

Stanford



Kaustubh Supekar

Clinical Assistant Professor, Psychiatry and Behavioral Sciences

Bio

ACADEMIC APPOINTMENTS

- Clinical Assistant Professor, Psychiatry and Behavioral Sciences
- Member, Maternal & Child Health Research Institute (MCHRI)

PROFESSIONAL EDUCATION

- Ph.D., Stanford University School of Medicine
- Entrepreneurship, Stanford Graduate School of Business

Teaching

COURSES

2021-22

- Artificial Intelligence in Mental Health: PSYC 63Q (Spr)

Publications

PUBLICATIONS

- **Aberrant dynamics of cognitive control and motor circuits predict distinct restricted and repetitive behaviors in children with autism.** *Nature communications*
Supekar, K., Ryali, S., Mistry, P., Menon, V.
2021; 12 (1): 3537
- **Dysregulated Brain Dynamics in a Triple-Network Saliency Model of Schizophrenia and Its Relation to Psychosis.** *Biological psychiatry*
Supekar, K., Cai, W., Krishnadas, R., Palaniyappan, L., Menon, V.
2018
- **Deficits in mesolimbic reward pathway underlie social interaction impairments in children with autism.** *Brain : a journal of neurology*
Supekar, K., Kochalka, J., Schaer, M., Wakeman, H., Qin, S., Padmanabhan, A., Menon, V.
2018
- **Sex differences in structural organization of motor systems and their dissociable links with repetitive/restricted behaviors in children with autism** *MOLECULAR AUTISM*
Supekar, K., Menon, V.
2015; 6
- **Brain hyperconnectivity in children with autism and its links to social deficits.** *Cell reports*
Supekar, K., Uddin, L. Q., Khouzam, A., Phillips, J., Gaillard, W. D., Kenworthy, L. E., Yerys, B. E., Vaidya, C. J., Menon, V.
2013; 5 (3): 738-747

- **Developmental Maturation of Dynamic Causal Control Signals in Higher-Order Cognition: A Neurocognitive Network Model** *PLOS COMPUTATIONAL BIOLOGY*
Supekar, K., Menon, V.
2012; 8 (2)
- **Dynamic reconfiguration of structural and functional connectivity across core neurocognitive brain networks with development.** *Journal of Neuroscience*
Supekar, K., Lucina Q., U., Ryali, S., Vinod , M.
2011; 31 (50): 18578-89
- **Development of functional and structural connectivity within the default mode network in young children** *NEUROIMAGE*
Supekar, K., Uddin, L. Q., Prater, K., Amin, H., Greicius, M. D., Menon, V.
2010; 52 (1): 290-301
- **Development of Large-Scale Functional Brain Networks in Children** *PLOS BIOLOGY*
Supekar, K., Musen, M., Menon, V.
2009; 7 (7)
- **Network analysis of intrinsic functional brain connectivity in Alzheimer's disease** *PLOS COMPUTATIONAL BIOLOGY*
Supekar, K., Menon, V., Rubin, D., Musen, M., Greicius, M. D.
2008; 4 (6)
- **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
- **Effects of Methylphenidate on Aberrant Brain Network Dynamics in Children With Attention-Deficit/Hyperactivity Disorder: A Randomized Controlled Clinical Trial**
Mizuno, Y., Cai, W., Supekar, K., Makita, K., Takiguchi, S., Tomoda, A., Menon, V.
2021: S108
- **Aberrant Time-Varying Cross-Network Interactions in Children With Attention-Deficit/Hyperactivity Disorder and the Relation to Attention Deficits.** *Biological psychiatry. Cognitive neuroscience and neuroimaging*
Cai, W., Chen, T., Szegletes, L., Supekar, K., Menon, V.
2018; 3 (3): 263–73
- **Bayesian Switching Factor Analysis for Estimating Time-varying Functional Connectivity in fMRI.** *NeuroImage*
Taghia, J., Ryali, S., Chen, T., Supekar, K., Cai, W., Menon, V.
2017
- **The influence of sex and age on prevalence rates of comorbid conditions in autism.** *Autism research*
Supekar, K., Iyer, T., Menon, V.
2017
- **Reconfiguration of parietal circuits with cognitive tutoring in elementary school children.** *Cortex; a journal devoted to the study of the nervous system and behavior*
Jolles, D., Supekar, K., Richardson, J., Tenison, C., Ashkenazi, S., Rosenberg-Lee, M., Fuchs, L., Menon, V.
2016; 83: 231-245
- **Multivariate dynamical systems-based estimation of causal brain interactions in fMRI: Group-level validation using benchmark data, neurophysiological models and human connectome project data** *JOURNAL OF NEUROSCIENCE METHODS*
Ryali, S., Chen, T., Supekar, K., Tu, T., Kochalka, J., Cai, W., Menon, V.
2016; 268: 142-153
- **Large-scale intrinsic functional network organization along the long axis of the human medial temporal lobe.** *Brain structure & function*
Qin, S., Duan, X., Supekar, K., Chen, H., Chen, T., Menon, V.
2016; 221 (6): 3237-3258
- **Parietal hyper-connectivity, aberrant brain organization, and circuit-based biomarkers in children with mathematical disabilities** *DEVELOPMENTAL SCIENCE*
Jolles, D., Ashkenazi, S., Kochalka, J., Evans, T., Richardson, J., Rosenberg-Lee, M., Zhao, H., Supekar, K., Chen, T., Menon, V.

