

CURRICULUM VITAE

Date of Revision: 07/20/2017

Name: Sheng Zhang, Ph.D.

School: Yale University School of Medicine

Education:

B.S. University of Science & Technology of China 2001

Ph.D. University of Science & Technology of China 2007

Career/Academic Appointments:

2007-12 Postdoctoral Associate, Dept. of Psychiatry, Yale University School of Medicine, New Haven, CT

2012-17 Associate Research Scientist, Dept. of Psychiatry, Yale University School of Medicine, New Haven, CT

2017- Assistant Professor, Dept. of Psychiatry, Yale University School of Medicine, New Haven, CT

Professional Honors & Recognition:

International/National/Regional

2015: NIDA Mentored Quantitative Research Career Development Award (K25)

Grant/Clinical Trials History:

Current Grants

Agency: NIH/NIDA

I.D.# K25 DA040032

Title: "Thalamic cortical dysfunction and predictors of relapse in cocaine dependence"

P.I.: Sheng Zhang.

Percent effort: 100%

Direct costs per year: \$154,593

Total costs for project period: \$834,352

Project period: 08/15/2015 – 7/31/2020

Peer-Reviewed Presentations & Symposia Given at Meetings Not Affiliated With Yale:

International/National

2016: Annual Meeting, Society for Neuroscience, San Diego, CA, "Whole brain dynamic resting state functional connectivity of the basal nucleus of Meynert and ventral striatum."

2015: Annual Meeting, Society for Neuroscience, Chicago, IL, "Ventral striatum dysfunction in cocaine dependence – a framework for resting state functional connectivity mapping analysis."

- 2014: Fourth Biennial Conference on Resting State/Brain Connectivity, Boston, MA, "Thalamic dysfunction in cocaine dependence – a framework for functional connectivity analysis."
- 2012: Annual Meeting, Society for Neuroscience, New Orleans, LA, "Ventromedial prefrontal cortex and the regulation of physiological arousal in a cognitive task."
- 2011: Annual Meeting, Society for Neuroscience, Washington, DC, "Functional connectivity mapping of the human precuneus by resting state fMRI."
- 2010: Annual Meeting, Society for Neuroscience, San Diego, CA, "Functional networks for cognitive control in a stop signal task: independent component analysis."
- 2009: Annual Meeting, Society for Neuroscience, Chicago, IL, "Task-residual low frequency activity in "default" brain regions: In search of a neural correlate of task engagement."
- 2008: Annual Meeting, Society for Neuroscience, Washington, DC, "Clustering of functionally connected areas from task-residual BOLD activities."

Professional Service

Journal Service:

Reviewer

2012-present Reviewer for *NeuroImage*, *Human Brain Mapping*, *Addiction Biology*, *Brain Topography*, *Brain and Cognition*, *Frontiers*, *Experimental Brain Research*, *Network-Computation in Neural Systems*, *Brain Connectivity*;

Bibliography:

Peer-Reviewed Original Research

1. Li CS, Yan P, Chao HH-A, Sinha R, Paliwal P, Constable RT, **Zhang S**, Lee TW (2008) Error-specific medial cortical and subcortical activity during the stop signal task - a functional magnetic resonance imaging study. *Neuroscience* 155:1142-51.
2. Li CS, **Zhang S**, Duann JR, Yan P, Sinha R, Mazure CM (2009) Gender Differences in Cognitive Control: an Extended Investigation of the Stop Signal Task. *Brain Imaging and Behavior* 3:262-76.
3. Li CS, Luo X, Sinha R, Rounsaville BJ, Carroll KM, Malison RT, Ding YS, **Zhang S**, Ide JS (2010) Increased error-related thalamic activity during early compared to late cocaine abstinence. *Drug and Alcohol Dependence* 109:181-9.
4. **Zhang S**, Li CS (2010) A neural measure of behavioral engagement: low frequency blood oxygenation level dependent activity in the precuneus. *NeuroImage* 49: 1911-18.
5. Bednarski SR, **Zhang S**, Hong KI, Sinha R, Rounsaville BJ, Li CS (2011) Deficits in default mode network activity preceding error in cocaine dependent individuals. *Drug and Alcohol Dependence* 119(3):e51-7.
6. Hendrick OM, Luo X, **Zhang S**, Li CS (2011) Saliency Processing and Obesity: A Preliminary Imaging Study of the Stop Signal Task. *Obesity* 20(9):1796-802.

