

Stanford



Hyesang Chang

Postdoctoral Scholar, Psychiatry

Bio

PROFESSIONAL EDUCATION

- Doctor of Philosophy, University of Chicago (2017)

Research & Scholarship

RESEARCH INTERESTS

- Achievement
- Brain and Learning Sciences
- Child Development
- Learning Differences
- Math Education

CURRENT RESEARCH AND SCHOLARLY INTERESTS

My research aims to understand neurocognitive processes that give rise to how individuals acquire foundational cognitive skills that are predictive of academic and professional success. My current research investigates neural representations and brain circuits that predict individual differences in learning in response to training, leveraging unique experimental paradigms, theoretically motivated interventions, and cognitive and systems neuroscience methods. Through my interdisciplinary research in cognitive and developmental psychology, neuroscience, and education, I am committed to advancing our understanding of cognitive and brain mechanisms of individual differences in learning and achievement across development, and to informing evidence-based approaches to support individuals to reach their highest potential.

Publications

PUBLICATIONS

- **Neural representational similarity between symbolic and non-symbolic quantities predicts arithmetic skills in childhood but not adolescence** *DEVELOPMENTAL SCIENCE*
Schwartz, F., Zhang, Y., Chang, H., Karraker, S., Kang, J., Menon, V.
2021
- **Emerging neurodevelopmental perspectives on mathematical learning.** *Developmental review : DR*
Menon, V., Chang, H.
2021; 60
- **Neurocognitive modeling of latent memory processes reveals reorganization of hippocampal-cortical circuits underlying learning and efficient strategies.** *Communications biology*
Supekar, K., Chang, H., Mistry, P. K., Iuculano, T., Menon, V.

2021; 4 (1): 405

- **Faster learners transfer their knowledge better: Behavioral, mnemonic, and neural mechanisms of individual differences in children's learning** *DEVELOPMENTAL COGNITIVE NEUROSCIENCE*
Chang, H., Rosenberg-Lee, M., Qin, S., Menon, V.
2019; 40: 1-14
- **Simple arithmetic: not so simple for highly math anxious individuals** *SOCIAL COGNITIVE AND AFFECTIVE NEUROSCIENCE*
Chang, H., Sprute, L., Maloney, E. A., Beilock, S. L., Berman, M. G.
2017; 12 (12): 1940-49
- **The math anxiety-math performance link and its relation to individual and environmental factors: a review of current behavioral and psychophysiological research** *CURRENT OPINION IN BEHAVIORAL SCIENCES*
Chang, H., Beilock, S. L.
2016; 10: 33-38
- **On the relationship between math anxiety and math achievement in early elementary school: The role of problem solving strategies** *JOURNAL OF EXPERIMENTAL CHILD PSYCHOLOGY*
Ramirez, G., Chang, H., Maloney, E. A., Levine, S. C., Beilock, S. L.
2016; 141: 83-100
- **The Odd-Even Effect in Sudoku Puzzles: Effects of Working Memory, Aging, and Experience** *AMERICAN JOURNAL OF PSYCHOLOGY*
Chang, H., Gibson, J. M.
2011; 124 (3): 313-24
- **Prefrontal and limbic dysregulation during emotional processing in bipolar disorder: a functional magnetic resonance imaging meta-analysis**
Brooks, J. O., Chang, H. S., Bearden, C. E., Glahn, D. C.
WILEY-BLACKWELL.2011: 32-33
- **Dysregulated Activation of Prefrontal and Limbic Regions in Emotional Processing in Bipolar Disorder: A Meta-Analysis**
Brooks, J. O., Chang, H., Bearden, C. E., Glahn, D. C.
ELSEVIER SCIENCE INC.2010: 135S
- **Metabolic Risks in Older Adults Receiving Second-Generation Antipsychotic Medication** *CURRENT PSYCHIATRY REPORTS*
Brooks, J. O., Chang, H., Krasnykh, O.
2009; 11 (1): 33-40