

Yihong Zhao, PhD

Associate Professor
 Center of Alcohol & Substance Use Studies
 Department of Applied Psychology
 Rutgers University
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EDUCATION

Ph. D., 2010 Biostatistics, Mailman School of Public Health, Columbia University
 M. Phil., 2007 Biostatistics, Mailman School of Public Health, Columbia University
 B. S., 2003 Statistics (with concentration in computing), University of California at Riverside

HONORS AND AWARDS

2018-2015-2016 Diversity Scholars Program, National Institute of Drug Abuse (NIDA) Research Fellow, SAMSI (Statistical and Applied Mathematical Sciences Institute) Program on Challenges in Computational Neuroscience, Durham, NC
 Jan. 2016 National Science Foundation (NSF) Travel Award, Mathematical and Statistical Challenges in Neuroimaging Data Analysis Workshop, Banff International Research Station, Canada
 June 2013 NSF Travel Award, SAMSI Neuroimaging Data Analysis Workshop, Durham, NC
 2006-2009 National Cancer Institute (NCI) Pre-Doctoral Fellowship, Training Program in Cancer Epidemiology, Mailman School of Public Health, Columbia University
 2004-2006 Fellowship, Department of Biostatistics, Columbia University
 2002-2003 Undergraduate Academic Scholarship, University of California at Riverside

MEMBERSHIPS IN PROFESSIONAL SOCIETIES

2019 – Present Regular member of Research Society on Alcoholism

WORK EXPERIENCE

09/2019-present Associate Professor, Center of Alcohol & Substance Use Studies, Department of Applied Psychology, Rutgers University
 07/2018-present Adjunct Assistant Professor, Department of Child and Adolescent Psychiatry, NYU Langone Medical Center
 07/2018-08/2019 Assistant Professor, Department of Health Policy & Health Services Research, Boston University Henry Goldman School of Dental Medicine
 11/2016-06/2018 City Research Scientist, New York City Department of Health and Mental Hygiene
 11/2016-06/2018 Research Assistant Professor, Department of Child and Adolescent

09/2012-11/2016	Psychiatry, NYU Langone Medical Center Assistant Professor, Department of Child and Adolescent Psychiatry, NYU Langone Medical Center
07/2011-07/2012	Assistant Professor, Department of Psychiatry, Columbia University
08/2010-07/2012	Research Scientist, New York State Psychiatry Institute
07/2009-12/2009	Statistical Consultant, Merck Research Laboratories, Rahway, New Jersey
01/2007-05/2007	Research Assistant, Department of Environmental Health Science, Columbia university
07/2006-06/2009	NCI Pre-doctoral Fellow, Department of Epidemiology, Columbia University
01/2005-06/2006	Research Fellow, Department of Biostatistics, Columbia University

COMPUTING SKILLS

Language/Software: R/S+, SAS, MATLAB, C++, Python, FreeSurfer, FSL, parallel computing

TEACHING EXPERIENCE

2018	Instructor, “ <i>PH 800 Introduction to Biostatistics and Epidemiology</i> ”, Boston University Henry Goldman School of Dental Medicine
2018	Instructor, “ <i>PH 803 Biostatistics</i> ”, Boston University School of Henry Goldman Dental Medicine (An advanced biostatistics course offered to post graduates)
2015	Mentor, “ <i>CAMS-UA 997 Independent Study: Advanced Topics in Child and Adolescent Mental Health Studies</i> ” Department of Child and Adolescent Psychiatry, New York University
2015	Mentor, “ <i>CAMS-UA 998 Independent Study: Advanced Topics in Child and Adolescent Mental Health Studies</i> ” Department of Child and Adolescent Psychiatry, New York University
2006-2008	Instructor, “ <i>P8100 Applied Regression Analysis</i> ” (Graduate level Course) Department of Biostatistics, Columbia University
2005	Teaching Assistant, “ <i>P6103 Introduction to Biostatistics</i> ” Department of Biostatistics, Columbia University

TRAINING

Program on Challenges in Computational Neuroscience Opening Workshop
Statistical and Applied Mathematical Sciences Institute (SAMSI), August 17-21, 2015

Neuroimaging Data Analysis: Neuroimaging data analysis workshop
Statistical and Applied Mathematical Sciences Institute (SAMSI), June 4-7, 2013

