guo H, Sui J (2016). Distinct and common aspects of physical and psychological self-representation in the brain: A meta-analysis of self-bias in facial and self-referential judgements. *Neuroscience & Biobehavioral Reviews* 61:197–207.
23. **Di X**, Biswal BB (2015). Characterizations of resting-state modulatory interactions in human brain. *J Neurophysiol* 114(5), 2785-96.
22. **Di X**, Fu Z, Chan SC, Hung YS, Biswal BB, Zhang Z (2015). Task-related Functional Connectivity Dynamics in a Block-designed Visual Experiment. *Front. Hum. Neurosci* 9:543.

21. **Di X**, Biswal BB (2015). Dynamic Brain Functional Connectivity Modulated by Resting-State Networks. *Brain Struct Funct* 220(1):37-46.
20. **Di X**, Kim E, Chen P, Biswal BB (2014). Lateralized Resting-state Functional Connectivity in the Task-positive and Task-negative Networks. *Brain Connect* 4(9): 641-648.
19. Lei H, Zhang X, **Di X**, Rao H, Ming Q, Zhang J, Guo X, Jiang Y, Gao Y, Yi J, Zhu X, Yao S (2014). A Functional Polymorphism of the MAOA Gene Modulates Spontaneous Brain Activity in Pons. *Biomed Res Int* 2014:243280.
18. Fu Z, Chan SC, **Di X**, Biswal B, Zhang Z (2014). Adaptive Covariance Estimation of Non-stationary Processes and its Application to Infer Dynamic Connectivity from fMRI. *IEEE Trans Biomed Circuits Syst* 8(2):228–39.
17. **Di X**, Biswal BB (2014). Modulatory Interactions between the Default Mode Network and Task Positive Networks in Resting-State. *PeerJ* 2:e367.
16. **Di X**, Biswal BB (2014). Identifying the Default Mode Network Structure Using Dynamic Causal Modeling on Resting-state Functional Magnetic Resonance Imaging. *Neuroimage* 86:53–9.
15. **Di X**, Rypma B, Biswal BB (2014). Correspondence of Executive Function Related Functional and Anatomical Alterations in Aging Brain. *Prog Neuropsychopharmacol Biol Psychiatry* 48(3):41–50.
14. Yuan R, **Di X**, Kim EH, Barik S, Rypma B, Biswal BB (2013). Regional Homogeneity of Resting-state fMRI Contributes to Both Neurovascular and Task Activation Variations. *Magn Reson Imaging* 31(9):1492–1500.
13. **Di X**, Gohel S, Kim EH and Biswal BB (2013). Task vs. Rest - Different Network Configurations between the Coactivation and the Resting-State Brain Networks. *Front. Hum. Neurosci.* 7:493.
12. **Di X**, Biswal BB (2013). Modulatory interactions of resting-state brain functional connectivity. *PLoS One* 8(8): e71163.
11. **Di X**, Kim EH, Huang C, Tsai S, Lin C and Biswal BB (2013). The influence of the amplitude of low-frequency fluctuations on resting-state functional connectivity. *Front. Hum. Neurosci.* 7:118.
10. Huang J, Wang Y, Jin Z, **Di X**, Yang T, Gur RC, Gur RE, Shum DH, Cheung EF, Chan RC (2013). Happy facial expression processing with different social interaction cues: An fMRI study of individuals with schizotypal personality traits. *Prog Neuropsychopharmacol Biol Psychiatry* 44(1):108–17.
9. **Di X**, Kannurpatti SS, Rypma B, Biswal BB (2013). Calibrating BOLD fMRI activations with neuro-vascular and anatomical constraints. *Cereb Cortex* 23 (2):255-63.
8. **Di X**, Biswal BB, Alzheimer's Disease Neuroimaging Initiative (2012). Metabolic Brain Covariant Networks as Revealed by FDG-PET with reference to resting-state fMRI networks. *Brain Connect* 2(5):275-83.
7. **Di X**, Zhu S, Jin H, Wang P, Ye Z, Zhou K, Zhuo Y, Rao H (2012). Altered resting brain function and structure in professional badminton players. *Brain Connect* 2(4):225-33.
6. Taylor P, Gohel SR, **Di X**, Walter M, Biswal B (2012). Functional covariance networks: obtaining resting state networks from intersubject variability. *Brain Connect* 2(4):203-17.

