Huchuan (Cedric) Xia

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Education

University of Pennsylvania, Perelman School of Medicine, Philadelphia, PA
    MD Candidate   2013 – Exp. 2021
        Medical Scientist Training Program
    PhD in Neuroscience   2015 – 2019
        Advisor: Theodore Satterthwaite, MD & Danielle Bassett, PhD

Washington University in St. Louis, St. Louis, MO
    BA in Biology: Neuroscience   2009 – 2013
        Summa cum laude

Research Experience

University of Pennsylvania, Perelman School of Medicine, Philadelphia, PA Graduate student	2013 – Present
Institut national de recherche en informatique et en automatique (INRIA), Paris, France Research intern	Summer 2019
Rheinisch-Westfälische Technische Hochschule (RWTH) Aachen University, Aachen, Germany Exchange graduate student	Spring 2019
Washington University School of Medicine in St. Louis, St. Louis, MO Research assistant	2009 – 2013

Awards

Blavatnik Foundation Fellowship in Biomedical Research	2018-19
Interurban Clinical Club Jon Epstein Scholar	2019
Society of Biological Psychiatry (SOBP) Predoctoral Scholars Travel Fellowship Awards	2019
Robert M. Toll Prize for Outstanding Paper	2018
Big Data Neuroscience Workshop Travel Award	2017
Organization on Human Brain Mapping (OHBM) Merit Abstract Award	2017
Jameson-Hurvich Award in Behavioral Neuroscience	2016
American Physician-Scientist Association Merit Travel Award	2015
Cognitive, Computational, Systems Neuroscience Fellowship	2011
Howard Hughes Medical Institute Summer Research Fellowship	2010

Society Membership

Society of Biological Psychiatry	2019 – Present
Organization on Human Brain Mapping	2017 – Present
Society for Neuroscience	2015 – 2017

Presentations

Invited Talks

[1] Grand Rounds, Department of Psychiatry, University of Southern California, Los Angeles, CA	2019
[2] Organization on Human Brain Mapping, Rome, Italy	2019
[3] Interurban Clinical Club, Philadelphia, PA	2019

[4] NeuroSpin Seminar, French National Institute of Computer Science (INRIA), Paris, France	2019
[5] Department of Psychiatry Seminar, RWTH Aachen University, Aachen, Germany	2019
[6] Department of Psychiatry Research Day, University of Pennsylvania, Philadelphia, PA	2018
[7] MD-PhD Grand Rounds, University of Pennsylvania, Philadelphia, PA	2018
[8] Society for Neuroscience, Washington, DC	2017
[9] Organization on Human Brain Mapping, Vancouver, Canada	2017

Posters
[1] Organization on Human Brain Mapping, Rome, Italy	2019
[2] Society of Biological Psychiatry, Chicago, IL	2019
[3] Statistical Methods in Imaging Conference, Philadelphia, PA	2018
[4] Organization on Human Brain Mapping, Vancouver, Canada	2017
[5] American Physician Scientist Association, Chicago IL	2016
[6] Computational & Systems Neuroscience (CoSyNe), Salt Lake City, UT	2016

Teaching

Teaching assistant

Introduction to Brain and Behavior	2016
University of Pennsylvania, College of Arts and Sciences	
Cell Biology	2013
Washington University in St. Louis, College of Arts and Sciences	
Laboratory of Neurophysiology	2012
Washington University in St. Louis, College of Arts and Sciences	

Guest lecturer

Introduction to Brain and Behavior	2016
University of Pennsylvania, College of Arts and Sciences	

Service

Reviewer, ad-hoc

NeuroImage	*Human Brain Mapping*
Biological Psychiatry	*Cerebral Cortex*
Journal of Neuroscience	*Experimental Brain Research*
Scientific Reports	*Cognitive Systems Research*

Community outreach

Penn Neuroscience Public Lecture, Master of Ceremonies & Planning Committee	2018
Penn LGBT People in Medicine, Community Outreach Chair	2014
West Philadelphia Hypertension Community Clinic, Coordinator & Volunteer Clinician	2014

Publications

[1] **CH Xia**, Z Ma, Z Cui, DS Bassett, TD Satterthwaite, RT Shinohara, D Witten. Multi-scale network regression for brain-phenotype associations. *Human Brain Mapping,* 2020*; 1-14*

[2] AN Kaczkurkin, TM Moore, A Sotiras, **CH Xia**, RT Shinoahara, TD Satterthwaite. Approaches to Defining Common and Dissociable Neurobiological Deficits Associated with Psychopathology in Youth. *Biological Psychiatry, 2020*; In Press. Cover art design of this special issue by **CH Xia**

[3] Z Cui, J Stiso, GL Baum, JZ Kim, DR Roalf, RF Betzel, S Gu, Z Lu, **CH Xia**, X He, R Ciric, DJ Oathes, TM Moore, RT Shinohara, K Ruparel, C Davatzikos, F Pasqualetti, RE Gur, RC Gur, DS Bassett, TD

Satterthwaite. Optimization of energy state transition trajectory supports the development of executive function during youth. *eLife,* 2020*;* In Press

[4] Z Cui, H Li, **CH Xia**, GL Baum, BS Larson, A Adebimpe, M Cieslak, A Alexander-Bloch, Y Fan, D Fair, DR Roalf, TM Moore, RT Shinohara, D Wolf, C Davatzikos, RE Gur, RC Gur, DS Bassett, TD Satterthwaite. Individual variation in control network topography supports executive function in youth. *Neuron*, 2020; 106:1-14

