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Positions & Employment

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

- Conducted research on science & technology policy, specifically related to science funding, evidence synthesis, metascience, rigor & reproducibility, open science, and academic-policy engagement
- Led a multi-institution project to crowdsource, refine, publish, and socialize a package of proposals on the "Future of Open Science Policy"
- Co-organized and ran a working group with representatives from 8+ federal science agencies to discuss policy relevant "science of science" research and share insights about innovation in science policy
- Served on two conference program committees, and organized satellite events to encourage policy engagement among academic researchers

Assistant Professor of Clinical Biostatistics (in Psychiatry), Departments of Psychiatry and Biostatistics, Columbia University & the NYS Psychiatric Institute — 7/2020 – 11/2022

- Led and collaborated on research projects spanning biostatistics, neuroimaging, psychiatry, neurology, and computational social science
- Served as PI and managed a grant from the National Multiple Sclerosis Society to conduct research on neuroimaging methods in MS; additionally served as Co-Investigator on 5 collaborative NIH grants
- Supervised master's students and undergraduates on student-led projects; served as statistical mentor for a postdoc's K99/R00 award; and supervised masters–level biostatisticians on collaborative research projects & grants
- Served as a scientific reviewer of grants, publications, and conference papers for a variety of institutions (see "Service" on page 3)
- Developed software packages for imaging statistics, for my own methods and for methods developed by others

Graduate Researcher, Center for Statistics in Imaging, University of Pennsylvania — 8/2015 – 6/2020

- Took courses on biostatistical theory, neuroimaging, machine learning, network science, medical research methods, etc.
- Published on statistical methods and clinical neuroimaging, wrote statistical software, scoped and published side projects related to computational social science and the "science of science"
- Presented my research as talks and posters at statistical and medical conferences

Education

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

Haverford College, Haverford, PA — 2011 – 2015
BS in Psychology, High Honors
Minors in Statistics & Mathematics

Skills

- **Research:** developing and evaluating project designs, identifying knowledge gaps, translating high-level questions into specific analysis plans, synthesizing scientific literature, giving technical presentations
- **Management:** writing and delivering on grants, leading & working on cross-disciplinary teams, mentoring students and trainees, managing project timelines
- **Collaboration:** building relationships with collaborators and stakeholders, communicating across multi-disciplinary teams, writing for scientific and public audiences, designing compelling data visualizations
- **Statistical Analysis:** linear & non-linear modeling, time series analysis, high-dimensional inference, machine learning, dimension reduction, missing data imputation, power analysis, simulation studies
- **Science of Science:** science policy research & analysis, citation mapping, scientific network analysis, author/object disambiguation, metadata scraping and cleaning
- **Software & Tools:** R programming and package development, GitHub, LaTeX, Google Workspace

Selected Research *(view all)*

Neuroimaging methods

[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**, 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.

[3] **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.

Clinical psychiatry & neurology research

[4] 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.

[5] S Chapman, M Rentería, **JD Dworkin**, S Garriga, M Barker, J Avila-Rieger, C Gonzalez, J Joyce, J Vonk, E Soto, J Manly, A Brickman, R Mayeux, S Cosentino. Association of subjective cognitive decline with progression to dementia in a cognitively unimpaired multiracial community sample. *Neurology*, 2022.

[6] 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.

[7] **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

[8] 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.

[9] **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.

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

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

Selected 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.

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*

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

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)

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