

Curriculum Vitae

Sean X. Luo
Department of Psychiatry
Columbia University and
New York State Psychiatric Institute

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Employment

Assistant Professor of Clinical Psychiatry
07/2017 – current
Division on Substance Use Disorders
Department of Psychiatry
Columbia University

Clinical and Research Fellow in Addiction Psychiatry
Leon Levy Fellow
07/2014 – 07/2017
Columbia University Medical Center, NewYork-Presbyterian Hospital and
New York State Psychiatric Institute

Psychiatry Resident
Leon Levy Fellow
07/2010 – 06/2014
Columbia University Medical Center, NewYork-Presbyterian Hospital and
New York State Psychiatric Institute

Education

Medical - College of Physicians and Surgeons, Columbia University
09/2003 - 05/2010
M.D./Ph.D., 05/2010

Graduate – Graduate School of Arts and Sciences, Columbia University
Theoretical Neuroscience and Machine Learning
09/2003 - 05/2010
M.D./Ph.D., 05/2010

Undergraduate - University of Chicago, Chicago, IL
Physics and Mathematics (double major)
09/1999 - 06/2003
B.S./B.A., with Honors 06/2003

Membership and Honorary/Professional Societies

College on the Problem of Drug Dependence, 2015-
American Academy of Addiction Psychiatry 2011-
Society of Biological Psychiatry 2011-

American Academy of Clinical Psychopharmacology 2012-2013
American Academy of Child and Adolescent Psychiatry 2012-2013
American Physician Scientist Association 2003-2010
American Medical Student Association 2003-2010
American Psychiatric Association, Member-in-Training 2010-2015
Sigma Chi 2003-2005
Society for Neuroscience 2007-2012

Ad Hoc Reviewer for

Nature Neuroscience
PLOS One
Journal of Computational Neuroscience
PNAS
Journal of Adolescent Health
American Journal of Drug and Alcohol Dependence
Journal of Substance Abuse and Alcoholism
Annals of Psychiatry and Mental Health
Behavioral Brain Research
Journal of Biostatistics and Biometric Applications

Examinations and Licensure

USMLE Step 1 06/2005
USMLE Step 2 CS/CK 12/2009
USMLE Step 3 03/2011
NY State Medical License, 07/2011-Current
DEA Controlled Substance Authorization Number, 09/2011-Current
Buprenorphine Prescription Certificate 03/2011-Current
ABPN Psychiatry Board Certification 12/2014
ABPN Addiction Psychiatry Board Certification 12/2016

Awards

NIDA CPDD Travel Award, 2016
AAAP Resident/Fellow Travel Award, 2015
Fleischman Memorial Pilot Award, 2015
AAAP Early Career Young Investigator Award, 2013
Samuel Perry Memorial Award for Research in Residency, 2013
APA Junior Investigator Research Colloquium, 2013
APA/Lily Resident Research Award, 2013
AADPRT BRAIN Scholar Award, 2013
New York State Psychiatric Association Resident Paper Contest, Third Place, 2012
Janssen Pharmaceuticals ARM Resident Research Award, 2012
Leon Levy Fellowship for Research in Psychiatry, 2010-current
NIMH MD/PhD Conference Travel Award, 2007
NIH MSTP Training Grant 2002-2008
UCLA Neuroengineering Fellowship, 2002
Stanley Foundation Summer Research Fellowship, 2001

HHMI Summer Research Fellowship, 2000
University of Chicago College Gift Aid, 1999
Intel International Science Fair, Fourth Place, 1999

Grant Support

Active Grants

07/01/17-07/01/22 (PI: S. Luo) “Electroretinogram, a new human biomarker for smoking cessation treatment” 1K23DA042136, National Institute of Drug Abuse (NIDA)

07/01/14-07/01/18 (Research Trainee, Mentor: E. Nunes, PI: M. Oquendo), No-cost extension, “Personalized treatments of substance use disorders”, Translational Neuroscience Research Grant, Leon Levy Foundation.

Completed Grants

04/01/15-04/01/17 (PI: Luo) “Pilot project to develop an electroretinogram biomarker for smoking cessation”, Fleischman Memorial Fund.