2016; 19 (4): 613-631

- **Distinct Global Brain Dynamics and Spatiotemporal Organization of the Saliency Network** *PLOS BIOLOGY*
Chen, T., Cai, W., Ryali, S., Supekar, K., Menon, V.
2016; 14 (6)
- **Combining optogenetic stimulation and fMRI to validate a multivariate dynamical systems model for estimating causal brain interactions** *NEUROIMAGE*
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2016; 132: 398-405
- **Plasticity of left perisylvian white-matter tracts is associated with individual differences in math learning.** *Brain structure & function*
Jolles, D., Wassermann, D., Chokhani, R., Richardson, J., Tenison, C., Bammer, R., Fuchs, L., Supekar, K., Menon, V.
2016; 221 (3): 1337-1351
- **Temporal dynamics and developmental maturation of saliency, default and central-executive network interactions revealed by variational Bayes hidden markov modeling** *PLOS COMPUTATIONAL BIOLOGY*
Ryali*, S., Supekar*, K., Chen, T., Kochalka, J., Cai, W., Nicholas, J., Padmanabhan, A., Menon, V.
2016; 12 (12)
- **Brain State Differentiation and Behavioral Inflexibility in Autism†.** *Cerebral cortex*
Uddin, L. Q., Supekar, K., Lynch, C. J., Cheng, K. M., Odriozola, P., Barth, M. E., Phillips, J., Feinstein, C., Abrams, D. A., Menon, V.
2015; 25 (12): 4740-4747
- **Remediation of Childhood Math Anxiety and Associated Neural Circuits through Cognitive Tutoring.** *journal of neuroscience*
Supekar, K., Iuculano, T., Chen, L., Menon, V.
2015; 35 (36): 12574-12583
- **Sex differences in cortical volume and gyrification in autism** *MOLECULAR AUTISM*
Schaer, M., Kochalka, J., Padmanabhan, A., Supekar, K., Menon, V.
2015; 6
- **Role of the anterior insular cortex in integrative causal signaling during multisensory auditory-visual attention.** *European journal of neuroscience*
Chen, T., Michels, L., Supekar, K., Kochalka, J., Ryali, S., Menon, V.
2015; 41 (2): 264-274
- **Aberrant Cross-Brain Network Interaction in Children With Attention-Deficit/Hyperactivity Disorder and Its Relation to Attention Deficits: A Multisite and Cross-Site Replication Study.** *Biological psychiatry*
Cai, W. n., Chen, T. n., Szegletes, L. n., Supekar, K. n., Menon, V. n.
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- **Cognitive tutoring induces widespread neuroplasticity and remediates brain function in children with mathematical learning disabilities.** *Nature communications*
Iuculano, T., Rosenberg-Lee, M., Richardson, J., Tenison, C., Fuchs, L., Supekar, K., Menon, V.
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- **Cognitive tutoring induces widespread neuroplasticity and remediates brain function in children with mathematical learning disabilities.** *Nature communications*
Iuculano, T., Rosenberg-Lee, M., Richardson, J., Tenison, C., Fuchs, L., Supekar, K., Menon, V.
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- **Sex differences in cortical volume and gyrification in autism.** *Molecular autism*
Schaer, M., Kochalka, J., Padmanabhan, A., Supekar, K., Menon, V.
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- **Amygdala subregional structure and intrinsic functional connectivity predicts individual differences in anxiety during early childhood.** *Biological psychiatry*
Qin, S., Young, C. B., Duan, X., Chen, T., Supekar, K., Menon, V.
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- **A Robust Classifier to Distinguish Noise from fMRI Independent Components** *PLOS ONE*
Sochat, V., Supekar, K., Bustillo, J., Calhoun, V., Turner, J. A., Rubin, D. L.