5. Qian C, **Di X** (2011). Phase or amplitude? The relationship between ongoing and evoked neural activity. *J Neurosci* 31(29):10425-10426.
4. Chan RC, **Di X**, McAlonan GM, Gong QY (2011). Brain Anatomical Abnormalities in High-Risk Individuals, First-Episode, and Chronic Schizophrenia: An Activation Likelihood Estimation Meta-analysis of Illness Progression. *Schizophr Bull* 37(1):177-88.
3. **Di X**, Chan RC, Gong QY (2009). White matter reduction in patients with schizophrenia as revealed by voxel-based morphometry: an activation likelihood estimation meta-analysis. *Prog Neuropsychopharmacol Biol Psychiatry* 33(8):1390-1394.
2. Chan RC, Huang J, **Di X** (2009). Dexterous movement complexity and cerebellar activation: a meta-analysis. *Brain Res Rev* 59(2):316-323.
1. Rao H, **Di X**, Chan RC, Ding Y, Ye B, Gao D (2008). A regulation role of the prefrontal cortex in the fist-edge-palm task: evidence from functional connectivity analysis. *Neuroimage* 41(4):1345-1351.

### Publications in Chinese

2. Hu C, **Di X**, Li J; Sui J, Peng K (2015). Meta-analysis of Neuroimaging Studies. *Advances in Psychological Science* 23(7): 1118-1129.
1. **Di X**, Rao H (2007). Progress in Functional Connectivity Analysis. *Progress in Biochemistry and Biophysics* 34(1), 5-12.

### Educational courses in scientific meetings

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| Preconference workshop for 4 <sup>th</sup> biennial conference on resting-state and brain connectivity<br>Physiophysiological interaction (PPI), Granger causality analysis, and dynamic causal modeling (DCM) for resting-state fMRI | Boston, MA, USA<br>September, 2014 |
| OHBM educational course: resting-state brain networks<br>Case Study: Single Subject and Group Analysis                                                                                                                                | Seattle, WA, USA<br>June, 2013     |
| OHBM educational course: resting-state brain networks<br>Case Study: Single Subject and Group Analysis                                                                                                                                | Beijing, China<br>June, 2012       |

### Invited talks

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| Department of Biomedical Engineering, Shenzhen University<br>Task modulated brain connectivity using fMRI: method considerations and new findings                                      | Shenzhen, China<br>January, 2018   |
| Department of Biomedical Engineering, University of Electronic Science and Technology of China<br>Task modulated brain connectivity using fMRI: method considerations and new findings | Chengdu, China<br>January, 2018    |
| 4th biennial conference on resting-state and brain connectivity<br>Modulatory interactions of resting-state functional connectivity                                                    | Boston, MA, USA<br>September, 2014 |
| Institute of Psychology, Chinese Academy of Sciences                                                                                                                                   | Beijing, China                     |

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| Neuropsychology and Applied Cognitive Neuroscience Lab<br>The infrastructure of brain functions - from structure to physiology               | June, 2012                     |
| Center for Brain Health, UT Dallas<br>NeuroPsychometric Research Lab<br>The infrastructure of brain functions - from structure to physiology | Dallas, TX, USA<br>April, 2012 |