Statistical Genetics

Course: “*Theoretical Genetic Modeling*” (Biostatistics Department, Columbia University)
Training Session: *National Institute of Environmental Health Sciences (NIEHS) SNPs Workshop* (Columbia University, May 14-15, 2007)
Conference: *15th International Genetic Epidemiology Society Meeting* (Tampa Bay, FL, Nov. 16 & 27, 2006)

Clinical Trials

Course: *Randomized Clinical Trials* (Biostatistics Department, Columbia University)

Project: *“A double-blinded, randomized control trial comparing Lucentis to photodynamic therapy for age-related macular degeneration”*

GRANTS*Pending Grants:*

- [1] Center of Alcohol and Substance Use Studies, Rutgers University 07/2020 - 06/2021
 Title: *Neurobiological mechanisms linking stress and opioid use during treatment for opioid use disorder*
 Role: *Co-I*

Grants Completed as PI:

- [1] National Institute on Alcohol Abuse and Alcoholism (R21AA023800) 2014-2016
 Title: *Links among DNA methylation, neurophenotypes, and alcohol use disorders (AUDs)*
 Role: *PI*
- [2] Leon Levy Fellowship from Leon Levy Foundation 2014-2016
 Title: *A Big Data Approach for Integrating Genetics and Neuroimaging*
 Role: *PI*

Collaborative Grants Completed as Biostatistician, Co-Investigator or Data Analyst:

- [1] National Institute of Mental Health (UG3DE028866) 07/01/19-06/30/25
 Title: *Delivery of a Smoking Cessation Induction Intervention Via Virtual Reality Headset During a Dental Cleaning*
 Role: *Co-I (ended on 09/01/2019 due to my move to Rutgers)*
- [2] National Institute of Mental Health (4U01MH099059-04) 2013-2018
 Title: *Longitudinal Discovery of Brain Developmental Trajectories*
 Role: *Biostatistician (07/2016-06/2018)*
- [3] National Institute of Mental Health (R21MH107045) 2015-2017
 Title: *Enhancing the Autism Brain Imaging Data Exchange to Define the Autism Connectome*
 Role: *Biostatistician (ended on 11/28/2016)*
- [4] National Institute of Mental Health (R01MH091140) 2011-2016
 Title: *Prefrontal-Amygdala Circuitry in Young Children with Severe Emotion Dysregulation*
 Role: *Biostatistician (05/2015-06/2016)*
- [5] National Heart, Lung, and Blood Institute (R44HL127826) 2015-2017
 Title: *Mobile Technology and Online Tools to Improve Asthma Control in Adolescents*
 Role: *Biostatistician (ended on 11/28/2016)*
- [6] National Institute of Mental Health (R03MH104334) 2014-2016

Title: *Validity and Reliability of New Standard for Resting fMRI Data*

Role: *Co-Investigator*

- [7] National Institute of Mental Health (R01MH105506) 2015-2020
 Title: *Neuronal Correlates of Autistic Traits in ADHD and Autism*
 Role: *Biostatistician (ended on 11/28/2016)*
- [8] National Institute of Mental Health (R01MH093677) 2011-2016
 Title: *The effects of prenatal stress & poor nutrition on brain and cognition*
 Role: *Co-Investigator and Biostatistician (until 07/2012)*
- [9] National Institute of Mental Health (R01MH092580) 2011-2016
 Title: *Prenatal stress: the epigenetic basis of maternal and perinatal effects*
 Role: *Biostatistician (until 07/2012)*
- [10] National Institutes of Mental Health (R21MH096132) 2012-2014
 Title: *The influence of aerobic exercise on cognitive functioning in Schizophrenia*
 Role: *Biostatistician*
- [11] National Institute of Mental Health (R01MH086611, subcontract) 2011-2015
 Title: *Implementation of an Evidence-Based PTSD Treatment in Public Sector Mental Health Settings.*
 Role: *Biostatistician*
- [12] NYU-HHC Clinical and Translational Science Institute 2013
 Title: *Pilot Testing an Intervention to Increase Implementation of Evidence-based Guidelines Among General Pediatricians to Achieve Cessation in Smoking Parents of Urban Children with Asthma.*
 Role: *Data Analyst*

PROFESSIONAL SERVICES

A regular statistics reviewer for The Lancet Psychiatry since 2014

Ad hoc manuscript reviewer: *The American Statistician, Journal of the American Statistical Association, Computational Statistics, IEEE Transactions on Medical Imaging, Biometrics, Statistical Sinica, International Journal of Obesity, Journal of the Royal Society Interface, Translational Behavioral Medicine: Practice, Policy and Research, Neuroscience, Neurobiology of Aging, and Neuroimage.*