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- **Brain Organization Underlying Superior Mathematical Abilities in Children with Autism** *BIOLOGICAL PSYCHIATRY*
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2014; 75 (3): 223-230
- **A robust classifier to distinguish noise from fMRI independent components.** *PloS one*
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- **Reconceptualizing functional brain connectivity in autism from a developmental perspective** *FRONTIERS IN HUMAN NEUROSCIENCE*
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- **Salience Network-Based Classification and Prediction of Symptom Severity in Children With Autism** *JAMA PSYCHIATRY*
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- **Default Mode Network in Childhood Autism: Posteromedial Cortex Heterogeneity and Relationship with Social Deficits** *BIOLOGICAL PSYCHIATRY*
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- **Underconnectivity between voice-selective cortex and reward circuitry in children with autism** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
Abrams, D. A., Lynch, C. J., Cheng, K. M., Phillips, J., Supekar, K., Ryali, S., Uddin, L. Q., Menon, V.
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- **Neural predictors of individual differences in response to math tutoring in primary-grade school children.** *Proceedings of the National Academy of Sciences of the United States of America*
Supekar, K., Swigart, A. G., Tenison, C., Jolles, D. D., Rosenberg-Lee, M., Fuchs, L., Menon, V.
2013; 110 (20): 8230-8235
- **A parcellation scheme based on von Mises-Fisher distributions and Markov random fields for segmenting brain regions using resting-state fMRI** *NEUROIMAGE*
Ryali, S., Chen, T., Supekar, K., Menon, V.
2013; 65: 83-96
- **Reconceptualizing functional brain connectivity in autism from a developmental perspective.** *Frontiers in human neuroscience*
Uddin, L. Q., Supekar, K., Menon, V.
2013; 7: 458-?
- **NDAR: A Model Federal System for Secondary Analysis in Developmental Disabilities Research** *USING SECONDARY DATASETS TO UNDERSTAND PERSONS WITH DEVELOPMENTAL DISABILITIES AND THEIR FAMILIES*
Novikova, S. I., RICHMAN, D. M., Supekar, K., Barnard-Brak, L., Hall, D.
2013; 45: 123-153
- **Immature integration and segregation of emotion-related brain circuitry in young children** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
Qin, S., Young, C. B., Supekar, K., Uddin, L. Q., Menon, V.
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- **Estimation of functional connectivity in fMRI data using stability selection-based sparse partial correlation with elastic net penalty** *NEUROIMAGE*
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- **Multivariate dynamical systems models for estimating causal interactions in fMRI** *NEUROIMAGE*
Ryali, S., Supekar, K., Chen, T., Menon, V.
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- **Dissociable Connectivity within Human Angular Gyrus and Intraparietal Sulcus: Evidence from Functional and Structural Connectivity** *CEREBRAL CORTEX*

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- Uddin, L. Q., Supekar, K., Amin, H., Rykhlevskaia, E., Nguyen, D. A., Greicius, M. D., Menon, V.
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- **Sparse logistic regression for whole-brain classification of fMRI data** *NEUROIMAGE*
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 - **The caBIG (TM) Annotation and Image Markup Project** *JOURNAL OF DIGITAL IMAGING*
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 - **Typical and atypical development of functional human brain networks: insights from resting-state FMRI.** *Frontiers in systems neuroscience*
Uddin, L. Q., Supekar, K., Menon, V.
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 - **Resting-State Functional Connectivity Reflects Structural Connectivity in the Default Mode Network** *CEREBRAL CORTEX*
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 - **Unsupervised method for automatic construction of a disease dictionary from a large free text collection.** *AMIA ... Annual Symposium proceedings / AMIA Symposium. AMIA Symposium*
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 - **Knowledge Zone: A Public Repository of Peer-Reviewed Biomedical Ontologies** *12th World Congress on Health (Medical) Informatics*
Supekar, K., Rubin, D., Noy, N., Musen, M.
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 - **Extracting Subject Demographic Information From Abstracts of Randomized Clinical Trial Reports** *12th World Congress on Health (Medical) Informatics*
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 - **Ontology-based annotation and query of tissue microarray data.** *AMIA ... Annual Symposium proceedings / AMIA Symposium. AMIA Symposium*
Shah, N. H., Rubin, D. L., Supekar, K. S., Musen, M. A.
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 - **Combining text classification and Hidden Markov Modeling techniques for categorizing sentences in randomized clinical trial abstracts.** *AMIA ... Annual Symposium proceedings / AMIA Symposium. AMIA Symposium*
xu, r., Supekar, K., Huang, Y., Das, A., Garber, A.
2006: 824-828
 - **Representing lexical components of medical terminologies in OWL.** *AMIA ... Annual Symposium proceedings / AMIA Symposium. AMIA Symposium*
Supekar, K., Chute, C. G., Solbrig, H.
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 - **Ontology metadata to support the building of a library of biomedical ontologies.** *AMIA ... Annual Symposium proceedings / AMIA Symposium. AMIA Symposium*
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Supekar, K., Marwadi, A., Lee, Y., Medhi, D.

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