Jordan Dworkin, PhD

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Positions & Employment

Metascience Program Lead, Federation of American Scientists — 11/2022 – present

Assistant Professor of Clinical Biostatistics, Departments of Psychiatry and Biostatistics, Columbia University — 7/2020 – 11/2022

Research Scientist V, Research Foundation for Mental Hygiene and the New York State Psychiatric Institute — 7/2020 – 11/2022

Graduate Student Researcher, Penn Statistics in Imaging and Visualization Center, University of Pennsylvania — 7/2018 – 6/2020

Education

University of Pennsylvania, Philadelphia, PA — Aug 2015 – May 2020
    PhD in Biostatistics

Haverford College, Haverford, PA — Aug 2011 – May 2015
    BS in Psychology, High Honors

Selected Publications *(view all)*

Biostatistical methodology

[1] **JD Dworkin**, KA Linn, TD Satterthwaite, A Raznahan, R Bakshi, RT Shinohara. A local group differences test for subject-level multivariate density neuroimaging outcomes. *Biostatistics*, 2021.

[2] **JD Dworkin**, KA Linn, I Oguz, GM Fleishman, R Bakshi, G Nair, PA Calabresi, RG Henry, J Oh, N Papinutto, D Pelletier, W Rooney, W Stern, NL Sicotte, DS Reich, RT Shinohara. An automated statistical technique for counting distinct multiple sclerosis lesions. *American Journal of Neuroradiology*, 2018.

[3] **JD Dworkin**, P Sati, AJ Solomon, D Pham, R Watts, ML Martin, D Ontaneda, MK Schindler, DS Reich, RT Shinohara. Automated integration of multi-modal MRI for the probabilistic detection of central vein sign in white-matter lesions. *American Journal of Neuroradiology*, 2018.

[4] J Roy, KJ Lum, B Zeldow, **JD Dworkin**, VL Re, MJ Daniels. Bayesian nonparametric generative models for causal inference with missing at random covariates. *Biometrics*, 2018.

Clinical and neurological research

[5] J Bernanke, A Luna, L Chang, E Bruno, **JD Dworkin**, J Posner. Structural brain measures among children with and without ADHD in the ABCD Study cohort. *The Lancet Psychiatry*, 2022.

[6] VM Leavitt, **JD Dworkin**, K Buyukturkoglu, CS Riley, M Ritchey. Summary metrics of memory subnetwork functional connectivity alterations in multiple sclerosis. *Multiple Sclerosis Journal*, 2022.

[7] B Rizvi, PJ Lao, AG Chesebro, **JD Dworkin**, E Amarante, JM Beato, J Gutierrez, LB Zahodne, N Schupf, JJ Manly, R Mayeux, AM Brickman. Association of regional white matter hyperintensities with longitudinal Alzheimer-like pattern of neurodegeneration in older adults. *JAMA Network Open*, 2021.

[8] **JD Dworkin**, EM Sweeney, MK Schindler, S Chahin, DS Reich, RT Shinohara. Predicting recovery through estimation and visualization of active and incident lesions. *NeuroImage: Clinical*, 2016.

Computational social science

[9] EG Teich, JZ Kim, C Lynn, SC Simon, P Srivastava, LC Bassett, P Zurn, **JD Dworkin**, DS Bassett. Citation inequity and gendered citation practices in contemporary physics. *Nature Physics*, 2022.

[10] **JD Dworkin**, KA Linn, E Teich, P Zurn, RT Shinohara, DS Bassett. The extent and drivers of gender imbalance in neuroscience reference lists. *Nature Neuroscience*. 2020.

[11] **JD Dworkin**, RT Shinohara, DS Bassett. The emergent integrated network structure of scientific research. *PLoS One*, 2019.

[12] **JD Dworkin**. Network-driven differences in mobility and optimal transitions among automatable jobs. *Royal Society Open Science*, 2019.

Non-Scientific Writing

JD Dworkin. How to boost your research: take a sabbatical in policy. *Nature*, 2024.

JD Dworkin. AI-driven data analysis could exacerbate misaligned incentives in biomedical research. *STAT First Opinion*, 2023.

M Clancy, D Correa, **JD Dworkin**, P Niehaus, C Watney, H Williams. To speed scientific progress, understand how science policy works. *Nature*, 2023.

JD Dworkin, J Elliott. Strengthen science by funding living evidence synthesis. *Stat First Opinion*, 2023.