7. **Zhang S**, Li CS (2012) Functional networks for cognitive control in a stop signal task: independent component analysis. *Human Brain Mapping* 33(1):89-104.
8. **Zhang S**, Li CS (2012) Resting state functional connectivity of the medial superior frontal Cortex. *Cerebral Cortex* 22(1):99-111.
9. **Zhang S**, Li CS (2012) Functional connectivity mapping of the human precuneus by resting state fMRI. *NeuroImage* 59 (4): 3548 - 62.
10. Bednarski SR, Erdman E, Luo X, **Zhang S**, Hu S, Li CS (2012) Neural processes of an indirect analogue of risk taking in young non-dependent adult alcohol drinkers: an fMRI study of the stop signal task. *Alcoholism: Clinical and Experimental Research* 36(5): 768-79.
11. **Zhang S**, Li CS (2012) Task-related, low frequency task-residual, and resting state activity in the default mode network brain regions. *Frontiers in Psychology* 3:172.
12. **Zhang S**, Hu S, Chao HH, Luo X, Farr OM, Li CS (2012) Cerebral correlates of skin conductance responses in a cognitive task. *NeuroImage* 62 (3): 1489-98.
13. Chao HH, Uchio E, **Zhang S**, Hu S, Bednarski SR, Luo X, Rose M, Concato J, Li CS (2012) Effects of androgen deprivation on brain function in prostate cancer patients inverted question mark a prospective observational cohort analysis. *BMC Cancer* 12:371.
14. Farr OM, Hu S, **Zhang S**, Li CS (2012) Decreased saliency processing as a neural measure of Barratt impulsivity in healthy adults. *NeuroImage* 63, 1070-77.
15. Luo X, **Zhang S**, Hu S, Bednarski SR, Erdman E, Farr OM, Hong KI, Sinha R, Mazure CM, Li CS (2013) Error processing and gender-shared and -specific neural predictors of relapse in cocaine dependence. *Brain* 136(Pt 4): 1231-44.
16. Xu J, **Zhang S**, Calhoun VD, Monterosso J, Li CS, Worhunsky PD, Stevens M, Pearlson GD, Potenza MN (2013) Task-related concurrent but opposite modulations of overlapping functional networks as revealed by spatial ICA, *NeuroImage* 79:62-71
17. Matuskey D, Luo X, **Zhang S**, Morgan PT, Abdelghany O, Malison RT, Li CS (2013) Methylphenidate remediates error-preceding activation of the default mode brain regions in cocaine-addicted individuals, *Psychiatry Research* 214(2):116-24
18. Chao HH, Hu S, Ide JS, Uchio E, **Zhang S**, Rose M, Concato J, Li CS (2013) Effects of androgen deprivation on cerebral morphometry in prostate cancer patients--an exploratory study. *PloS one* 8:e72032.
19. Ide JS, **Zhang S**, Hu S, Sinha R, Mazure CM, Li CS, (2014) Cerebral gray matter volumes and low-frequency fluctuation of BOLD signals in cocaine dependence: duration of use and gender difference. *Drug and Alcohol Dependence* 134:51-62
20. **Zhang S**, Hu S, Bednarski SR, Erdman E, Li CS (2014) Error-related functional connectivity of the thalamus in cocaine dependent. *NeuroImage: Clinical* 4: 585-592
21. Ide JS, **Zhang S**, Li CS (2014) Bayesian network models in brain functional connectivity analysis. *International Journal of Approximate Reasoning* 56(1 Pt 1).
22. **Zhang S**, Li CS (2014) Functional clustering of the human inferior parietal lobule by whole brain connectivity mapping of resting state fMRI signals. *Brain connectivity* 4: 53-69.
23. Farr OM, Hu S, Matuskey D, **Zhang S**, Abdelghany O, Li CS (2014) The effects of methylphenidate on cerebral activations to salient stimuli in healthy adults. *Experimental and Clinical Psychopharmacology* 22(2):154-65.
24. Anticevic A, Hu S, **Zhang S**, Savic A, Billingslea E, Wasylink S, Repovs G, Cole MW, Bednarski S, Krystal JH, Bloch MH, Li CS, Pittenger C (2014) Global Resting-State Functional Magnetic Resonance Imaging Analysis Identifies Frontal Cortex, Striatal, and Cerebellar Dysconnectivity in Obsessive-Compulsive Disorder. *Biological psychiatry* 75(8): 595-605
25. Hu S, Chao HH, **Zhang S**, Ide JS, Li CS (2014) Changes in cerebral morphometry and amplitude of low-frequency fluctuations of BOLD signals during healthy aging: correlation with inhibitory control. *Brain Structural and Function* 219(3):983-94.

