

Sarah M. Weinstein, PhD

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smweinst.github.io

Education

PhD, Biostatistics	2023
University of Pennsylvania, Perelman School of Medicine	Philadelphia, PA
MS, Biostatistics	2020
University of Pennsylvania, Perelman School of Medicine	Philadelphia, PA
BA, Statistics and Psychology	2016
Columbia University, Columbia College	New York, NY

Professional Appointments

Assistant Professor of Biostatistics	2023–
Temple University College of Public Health Department of Epidemiology and Biostatistics	Philadelphia, PA
Visiting Instructor of Mathematics and Statistics	2022–2023
Haverford College Department of Mathematics and Statistics	Haverford, PA
Research Data Analyst	2016–2018
Hospital for Special Surgery Department of Anesthesiology, Critical Care and Pain Management	New York, NY

Peer-Reviewed Publications

1. **Weinstein SM**, Vandekar S, Alexander-Bloch A, Raznahan A, Li M, Gur R, Gur R, Roalf D, Park M, Chakravarty M, Baller E, Linn K, Satterthwaite T, Shinohara R. Network Enrichment Significance Testing in Brain-Phenotype Association Studies. *Human Brain Mapping*. 2024; doi.org/10.1002/hbm.26714
2. Leavitt VM, Bae C, Shinohara RT, **Weinstein SM**, Schmidt H, Aoun SM, Solari A, Solomon AJ. Diagnosis Concealment Behaviors and Disclosure Beliefs are Associated with Health and Quality of Life in People with Multiple Sclerosis. *Multiple Sclerosis and Related Disorders*. 2024; doi.org/10.1016/j.msard.2024.105628
3. Chen AA, **Weinstein SM**, Adebimpe A, Gur RC, Gur RE, Merikangas KR, Satterthwaite TD, Shinohara RT, Shou H. Similarity-Based Multimodal Regression. *Biostatistics*. 2023; doi:10.1093/biostatistics/kxad033
4. **Weinstein SM**, Davatzikos C, Doshi J, Linn KA, Shinohara RT, For the Alzheimer's Disease Neuroimaging Initiative. Penalized decomposition using residuals (PeDecURe) for feature extraction in the presence of nuisance variables. *Biostatistics*. 2023;24(3):653-668. doi:10.1093/biostatistics/kxac031
5. Pines A, Keller AS, Larsen B, Bertolero M, Ashourvan A, Bassett DS, Cieslak M, Covitz S, Fan Y, Feczko E, Houghton A, Rueter AR, Saggat M, Shafiei G, Tapera TM, Vogel J, **Weinstein SM**, Shinohara RT, Williams LM, Fair DA, Satterthwaite TD. Development of top-down cortical propagations in youth. *Neuron*. 2023;111(8):1316-1330.e5. doi:10.1016/j.neuron.2023.01.014
6. **Weinstein SM**, Vandekar SN, Baller EB, Tu D, Adebimpe A, Tapera TM, Gur RC, Gur RE, Detre JA, Raznahan A, Alexander-Bloch A, Satterthwaite T, Shinohara R, Park J. Spatially-enhanced clusterwise inference for testing and localizing intermodal correspondence. *NeuroImage*. 2022;264:119712.