07/01/14-07/01/16 (Trainee, PI: F. Levin) “Research Fellowship in Substance Abuse Disorder”, NIH/NIDA, 5T32DA007294-23

07/01/10-07/01/14 (Trainee, Mentor: E. Nunes, PI: M. Oquendo), “Personalized treatments of substance use disorders”, Translational Neuroscience Research Grant, Leon Levy Foundation.

07/01/12-07/01/14 (Trainee, PI: M. Oquendo), Residency Research Track and Training Award, NIH/NIMH 5R25MH086466-04.

07/01/13-07/01/14 (PI, Mentor: M. Oquendo), “Predictive modeling of differential treatment outcomes in a randomized clinical trial of bipolar disorder”, Janssen Pharmaceuticals.

07/01/13-07/01/14 (PI, Mentor: E. Nunes), “Causal models of effects of psychostimulant in smoking cessation”, Samuel Perry Fund.

Teaching Experience

08/2013, 08/2014, 08/2015, 07/2016

Course Director

PGY-2 Statistics/Data Science, “Becoming a Data Savvy Psychiatrist”

Department of Psychiatry, Columbia University, New York

09/2014

Teaching Staff, Global Mental Health Fellowship Program

“Foundations of Statistics for Clinical Trials”

Department of Psychiatry, Columbia University, New York

01/2014-05/2014

Resident Teaching Staff for Medical Students

Department of Psychiatry, Columbia University, New York

09/2006 - 06/2007

Course Director, Introduction to Neuroscience
Office of Outreach, SPREP, Columbia University, New York

01/ 2006 - 05/2006

Teaching assistant, Systems neuroscience course
Department of Biology, Columbia University, New York

Mentoring

Rhea LaFleur (Columbia undergrad) 2017-
Jocelyn Jin (Columbia statistics MS student) 2017-
Galen Xing (Columbia undergrad) 2016-2017
Yuki Li (Columbia undergrad) 2015-2016

Misc. Clinical

07/2014 – 02/2015

Per Diem psychiatrist, Inpatient, Consultation-Liaison and Emergency Room
Lenox Hill Hospital, New York

07/2012-05/2013

Per Diem psychiatrist, Inpatient, Consultation-Liaison and Emergency Room
NewYork Presbyterian, Allen Hospital, New York

Committees and Other Services

06/2017 - Current

Member

Industry/academia/government relations committee
College on the Problem of Drug Dependence

03/2016 - Current

Founding Advisory Member
Data Science Research Task Force
Department of Psychiatry
Columbia University

06/2015 - Current

Founding Advisory Member
Data Science Task Force
Center for Clinical Trials Network, National Institute on Drug Abuse

06/2015 - Current

Advisory Committee
Smoking Cessation Program (Director: D. Albert)
Delivery System Reform Incentive Payment (DSRIP) Program, NY-Presbyterian Site
NY State Department of Health

10/2003 - 06/2004

Executive Committee
Physicians for Human Rights, Columbia University Chapter

01/2008 - 06/2008

STV Fellow

Office of Science and Technology Ventures, Columbia University

Peer Reviewed Original Papers

Luo SX, Wall M, Covey L, Hu MC, Levin FR, Nunes EV and Winhusen T. Exploring longitudinal course and treatment-baseline severity interactions in secondary outcomes of smoking cessation treatment in individuals with Attention-Deficit Hyperactivity Disorder (ADHD) *American Journal of Drug and Alcohol Dependence*, in press

Arbuckle A, Luo SX, Pincus H, Gordon JA, Chung J, Chavez M, Oquendo MA. Trends in MD, PhD Graduates Entering Psychiatry: Assessing the Physician-Scientist Pipeline, *Academic Psychiatry*, in press

Iacoviello B, Steinerman JR, Klein DB, Silver TL, Berger AG, Luo, SX, Schork NJ Initial evaluation of Clickotine: A personalized smartphone application for smoking cessation, 2017, *Journal of Mobile and Internet Research*, 5.4 (2017): e56.

