Sarah M. Weinstein, PhD

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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   Philadelphia, PA
Department of Epidemiology and Biostatistics

Visiting Instructor of Mathematics and Statistics   2022–2023
Haverford College   Haverford, PA
Department of Mathematics and Statistics

Research Data Analyst   2016–2018
Hospital for Special Surgery   New York, NY
Department of Anesthesiology, Critical Care and Pain Management

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

Research Support

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

Research Presentations

Invited Conference Presentations

CMStatistics 2024 (London, UK)	scheduled 12/2024
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

Vanderbilt University, Department of Biostatistics Seminar (virtual)	scheduled 10/2024

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)	04/2018
American Society of Anesthesiologists Annual Meeting 2017 (Boston, MA)	10/2017

Workshop Presentations

| Temple University Coding Outreach Group (COG) Summer Workshop Series (virtual) | 08/2024 |
| *co-presented with Bin Li, PhD Candidate in Computer Science* | |

Student Mentoring

Temple University

Research Assistants

Zeinah Al-Darsani, PhD Student (Epidemiology)	08/2024–
Bin Li, PhD Candidate (Computer Science)	01/2024–
Patrick Augello, MPH (Applied Biostatistics)	01/2024–09/2024

Thesis Committee Member

| Shiyu Zhang, PhD (Statistics) – *External Reader* | 11/2023 |

| *MPH Mentees* | AY 2023 – 2024 |

Mahmuda Akter, Misha Minesh Christian, Matt Coyle, Tanushree Debnath

Haverford College

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

Teaching

Temple University, Department of Epidemiology and Biostatistics

| Instructor: Multilevel Modeling in Interdisciplinary Research (EPBI 8204) | Fall 2024 |
| Course development: Big Data Analytics for Public Health Research | |

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

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

Columbia University, Department of Statistics

    Teaching Assistant: Statistics Help Room   2015 – 2016

Professional Service

Temple University College of Public Health

Epidemiology PhD Admissions Committee	2023–
Seminar Series Committee, Department of Epidemiology and Biostatistics	2023–
Editorial Board, *CommonHealth* (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)	*Statistical Challenges in Interdisciplinary Biomedical Research*
CMStatistics 2023 (Berlin, Germany)	*Analysis of Spatial Patterns in Neuroimaging*
JSM 2022 (Washington, DC)	*Statistical Advances in Dimension Reduction and Feature Interpretability in Neuroimaging*

Session Chair

Joint Statistical Meetings (JSM) 2024 (Portland, OR)	*Statistical Issues and Advances in Modern Trial Design*
Statistical Methods in Imaging (SMI) 2022 (Nashville, TN)	*Statistical Analysis of High-Dimensional Neuroimaging Data*
ENAR 2021 (virtual)	*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 Development

National Institute of Statistical Sciences (NISS) Writing Workshop for Junior Researchers	2024

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–