### Conference Presentations

20. **Di X**, Biswal BB. Assessing task related brain connectivity in a fast event-related designed stop signal task using psychophysiological interaction and beta series correlation. Poster presentation at the 4<sup>th</sup> New York Metropolitan Imaging Symposium, New York, USA (2017).
19. Azeez AK, **Di X**, Biswal BB. Biological Sex Modulations on Cortical Thickness in Autism Spectrum Disorder: An analysis of Autism Brain Imaging Data Exchange II. Poster presentation at the International Meeting for Autism Research (IMFAR), San Francisco, USA (2017).
18. **Di X**, Biswal BB. Task related brain networks derived from trial-by-trial variability of a slow event-related designed Flanker task. Poster presentation at the Fourth Biennial Conference on Resting State / Brain Connectivity, Boston, USA (2014).
17. **Di X**, Yuan R, Biswal BB. Modulatory interactions between the thalamus and visual cortex in resting-state are modulated by eye open/closed conditions. Poster presentation at the Fourth Biennial Conference on Resting State / Brain Connectivity, Boston, USA (2014).
16. Fu Z, **Di X**, Chan SC, Hung YS, Biswal BB, Zhang Z. Characterizing temporal variations of functional connectivity in resting-state. Poster presentation for Joint Annual Meeting ISMRM-ESMRMB, Milano, Italy (2014).
15. Fu Z, **Di X**, Chan SC, Hung YS, Biswal BB, Zhang Z (2013). Time-varying correlation coefficients estimation and its application to dynamic connectivity analysis of fMRI. Conf Proc IEEE Eng Med Biol Soc. 2013:2944-2947.
14. Zhang Z, Fu Z, Chan SC, Hung YS, Motta G, **Di X**, Biswal BB. Conference Paper: Adaptive window selection in estimating dynamic functional connectivity of resting-state fMRI. 9th International Conference on Information, Communications and Signal Processing (ICICS2013).
13. **Di X**, Biswal BB. Identifying the Default Mode Network Structure Using Dynamic Causal Modeling on Resting-state fMRI. Poster presentation at 19th Annual Meeting of the Organization for Human Brain Mapping, Seattle, USA (2013).
12. **Di X**, Biswal BB. The nonlinear intrinsic brain networks - modulations on resting-state functional connectivity by other regions. Poster presentation at 19th Annual Meeting of the Organization for Human Brain Mapping, Seattle, USA (2013).
11. **Di X**, Fu Z, Zhang Z, Chan SC, Biswal BB. Transient connectivity changes during a visual task - time-varying correlation estimation analysis. Poster presentation at 19th Annual Meeting of the Organization for Human Brain Mapping, Seattle, USA (2013).
10. Yuan R, **Di X**, Kim EH, Barik S, Rypma B, Biswal BB. Regional Homogeneity of Resting-state fMRI Contributes to Both Neurovascular and Task Activation Variations. Poster presentation at 19th Annual Meeting of the Organization for Human Brain Mapping, Seattle, USA (2013).

9. **Di X**, Kannurpatti SS, Rypma B, Biswal BB. Calibrating BOLD fMRI activations with neuro-vascular and anatomical constraints. Poster presentation at 18th Annual Meeting of the Organization for Human Brain Mapping, Beijing, China (2012).
8. Gohel S, **Di X**, Biswal BB. Trajectories of functional brain networks connectivity over life-span brain development. Poster presentation at 18th Annual Meeting of the Organization for Human Brain Mapping, Beijing, China (2012).
7. Taylor P, Gohel SR, **Di X**, Walter M, Biswal BB. Functional covariance networks: obtaining resting statenetworks from intersubject variability. Poster presentation at 18th Annual Meeting of the Organization for Human Brain Mapping, Beijing, China (2012).
6. Jin H, Wang P, **Di X**, Ye Z, Xu G, Mo L, Lin C, Rao H. Activation of Medial Prefrontal Cortex during Sport-related Anticipation: An fMRI Study. Poster presentation at 17th Annual Meeting of the Organization for Human Brain Mapping, Québec, Canada (2011).
5. Zhu S, **Di X**, Jin H, Wang P, Mo L, Zhou K, Zhuo Y, Rao H. Training shapes Cerebellum and parieto-frontal network in professional badminton players. Poster presentation at Annual Meeting of ISMRM, Montreal, Canada (2011).
4. **Di X**, Zhou K, Rao H. Individual differences of representational momentum were associated with inhibition process rather than motion perception. Oral presentation at the 4th Symposium on brain and cognitive science, Chengdu, China (2009). (In Chinese)
3. **Di X**, Ding Y, Qu Z, Ye B, Gao D, Rao H. The Role of Middle Temporal and Medial Prefrontal Cortex in Representational Momentum: a fMRI Study. Poster presentation at Annual Meeting of ISMRM, Toronto, Canada (2008).
2. **Di X**, Chan RC, Ding Y, Ye B, Qu Z, Gao D, Rao H. The Role of Prefrontal Lobe in FEP: Evidence from PPI Analysis. Oral presentation at Joint Annual Meeting ISMRM-ESMRMB, Berlin, Germany (2007).
1. **Di X**, Rao H. The higher and lower frequency asymmetry in pitch representational momentum. Oral presentation at the 2nd Symposium on brain and cognitive science, Guilin, China (2006). (In Chinese)