Luo SX, Shinall J, Peterson BS and Gerber A. Semantic mapping reveals distinct patterns of social language in adults with high functioning Autism Spectrum Disorder, *Autism Res.* 2015 Nov 27. doi: 10.1002/aur.1581 PMID: 26613541

Luo SX, Covey L, Hu MC, Levin FR, Nunes EV and Winhusen T. Toward personalized smoking-cessation treatment: using a predictive modeling approach to guide decisions regarding stimulant medication treatment of attention-deficit/hyperactivity disorder (ADHD) in smokers, *American Journal on Addictions*, 2015, 4:348-56. PMID: 25659348

Luo SX, Martinez D, Carpenter K, Silfstein M and Nunes EV. Multimodal predictive modeling of individual treatment outcome in cocaine dependence with combined neuroimaging and behavioral predictors, *Drug and Alcohol Dependence*, 2014, 143:29-35. PMID: 25108585

Luo SX, Axel R, Abbott LF. Generating sparse and selective third-order responses in the olfactory system of the fly *PNAS* 2010 Jun; 107(23): 10713-8. Cited in PubMed; PMID: 20498080

Datta SR, Vasconcelos ML, Ruta V, Luo S, Wong A, Demir E, Flores J, Balonze K, Dickson BJ, Axel R.. The *Drosophila* pheromone cVA activates a sexually dimorphic neural circuit. *Nature*. 2008 Mar; 452(7186): 473-7. Cited in PubMed; PMID: 18305480.

Wang W, Luo S, Ghosh BK, Ulinski PS. Generation of the receptive fields of subpial cells in turtle visual cortex. *J. Integr. Neurosci.* 2006 Dec; 5(4): 561-93. Cited in PubMed; PMID: 17245823.

Papers In Submission/Preparation

Luo SX, Hu MC, Nunes EV and Winhusen T. Methylphenidate may improve smoking cessation after medication discontinuation in patients with more severe ADHD, in preparation

Luo SX, Galfavy HC, Keilp J and Oquendo MO. Predicting individual suicide event in the pharmacologic treatment of bipolar disorder, in preparation

Reviews and Book Chapters

Luo, SX and Levin FR. ADHD and Substance Use Disorders. Invited chapter to appear in *The Comorbidities Casebook*, 2017

Luo SX and Levin FR. Towards Precision Addiction Treatment: New Findings in Co-morbid Substance Use and Attention-Deficit Hyperactivity Disorders, *Current Psychiatry Reports*, 2016, 2017 Mar;19(3):14. PMID: 28251590

Luo, SX and Bisaga A. Opioid Use Disorders. Invited chapter in *Kaplan and Sadock's Comprehensive Textbook of Psychiatry*, 2017

Luo, SX Dopamine and Obesity: A Path for Translation? *Biol Psychiatry*. 2016 Jun 1;79(11): e85-6. PMID: 27198522

Luo, SX, Wittennauer, J., Brennan, T. Internet Addiction. *The Behavioral Addictions*, 2014, Ascher MS and Levounius eds, American Psychiatric Publishing

Abbott LF, Luo SX. A step toward optimal coding in olfaction. *Nature Neuroscience*. 2007 10(11): 1342-3. Cited in PubMed; PMID: 17965649.

Posters

Luo SX, Martinez DM, Tsang SH, Nunes EV (2017, Dec) Pilot results in recording light and dark adapted electroretinogram as a measure of dopamine release, American College of Neuropsychopharmacology, Palm Springs, CA

Luo SX, Xing GK*, Goldsmith J. and Nunes EV (2016, Dec) Clustering of urine toxicology Data, Workshop on Machine Learning in Healthcare, Neuro Information Processing Systems (NIPS), Barcelona, Spain

* Student mentee travel award winner

Luo SX, Goldsmith J, et. al. (2015, Dec) Intrinsic Clustering of Treatment Outcome in Recovery from Opioid Use Disorder, AAAP, Huntington Beach, CA

Luo SX, Goldsmith J, et. al. (2015, June) Intrinsic Clustering of Treatment Outcome in Recovery from Opioid Use Disorder, CPDD, Phoenix, AZ

Luo SX, Wall M, Covey L, et. al. (2014, June) Modeling potential mechanisms of differential treatment effects in osmotic-release methylphenidate (OROS-MPH) for smoking cessation, CPDD, San Juan, Puerto Rico

Luo, SX, Covey, L, Hu, M. et. al, (2012, December) Predictive modeling and nonlinear treatment effects in a multicenter, randomized controlled trial of methylphenidate in smoke cessation intervention, AAAP, Aventura, FL