Organizer of invited talk session: “*Advanced computational methods for complex data*”. The 8th International Conference of ERCIM WG on Computational and methodological Statistics, London, UK, Dec. 2015

Organizer of invited talk session: “*Network analysis and its application in mental health studies*”. The Joint Statistical Meetings, Boston, MA, Aug. 2014

CONFERENCE TALKS/SEMINARS

- [1] “*Imaging genetics towards mechanistic understanding of psychiatric disorders*” Statistical and Applied Mathematical Sciences Institute (6 May, 2016, Invited Talk)
- [2] “*A functional approach to modeling brain image data*” The 2014 Joint Statistical Meetings, Boston, MA, US (Aug. 7, 2014, Topic Contributed)
- [3] “*Wavelet-based weighted LASSO with application to mental health data*” The International Chinese Statistical Association Meetings, Portland, OR, US (17 June, 2014, Invited Talk)
- [4] “*Multimodal brain image classification*” Third Annual Thomas R. Ten Have Symposium on Statistics in Mental Health, New Haven, CT, US (May 29, 2014, Invited Talk)
- [5] “*Wavelet-based Weighted LASSO and Screening Strategies in Functional Linear Model*” The ENAR Meetings, Orlando, FL, US (March 11, 2013, Invited Talk)
- [6] “*Screening strategies for high dimensional regression problems with application to functional linear regression*” The 2010 Joint Statistical Meetings, Vancouver, Canada (Aug. 1, 2010, Invited Talk)
- [7] “*Wavelet-based functional linear regression*” New York State Psychiatric Institute, New York, NY (Dec. 8, 2009, Biostatistics Seminar)
- [8] “*Wavelet-based functional linear regression model*” The 2009 Joint Statistical Meetings, Washington, DC (Aug. 3, 2009, Topic Contributed)

PUBLICATIONS (* Corresponding author)Original Articles in Statistical Methodology:

- [1] Zhao Y*, Klein A, Castellanos F. X., Milham M. P. (2019) Brain Age Prediction: Cortical and Subcortical Shape Covariation in the Developing Human Brain. *Neuroimage* 202: 116149. DOI: 10.1016/j.neuroimage.2019.116149
- [2] Reiss P, Huo L, Zhao Y, Kelly C, Ogden RT (2015) Wavelet-domain regression and predictive inference in psychiatric neuroimaging. *Annals of Applied Statistics* 9: 1076-1101
- [3] Zhao Y*, Chen H, Ogden RT (2015) Wavelet-based weighted LASSO and screening approaches in functional linear regression. *Journal of Computational and Graphical Statistics* 24: 655-675
- [4] Zhao Y*, Ogden RT, Reiss, PT (2012) Wavelet-based LASSO in functional linear regression. *Journal of Computational and Graphical Statistics* 21: 600-617
- [5] Zhao Y, Wang S (2009) Optimal DNA pooling-based two-stage designs in case-control association studies. *Human Heredity* 67: 46-56

First-authored or Senior-authored Papers in Psychiatry and Systems Biology:

- [6] Zhao Y, Hoenig JM, Protracio A, Lim S, Norman CC (2020) Identification of risk factors for early psychiatric rehospitalization. *Psychiatry Research* 285: <https://doi.org/10.1016/j.psychres.2020.112803>
- [7] Zhao Y*, Ge Y, Zheng ZL (2019). Brain Imaging-Guided Analysis Reveals DNA

- Methylation Profiles Correlated with Insular Surface Area and Alcohol Use Disorder. *Alcohol Clin Exp Res*. 43: 628 - 639 (Highlighted in Article of Public Interest)
- [8] Zhao Y*, Zheng Z-L, Castellanos FX (2017) Analysis of alcohol use disorders from the Nathan Kline Institute-Rockland Sample: Correlation of brain cortical thickness with neuroticism. *Drug and Alcohol Dependence* 170: 66-73
- [9] Zhao Y, Castellanos FX (2016) Annual Research Review: Discovery science strategies in studies of the pathophysiology of child and adolescent psychiatric disorders: promises and limitations. *Journal of Child Psychology & Psychiatry* 57: 421-439
- [10] Huang D, Zhao Y* (co-1st & co-corresponding author), Cao M, Qiao L, Zheng Z-L (2016) Integrated systems biology analysis of transcriptomes reveals candidate genes for acidity control in developing fruits of sweet orange (*Citrus sinensis* L. Osbeck). *Frontiers in Plant Science* 7: 486
- [11] Zheng Z-L, Zhao Y* (2013) Transcriptome comparison and gene coexpression network analysis provide a systems view of citrus response to ‘Candidatus Liberibacter asiaticus’ infection *BMC Genomics* 14(1):27 PMID: 23324561