Funded Grants

[a] **Principal Investigator** – National MS Society: Mapping multi-modal relationships among lesions and clinical outcomes in multiple sclerosis

[b] **Co-Investigator** (PIs Chung, Veenstra-VanderWeele) – NIH P50: Prospective genetic risk evaluation and assessment (PROGRESS) in autism

[c] **Co-Investigator** (PIs Margolis, Rauh) – NIH P20: Environmental contributions to disparities in learning disabilities

[d] **Co-Investigator** (PIs Lugo-Candelas, Ouellet, Posner) – NIH R01: Prenatal cannabis: A fetal neuroimaging study of neurodevelopment

[e] **Co-Investigator** (PIs Talati, Savidge, Margolis) – NIH R01: Gestational SSRI exposure and risk of functional gastrointestinal disorders in children

[f] **Co-Investigator** (PIs Monk, Trumpff, Gyamfi-Bannerman) – NIH R01: Stress phenotypes and preterm birth: Immune and energetic cellular dysregulation and the preventive effect of social support

Software & Programming

LQT. Open-source statistical software, 2021.
Toolbox for conducting probabilistic analysis of the effects of white-matter lesions on structural connectivity, with built-in functionality for processing, analysis, and visualization of brain network data.

mmdt. Open-source statistical software, 2019.
Software for applying the method proposed in the *Biostatistics* publication above [#1], including functions for formatting, analysis, and visualization of neuroimaging data

Teaching & Mentoring

Mentor
Yiyao Li & Yali Zhai – mentor for biostatistics MS practicum (2022)
Aysha Vadukul & Eric Shaker – mentor during BEST Diversity Program (2021)
Jeremy Kidd – statistical mentor for NIH K23 Award (2020 – 2022)

Guest lecturer
Exploring the ethical considerations of big data research
    Haverford College, Psych 321: Revolutions in Psychology, 2020

Fundamentals of web scraping in R
    Univ. of Pennsylvania, BSTA 670: Programming and Computation for Biomedical Data Science, 2019

Teaching assistant
Statistics in Experimental Design and Analysis (2017, 2018) — *University of Pennsylvania*
Experimental Methods and Statistics (2013) — *Bryn Mawr College*

Invited Talks

Networked effects of white matter lesion damage in multiple sclerosis and Alzheimer's disease
    Washington University, Neuroimaging in Health and Disease Seminar, 2022

Networked effects of white matter lesion damage in multiple sclerosis and Alzheimer's disease

Columbia University, Cognitive Neuroscience Seminar, 2021

Gender, racial, and ethnic imbalance in neuroscience reference lists
   Univ. of Minnesota, Masonic Institute for the Developing Brain Seminar, 2020

Statistical techniques for addressing the clinico-radiological paradox in multiple sclerosis
   Columbia University, Biostatistics in Psychiatry Seminar, 2020

Statistical techniques for addressing the clinico-radiological paradox in multiple sclerosis
   Memorial Sloan Kettering Cancer Center, Biostatistics Seminar, 2020

Advances in statistical methods for neuroimaging data analysis in multiple sclerosis
   Haverford & Bryn Mawr Colleges, Bi-College Math Colloquium, 2019

An automated probabilistic algorithm for the detection of central vein sign in multiple sclerosis
   Americas Committee for Treatment and Research in MS (ACTRIMS) Congress, 2019

A local multivariate density-based test for detecting diffuse processes in MRI
   Penn Image Computing and Science Lab Seminar, 2019

An automated probabilistic algorithm for the detection of central vein sign in multiple sclerosis
   Statistical Methods in Imaging (SMI) Conference, 2018

Awards

2021   Biostatistics Junior Faculty Award, National MS Society
2018, 19, 21   Young Investigator Educational Grant, ACTRIMS Congress
2018   Finalist, Blavatnik Family Fellowship
2018   Student Poster Award, Statistical Methods in Imaging Conference
2018   Finalist, Best Poster Presentation, ACTRIMS Congress
2016, 18   Young Investigator Educational Grant, ECTRIMS Congress
2015   Magna Cum Laude, Haverford College
2015   Member Elect, Phi Beta Kappa Academic Honor Society
2015   David Olton '64 Award in Psychology, Haverford College

Service

Advisory Board Member, *The Unjournal* (2023 – present)

Program Committee, the International Conference on the Science of Science and Innovation (2023), the Year of Open Science Culminating Conference (2024)

Scientific Reviewer, the National Multiple Sclerosis Society (grants, 2023); the International Conference on Computational Social Science (abstracts, 2023-24); *eLife, Nature Communications, Communications Physics, Intl. Journal of Biostatistics, Journal of Neuroimaging, Neuroimage Clinical* (papers, 2018-23)