Luo, SX, Martinez, D., Carpenter, K, et. al., (2012, December) Multimodal predictive modeling in cocaine use disorder, AAAP, Aventura, FL

Luo SX, Peterson BS, Gerber AJ (2012, May) Semantic Mapping of Social Language: Comparing Normal Subjects to Patients With Autism Spectrum Disorders, SOBP, Philadelphia, PA

Gerber AJ, Bansal R, Luo SX, Peterson BS (2012, May) Functional MRI of Social Cognition as a Basis for Understanding Mechanisms of Change in Psychotherapy and Spirituality, SOBP, Philadelphia, PA

Luo SX, Axel R, Abbott LF. (2008, September) Representational Compression and Olfactory Discrimination in the Fly. Gordon Conference on Statistics of Natural Stimuli; Barga, Italy.

Luo SX, Axel R, Abbott LF. (2007, June) Olfactory Coding and Discrimination in Drosophila. Poster presented at: Gordon Conference on Neurocircuits, Newport, RI.

Talks (Invited and Contributed)

Dissecting Urine Toxicology in an individual level predictive model of opioid use disorder, Annual Methodology Workshop, *College on the Problem of Drug Dependence*, June. 2018, San Diego, CA

Deep Learning in Addiction Research: Opening the Hood, *CALDAR Summer Institute & International Global Health Conference: Precision Research in Addiction, HIV, and Care*, August 2017, Los Angeles, CA

Methylphenidate may improve smoking cessation after medication discontinuation in patients with more severe ADHD, *College on the Problem of Drug Dependence*, June. 2017, Montreal, Canada

Developing a precision medicine toolbox for substance use disorders, *Annual Methodology Workshop, College on the Problem of Drug Dependence*, June. 2016, Palm Springs, CA

Organizer and Speaker – Inaugural Big Data and Precision Addiction Psychiatry Workshop at *American Academy of Addiction Psychiatry Annual Meeting*, Dec. 2015, Huntington Beach, CA

Developing a precision medicine toolbox for substance use disorders, *Inaugural Meeting of the Data Science Task Force, Center for the Clinical Trials Network, National Institute of Drug Dependence*, June, 2015, Washington, DC

Developing a precision medicine toolbox for substance use disorders, *Functional Data Analysis Working Group, Department of Biostatistics, Columbia University*, Jan. 2015, New York, NY

Predictive modeling of suicide events in bipolar disorder, *Janssen Pharmaceuticals Psychiatry Resident Mentored Research Symposium*, June 2014, Philadelphia, PA

Multimodal predictive modeling of individual treatment outcome in cocaine dependence with combined neuroimaging and behavioral predictors; *American Academy of Addiction Psychiatry Annual Meeting*, Dec. 2014, Scottsdale, Arizona

Modeling potential mechanisms of differential treatment effects in osmotic-release methylphenidate (OROS-MPH) for smoking cessation; *American Academy of Addiction Psychiatry Annual Meeting*, Dec. 2013, Scottsdale, Arizona

Predicting treatment outcome in pharmacotherapy of bipolar disorder, *Janssen Pharmaceuticals Psychiatry Resident Mentored Research Symposium*, June 2013, Philadelphia, PA

Multimodal predictive modeling of cocaine use disorder, *American Psychiatric Association Junior Investigators Colloquium*, June 2013, Philadelphia, PA

Modeling Olfactory Discrimination in *Drosophila*, *Computation and Systems Neuroscience (COSYNE)*, Feb. 2007, Salt Lake City, UT.

Modeling Olfactory Discrimination in *Drosophila*. *Gordon Meeting on Engineering Principles in Biological Systems* Cold Spring Harbor Laboratory, Nov. 2006, Cold Spring Harbor, NY.

Decorrelation in the olfactory system of *Drosophila*. Oral Presentation presented at: *Gatsby Computational Neuroscience Conference*, Sep. 2006, London, United Kingdom.

Decorrelation in the olfactory system of *Drosophila*. *Schwartz Computational Neuroscience Meeting*, Aug. 2006, New York, NY.

Dendritic varicosities in the subpial interneurons in the turtle visual cortex, *Computational Neuroscience Meeting*, July, 2001, Asilomar, CA.

Language Fluency (Other than English)

Chinese (Mandarin), full proficiency