Other Co-authored Papers in Psychiatry, Behavioral Medicine & Genetics/Genomics:

- [12] Huang C, Lucero DE, Lim S, Zhao Y, Arciuolo R, Blank S, Braunstein S, Burzynski J, Daskalakis D, Fine A, Haberling D, Kennedy J, Vora NM (2020) Infectious Diseases Hospitalizations - New York City, 2001 - 2014. *Public Health Reports* **InPress**
- [13] Freilich E., Zhao Y, Yan S., Caldrony S., and Mehra P. (2020) Opioids prescribing patterns in Oral and Maxillofacial Surgeons: A regional survey-based study. *Journal of Oral and Maxillofacial Surgery* **InPress** PMID: 32275900
- [14] Zhang B, Zhong X, Sauane M, Zhao Y, Zheng Z-L (2020) Modulation of the Pol II CTD Phosphorylation Code by Rac1 and Cdc42 small GTPases in Cultured Human Cancer Cells and Its Implication for Developing a Synthetic-Lethal Cancer Therapy. *Cells* 9:621 PMID: 32143485 PMCID: PMC7140432 DOI: 10.3390/cells9030621
- [15] Chogle S, Zuaitar M, Sarkis R, Mecham A, Zhao Y (2019) The recommendation of cone-beam computed tomography and its effect on endodontic diagnosis and treatment planning. *Journal of Endodontics* PMID: 31837812 DOI: 10.1016/j.joen.2019.10.034
- [16] Shemkus M, Zhao Y, Figueroa R, Mehra P. (2019) Opioid Prescribing Patterns of Oral and Maxillofacial Surgery Residents. *Oral Surgery, Oral Medicine, Oral Pathology and Oral Radiology* PMID: 32035857 DOI: 10.1016/j.oooo.2019.08.015
- [17] Chan PY, Zhao Y, Lim S, Perlman SE, McVeigh KH (2018) Using calibration to reduce measurement error in prevalence estimates based on Electronic Health Records. *Preventing Chronic Disease* 15: E155 PMID: 30576279
- [18] Cao M, Zheng J, Zhao Y, Zhang Z, Zheng Z-L (2018) Network analysis of differentially expressed genes across four sweet orange varieties reveals a conserved role of gibberellin and ethylene responses and transcriptional regulation in expanding citrus fruits. *Tropical Plant Biology* 7:486 PMID: 27092171 <https://doi.org/10.1007/s12042-018-9213-3>
- [19] Alvarez-Fernandez S, Brown HR, Zhao Y, Raithel JA, Bishop SL, Kern SB, Lord C, Petkova E, Di Martino A (2017) Perceived social support in adults with autism spectrum disorder and attention-deficit/hyperactivity disorder. *Autism Research* 10: 866-877