7. **Weinstein SM**, Reilly E, Garland N, Zimmerman V, Jacobs D. Impact of a Virtual Wellness Program on Quality of Life Measures for Patients Living With Multiple Sclerosis During the COVID-19 Pandemic. *International Journal of MS Care*. 2022;24(6):282-286.
8. Solomon AJ, Kaisey M, Krieger SC, Chahin S, Naismith RT, **Weinstein SM**, Shinohara RT, Weinschenker BG. Multiple sclerosis diagnosis: Knowledge gaps and opportunities for educational intervention in neurologists in the United States. *Multiple Sclerosis Journal*. 2022;28(8):1248-1256.
9. Pines AR, Larsen B, Cui Z, Sydnor VJ, Bertolero MA, Adebimpe A, Alexander-Bloch AF, Davatzikos C, Fair DA, Gur RC, Gur RE, Li H, Milham MP, Moore TM, Murtha K, Parkes L, Thompson-Schill SL, Shanmugan S, Shinohara RT, **Weinstein SM**, Bassett DS, Fan Y, Satterthwaite TD. Dissociable multi-scale patterns of development in personalized brain networks. *Nature Communications*. 2022;13(1):2647. doi:10.1038/s41467-022-30244-4
10. Leavitt V, Kever A, **Weinstein SM**, Shinohara R, Schmidt H, Aoun S, Solari A, Solomon A. Diagnosis concealment is prevalent in MS, and associated with diagnosis experience. *Multiple Sclerosis and Related Disorders*. 2022;68:104373.
11. Hu F, **Weinstein SM**, Baller EB, Valcarcel AM, Adebimpe A, Raznahan A, Roalf DR, Robert-Fitzgerald TE, Gonzenbach V, Gur RC, Vandekar S, Detre J, Linn K, Alexander-Bloch A, Satterthwaite T, Shinohara R. Voxel-wise intermodal coupling analysis of two or more modalities using local covariance decomposition. *Human Brain Mapping*. 2022;43(15):4650-4663.
12. **Weinstein SM**, Vandekar SN, Adebimpe A, Tapera TM, Robert-Fitzgerald T, Gur RC, Gur RE, Raznahan A, Satterthwaite TD, Alexander-Bloch AF, Shinohara RT. A simple permutation-based test of intermodal correspondence. *Human Brain Mapping*. 2021;42(16):5175-5187. doi:10.1002/hbm.25577
13. **Weinstein SM**, Coates LC, Helliwell PS, Ogdie A, Stephens-Shields AJ. Simulation-based design of pragmatic trials in psoriatic arthritis using propensity scores. *Clinical Trials*. 2021;18(5):541-551.
14. Poeran J, Cozowicz C, Zubizarreta N, **Weinstein SM**, Deiner SG, Leipzig RM, Friedman JI, Liu J, Mazumdar M, Memtsoudis SG. Modifiable factors associated with postoperative delirium after hip fracture repair: an age-stratified retrospective cohort study. *European Journal of Anaesthesiology | EJA*. 2020;37(8):649-658.
15. Pichler L, **Weinstein SM**, Cozowicz C, Poeran J, Liu J, Poultides LA, Saleh JN, Memtsoudis SG. Perioperative impact of sleep apnea in a high-volume specialty practice with a strong focus on regional anesthesia: a database analysis. *Regional Anesthesia & Pain Medicine*. 2019;44(3):303-308.
16. Memtsoudis S, Cozowicz C, Zubizarreta N, **Weinstein SM**, Liu J, Kim DH, Poultides L, Berger MM, Mazumdar M, Poeran J. Risk factors for postoperative delirium in patients undergoing lower extremity joint arthroplasty: a retrospective population-based cohort study. *Regional Anesthesia & Pain Medicine*. 2019;44(10):934-943.
17. Cozowicz C, Poeran J, Zubizarreta N, Liu J, **Weinstein SM**, Pichler L, Mazumdar M, Memtsoudis S. Non-opioid analgesic modes of pain management are associated with reduced postoperative complications and resource utilisation: a retrospective study of obstructive sleep apnoea patients undergoing elective joint arthroplasty. *British journal of anaesthesia*. 2019;122(1):131-140.
18. **Weinstein SM**, Poultides L, Baaklini L, Mörwald E, Cozowicz C, Saleh J, Arrington M, Poeran J, Zubizarreta N, Memtsoudis S. Postoperative delirium in total knee and hip arthroplasty patients: a study of perioperative modifiable risk factors. *British journal of anaesthesia*. 2018;120(5):999-1008.
19. **Weinstein SM**, Baaklini L, Liu J, Poultides L, Cozowicz C, Poeran J, Saleh J, Memtsoudis S. Neuraxial anaesthesia techniques and postoperative outcomes among joint arthroplasty patients: is spinal anaesthesia the best option? *British Journal of Anaesthesia*. 2018;121(4):842-849.

20. **Weinstein SM**, YaDeau JT, Memtsoudis SG. Lack of association between levels and length of intraoperative controlled hypotension and acute kidney injury in total hip arthroplasty patients receiving neuraxial anesthesia. *Regional Anesthesia & Pain Medicine*. 2018;43(7):725-731.

Submitted Manuscripts

1. **Weinstein, SM***, Tu D*, Hu F, Pan R, Zhang R, Vandekar SN, Baller EB, Gur RC, Gur RE, Alexander-Bloch AF, Satterthwaite TD, Park JY. Mapping individual differences in intermodal coupling in neurodevelopment. *bioRxiv*. 2024+ *equal contribution
2. Ulichney V, Sacks B, Duncan A, Helion C, **Weinstein SM**, Giovannetti T, Reilly J. ConversationAlign: A Computational Pipeline for Evaluating Alignment in Natural Language Dyadic Interactions. *PsyArXiv*. 2023+

Honors and Awards

Saul Winegrad Award for Outstanding Dissertation University of Pennsylvania, Biomedical Graduate Studies Program	2023
Graduate Student Travel Award University of Pennsylvania, Biomedical Graduate Studies Program	2021–2023
Overall Flash Talk Award (first place) DBEI Research Day at University of Pennsylvania	2022
Student Paper Award (runner-up) American Statistical Association, Section on Statistics in Imaging	2021
Abstract Award (second place) Society for Anesthesia and Sleep Medicine	2018
Cum Laude Columbia University, Columbia College	2016
Dean's List (every semester) Columbia University, Columbia College	2012–2016