[5] GL Baum, Z Cui, DR Roalf, R Ciric, RF Betzel, BS Larsen, M Cieslak, PA Cook, **CH Xia**, TM Moore, K Ruparel, DJ Oathes, AF Alexander-Bloch, RT Shinohara, A Raznahan, RC Gur, RE Gur, DS Bassett, TD Satterthwaite. Development of structure-function coupling in human brain networks during youth. *Proceedings of the National Academy of Sciences*, 2020; 117(01):771-778

[6] HT Wang, J Smallwood, J Mourao-Miranda, **CH Xia**, TD Satterthwaite, DS Bassett, D Bzdok. Finding the needle in high-dimensional haystack: a tutorial on canonical correlation analysis. *NeuroImage,* 2020; In Press

[7] S Gu, **CH Xia**, R Ciric, TM Moore, RC Gur, RE Gur, TD Satterthwaite, DS Bassett. Unifying the notions of modularity and core-periphery structure in functional brain networks during youth. *Cerebral Cortex*, 2019; 00:1-16

[8] **CH Xia**, Z Ma, Z Cui, R Ciric, S Gu, RF Betzel, ME Calkins, PA Cook, A Garcia de la Garza, TM Moore, DR Roalf, K Ruparel, D Wolf, RC Gur, RE Gur, C Davatzikos, RT Shinohara, DS Bassett, TD Satterthwaite. Linked dimensions of psychopathology and functional connectivity in brain networks. *Nature Communications*, 2018; 9(1):3003. Featured in a special issue of *Nature Medicine* and *Healio Psychiatry*

[9] DR Roalf, A Garcia de la Garza, A Rosen, ME Calkins, TM Moore, M Quarmley, K Ruparel, CH Xia, PE Rupert, TD Satterthwaite, RT Shinohara, MA Elliott, RC Gur, RE Gur. Alterations in white matter microstructure in individuals at persistent risk for psychosis. *Molecular Psychiatry*, 2019; Feb 05

[10] AN Kaczkurkin, S Park, A Sotiras, A Sharp, TM Moore, ME Calkins, A Rosen, R Ciric, K Ruparel, D Pine, RT Shinohara, DR Roalf, **CH Xia**, RC Gur, C Davatzikos, RE Gur, TD Satterthwaite. Evidence for dissociable linkage of dimensions of psychopathology to brain structure in youths. *The American Journal of Psychiatry*, 2019; 176:12

[11] SN Vandekar, TD Satterthwaite, **CH Xia**, K Ruparel, RC Gur, RE Gur, RT Shinohara. Robust spatial extent inference with a semiparametric bootstrap joint testing procedure. *Biometrics*, 2019; 75:1145–1155

[12] TD Satterthwaite, **CH Xia**, DS Bassett. Personalized neuroscience: common and individual-specific features in functional brain networks. *Neuron*, 2018; 98(2):243-245

[13] R Nassar, AN Kaczkurkin, **CH Xia**, A Sotiras, M Pehlivanova, TM Moore, A Garcia de La Garza, DR Roalf, A Rosen, S Lorch, K Ruparel, RT Shinohara, C Davatzikos, RC G, RE Gur, TD Satterthwaite. Gestational age is dimensionally associated with structural brain network abnormalities in adolescence. *Cerebral Cortex*, 2019; 29(5): 2102-2114

[14] DS Bassett, **CH Xia**, TD Satterthwaite. Understanding the emergence of neuropsychiatric disorders with network neuroscience. *Biological Psychiatry: Cognitive Neuroscience and Neuroimaging*, 2018;3(9):742-753

[15] GL Baum, DR Roalf, PA Cook, R Ciric, A Rosen, **CH Xia**, M Elliot, K Ruparel, R Verma, B Tunc, RC Gur, RE Gur, DS Bassett, TD Satterthwaite. The impact of in-scanner head motion on structural connectivity derived from diffusion tensor imaging. *Neuroimage*, 2018;173:275-286

[16] AN Kaczkurkin, T Moore, ME Calkins, R Ciric, J Detre, M Elliott, E Foa, A Garcia de la Garza, D Roalf, A Rosen, K Ruparel, RT Shinohara, **CH Xia**, D Wolf, RE Gur, RC Gur, TD Satterthwaite. Common and

dissociable regional cerebral blood flow differences associate with dimensions of psychopathology across categorical diagnoses. *Molecular Psychiatry*, 2018;23:1981-1989

[17] L Tian, M Karimi, SK Loftin, CA Brown, **CH Xia**, J Xu, R Mach, JS Perlmutter. No differential regulation of dopamine transporter (DAT) and vesicular monoamine transporter 2 (VMAT2) binding in a primate model of Parkinson disease. *PLoS ONE*, 2012;7(2):e31439

Other Media **CH Xia** Cover art for *Biological Psychiatry*
special issue, Convergence and heterogeneity in psychopathology, July, 2020.

CH Xia Graphical abstract for *Current Biology*
GL Baum et al., Modular segregation of structural brain networks supports the development of executive youth. 2017;27:1561-1572

Software Multi-Scale Network Regression. R analysis tool, 2020.

Sparse Canonical Correlation Analysis (sCCA). R analysis tool, 2018.

Certifications Python for Engineers and Scientists
Rescue SCUBA diver