- [20] Cao M, Qiao L, Zheng J, Zhao Y, Zheng Z-L (2017) Gene coexpression network analysis of fruit transcriptomes uncovers a possible mechanistically distinct class of sugar/acid ratio-associated genes in sweet orange. *BMC Plant Biology* 17: 186
- [21] Zhang B, Yang G, Chen Y, Zhao Y, Gao P, Liu B, Wang H, Zheng Z-L (2016) C-terminal domain (CTD) phosphatase links Rho GTPase signaling to Pol II CTD phosphorylation in Arabidopsis and yeast. *Proc. Natl. Acad. Sci. USA* 113: E8197-E8206
- [22] Bruzzese JM, Kingston S, Zhao Y, DiMeglio J, Cespedes A, George M (2016) Psychological factors influencing the decision of urban adolescents with undiagnosed asthma to obtain medical care. *Journal of Adolescent Health* 59: 543-548
- [23] Shatkin JP, Bruzzese JM, Diamond U, Zhao Y, DiMeglio J, Chodaczek M (2016) Effects of a risk and resilience course on stress and coping in college students. *Teaching of Psychology* 43: 204-210
- [24] Markowitz JC, Meehan KB, Petkova E, Zhao Y, Van Meter P, Neria Y, Pessin H, Nazia Y (2016) Treatment preferences of psychotherapy patients with chronic PTSD. *The Journal of Clinical Psychiatry* 77: 363-370
- [25] Markowitz JC, Petkova E, Neria Y, Van Meter P, Zhao Y, Hembree E, Lovell K, Broyanova T, Marshall RD (2015) Is exposure necessary? A randomized clinical trial of interpersonal psychotherapy for PTSD. *The American Journal of Psychiatry* 172: 430-440
- [26] Zhang B, Pasini R, Dan H, Joshi N, Zhao Y, Leustek T, Zheng Z-L (2014) Aberrant gene expression in the Arabidopsis *SULTR1;2* mutants suggests a possible regulatory role for this sulfate transporter in response to sulfur nutrient status. *The Plant Journal* 77: 185-197
- [27] Spicer J, Werner E, Zhao Y, Choi C, Lopez-Pintado S, Foss S, Altemus M, Gyamfi C, Monk C (2013) Ambulatory assessments of psychological and peripheral stress-markers predict outcomes in teen pregnancy. *Journal of Psychosomatic Research* 75: 305-313
- [28] Alex C, Lindgren M, Mckinley P, Brondolo E, Myers M, Zhao Y, Sloan R (2013) Aerobic exercise and strength training effects on cardiovascular sympathetic function in healthy adults: a randomized controlled trial. *Psychosomatic Medicine* 75: 375-381
- [29] Werner E, Zhao Y, Evans L, Kinsella M, Kurzius L, Altincatal A, McDonough L, Monk C (2013) Higher maternal prenatal cortisol and younger age predict greater infant reactivity to novelty at four months: An observation-based study. *Developmental Psychobiology* 55: 707-718
- [30] Sloan R, Shapiro PA, DeMeersman RE, Bagiella E, Brondolo EN, McKinley PS, Shcheslavskaya O, Zhao Y, Schwartz JE, Myers MM (2011) The impact of aerobic training on cardiovascular reactivity to and recovery from challenge. *Psychosomatic Medicine* 73: 134-141
- [31] Xin Z, Zhao Y, Zheng Z-L (2005) Transcriptome analysis reveals specific modulation of abscisic acid signaling by ROP10 small GTPase in Arabidopsis. *Plant Physiology* 139: 1350-1365

Software:

- [1] Huo L, Reiss PT, Zhao Y (2014) refund.wave: wavelet-domain regression with functional data. <http://cran.at.r-project.org/web/packages/refund.wave/index.html>

Manuscript in review:

- [m1] Alshihayb TS., Kaye EA, Zhao Y, Leone CW., Heaton B. (2020) The impact of periodontitis exposure misclassification bias from partial-mouth measurements on association with diabetes and cardiovascular disease. *Journal of Clinical Periodontology* (revision in review)
- [m2] Casey M.K., Oropeza Araque J., Zhao Y., Kantarci A., Motro M., and Will L.A. Mandibular Incisor Irregularity in Monozygotic and Dizygotic Twins and Their Siblings. *American Journal of Orthodontics and Dentofacial Orthopedics* (revision in review)
- [m3] Alshihayb T.S., Kaye E.A., Zhao Y., Leone C.W., Heaton B. The Impact of Unmeasured Confounding on Periodontitis' Associations with Diabetes (revision in review)
- [m4] Endrighi R, Zhao Y., Hughes R., Kumar D., Borrelli, B. Changes in Physical and Mental Health-Related Quality of Life After Quitting Smoking Among Individuals with Mobility Impairments (in revision)

Doctoral Thesis Committee Members

- 2015 Mingzhu Zhu Doctor of Philosophy in Information Systems
Department of Information Systems,
New Jersey Institute of Technology
Title: *Information Filtering by Multiple Examples*
- 2019 Lina Bahanan Doctor of Science in Dentistry in Dental Public Health
Department of Health Policy and Health Services Research,
Boston University Henry M. Goldman School of Dental Medicine
Title: *The association between food insecurity, food assistance program, and dental caries among US children and adults*
- 2019 Alshihayb Talal Doctor of Science in Dentistry in Dental Public Health
Department of Health Policy and Health Services Research,
Boston University Henry M. Goldman School of Dental Medicine
Title: *An evaluation of potential sources of systematic bias in the estimation of periodontal disease associations*
- 2019 Katherine L. Luskin Doctor of Science in Dentistry
Department of Orthodontics and Dentofacial Orthopedics
Boston University Henry M. Goldman School of Dental Medicine
Title: *Cephalometric variability among siblings: a retrospective study*