Research Support

National Institute of Mental Health R01MH112847: Inter-Modal Coupling Image Analytics Role: subaward PI (PIs: Shinohara and Satterthwaite)	01/2024 – 06/2025
National Science Foundation Graduate Research Fellowship Program Graduate Research Fellowship in Mathematical Sciences – Biostatistics Role: PI	08/2020 – 05/2023

Research Presentations

Invited Conference Presentations

SMI 2024 (Indianapolis, IN)	05/2024
CMStatistics 2023 (Berlin, Germany)	12/2023
JSM 2023 (Toronto, ON, Canada)	08/2023
OHBM 2023 Neuroimaging Statistics Satellite (Montreal Neurological Institute)	07/2023
JSM 2022 (Washington, DC)	08/2022
JSM 2021 Student Paper Award Session (virtual)	08/2021

Invited Seminars

University of Pittsburgh StatsEye Seminar (virtual)	02/2023
Rutgers University, Department of Epidemiology and Biostatistics (virtual)	12/2022

Thomas Jefferson University, Division of Biostatistics (Philadelphia, PA)	12/2022
Temple University Department of Epidemiology and Biostatistics (Philadelphia, PA)	11/2022
Haverford and Bryn Mawr Bi-College Math/Stat Colloquium (Haverford, PA)	10/2022
Vanderbilt University Statistics in Imaging Collective Seminar (Nashville, TN)	07/2021

Contributed Conference Presentations

JSM 2024 (Portland, OR)	08/2024
ENAR 2023 (Nashville, TN)	03/2023
CMStatistics 2022 (London, UK)	02/2022
OHBM 2022 (Glasgow, Scotland) – poster	06/2022
SMI 2022 (Nashville, TN)	05/2022
ENAR 2022 (Houston, TX)	03/2022
CMStatistics 2021 (London, UK/hybrid)	12/2021
OHBM 2021 (virtual) – poster	06/2021
ENAR 2021 (virtual)	03/2021
JSM 2020 (virtual) – poster	08/2020
ENAR 2020 (virtual)	03/2020
World Congress on Regional Anesthesia and Pain Medicine 2018 (New York, NY)	04/2028
American Society of Anesthesiologists Annual Meeting 2017 (Boston, MA)	10/2017

Student Mentoring

Temple University

Research Assistants

Bin Li, PhD Candidate (Computer Science)	01/2024–
Patrick Augello, MPH (Applied Biostatistics)	01/2024–

Thesis Committee Member

Shiyu Zhang, PhD (Statistics) – <i>External Reader</i>	11/2023
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Haverford College

Alfredo Ortiz de la Rosa, BA (Mathematics) – <i>Thesis Advisor</i>	09/2022 – 05/2023
<i>Recipient of departmental Thesis Prize</i>	
Li Fan, BA (Mathematics and Computer Science) – <i>Thesis Committee Member</i>	10/2022 – 12/2022

Teaching

University of Pennsylvania, Department of Biostatistics, Epidemiology, and Informatics

Guest Lecturer, Statistical Methods in Neuroimaging (BSTA 7510)	2022
Teaching Assistant, Linear and Generalized Linear Models (BSTA 651)	2020, 2021

Columbia University, Department of Statistics

Teaching Assistant, Statistics Help Room	2015 – 2016
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Professional Service

Temple University College of Public Health

Epidemiology PhD Admissions Committee	2023–
Seminar Series Committee, Department of Epidemiology and Biostatistics	2023–
Editorial Board, <i>CommonHealth</i> (Temple College of Public Health Journal)	2023–
Biostatistics Core, Department of Epidemiology and Biostatistics	2023–

Service at Conferences

Session Organizer

CMStatistics 2024 (scheduled - London, UK)
CMStatistics 2023 (Berlin, Germany)
JSM 2022 (Washington, DC)

Statistical Challenges in Interdisciplinary Biomedical Research
Analysis of Spatial Patterns in Neuroimaging
Statistical Advances in Dimension Reduction and Feature
Interpretability in Neuroimaging

Session Chair

Joint Statistical Meetings (JSM) 2024 (Portland, OR)
Statistical Methods in Imaging (SMI) 2022
(Nashville, TN)
ENAR 2021 (virtual)

Statistical Issues and Advances in Modern Trial Design
Statistical Analysis of High-Dimensional Neuroimaging Data

Contributed Papers: Machine Learning

Editorial Roles

Statistical Reviewer: *JAMA Network Open*
Ad-hoc Reviewer: *NeuroImage, Multiple Sclerosis and Related Disorders*

Other Activities

Reviewer, JSM Statistics in Imaging Student Paper Competition	2024
Consultant, DataFest Philly 2024 at Villanova University (Villanova, PA)	04/2024
Alumni Interviewer, Columbia University Alumni Recruitment Committee	2016 – 2018

Professional Memberships

American Statistical Association (ASA)	2019–
Statistics in Imaging Section, Biometrics Section, Philadelphia Chapter	
Eastern North American Region of the International Biometric Society (ENAR)	2019–
Organization for Human Brain Mapping (OHBM)	2020–