26. **Zhang S**, Hu S, Chao HH, Ide JS, Luo X, Farr OM, Li CS (2014) Ventromedial prefrontal cortex and the regulation of physiological arousal. *Social Cognitive and Affective Neuroscience* 9(7):900-8.
27. Farr OM, **Zhang S**, Hu S, Matuskey D, Abdelghany O, Malison RT, Li CS (2014) The effects of methylphenidate on resting-state striatal, thalamic and global functional connectivity in healthy adults. *The International Journal of Neuropsychopharmacology* 17(8):1177-91.
28. Li CS, Ide JS, **Zhang S**, Hu S, Chao HH, Zaborszky L (2014) Resting state functional connectivity of the basal nucleus of Meynert in humans: in comparison to the ventral striatum and the effects of age. *NeuroImage* 97:321-32.
29. Ide JS, **Zhang S**, Hu S, Matuskey D, Bednarski SR, Erdman E, Farr OM, Li CS (2014) Gray matter volume correlates of global positive alcohol expectancy in non-dependent adult drinkers. *Addiction Biology* 19(5):895-906.
30. Hu S, Ide JS, **Zhang S**, Sinha R, Li CS (2015) Conflict anticipation in alcohol dependence - A model-based fMRI study of stop signal task. *NeuroImage: Clinical* 8:39-50.
31. **Zhang S**, Hu S, Hu J, Wu PL, Chao HH, Li CS (2015): Barratt impulsivity and neural regulation of physiological arousal. *PLOS One* 10(6):e0129139
32. Manza P, **Zhang S**, Hu S, Chao HH, Leung HC, Li CS (2015) The effects of age on resting state functional connectivity of the basal ganglia from young to middle adulthood. *NeuroImage* 107:311-22.
33. Ide JS, Hu S, **Zhang S**, Yu AJ, Li CS (2015) Impaired Bayesian learning for cognitive control in cocaine dependence. *Drug and Alcohol Dependence* 151:220-7.
34. **Zhang S**, Tsai SJ, Hu S, Xu J, Chao HH, Calhoun VD, Li CS (2015) Independent component analysis of functional networks for response inhibition: inter-subject variation in stop signal reaction time. *Human Brain Mapping* 36(9):3289-302.
35. Hu S, Ide JS, **Zhang S**, Li CS (2015) Anticipating conflict: Neural correlates of a Bayesian belief and its motor consequence. *NeuroImage* 119:286-95.
36. Manza P, **Zhang S**, Li CS, Leung HC (2016) Resting-state functional connectivity of the striatum in early-stage Parkinson's disease: Cognitive decline and motor symptomatology. *Human Brain Mapping* 37(2):648-62.
37. Hu S, **Zhang S**, Chao HH, Krystal JH, Li CS (2016) Association of Drinking Problems and Duration of Alcohol Use to Inhibitory Control in Nondependent Young Adult Social Drinkers. *Alcoholism, clinical and experimental research* 40(2):319-28.
38. Manza P, Hu S, Ide JS, Farr OM, **Zhang S**, Leung HC, Li CS (2016) The effects of methylphenidate on cerebral responses to conflict anticipation and unsigned prediction error in a stop-signal task. *Journal of Psychopharmacology* 30(3):283-93.
39. **Zhang S**, Hu S, Chao HH, Li CS (2016) Resting-State Functional Connectivity of the Locus Coeruleus in Humans: In Comparison with the Ventral Tegmental Area/Substantia Nigra Pars Compacta and the Effects of Age. *Cerebral Cortex* 26:3413-3427 DOI: 10.1093/cercor/bhv172
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42. Hu J, Hu S, Maisano JR, Chao HH, **Zhang S**, Li CR (2016) Novelty Seeking, Harm Avoidance, and Cerebral Responses to Conflict Anticipation: An Exploratory Study. *Frontiers in human neuroscience* 10:546 doi:10.3389/fnhum.2016.0054

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46. Hu S, Ide JS, **Zhang S**, Li CR (2016) The Right Superior Frontal Gyrus and Individual Variation in Proactive Control of Impulsive Response. *The Journal of neuroscience* 36:12688-12696
47. Ide JS, Hu S, **Zhang S**, Mujica-Parodi LR, Li CS (2016) Power spectrum scale invariance as a neural marker of cocaine misuse and altered cognitive control. *NeuroImage Clinical* 11:349-356.
48. **Zhang S**, Hu S, Sinha R, Potenza MN, Malison RT, Li CS (2016) Cocaine dependence and thalamic functional connectivity: a multivariate pattern analysis. *NeuroImage Clinical* 12:348-358.
49. Peterson AC, **Zhang S**, Hu S, Chao HH, Li CR (2017) The Effects of Age, from Young to Middle Adulthood, and Gender on Resting State Functional Connectivity of the Dopaminergic Midbrain. *Frontiers in human neuroscience* 11:52.
50. **Zhang S**, Hu S, Fucito LM, Luo X, Mazure CM, Zaborszky L, Li CR (2017) Resting-State Functional Connectivity of the Basal Nucleus of Meynert in Cigarette Smokers: Dependence Level and Gender Differences. *Nicotine & tobacco research* 19:452-459 doi:10.1093/ntr/ntw209
51. Ide JS, Zhornitsky S, Hu S, **Zhang S**, Krystal JH, Li CR (2017) Sex differences in the interacting roles of impulsivity and positive alcohol expectancy in problem drinking: A structural brain imaging study. *NeuroImage Clinical* 14:750-759.
52. Johnston JA, Wang F, Liu J, Blond BN, Wallace A, Liu J, Spencer L, Cox Lippard ET, Purves KL, Landeros-Weisenberger A, Hermes E, Pittman B, **Zhang S**, King R, Martin A, Oquendo MA, Blumberg HP (2017) Multimodal Neuroimaging of Frontolimbic Structure and Function Associated With Suicide Attempts in Adolescents and Young Adults With Bipolar Disorder. *The American journal of psychiatry* 174-7: 667-675.

Scholarship In Press

53. **Zhang S**, Hu S, Chao HH, Li CR (In Press) Hemispheric lateralization of resting-state functional connectivity of the ventral striatum: an exploratory study. *Brain structure & function*. DOI:10.1007/s00429-016-1358-y