

# Jane Liang

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## Education

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- 2022 | **Harvard University**  
**Ph.D. in Biostatistics**  
Dissertation: *Innovative approaches for risk assessment in panel gene testing*  
Advisor: Giovanni Parmigiani  
Committee members: Danielle Braun & Peter Kraft
- 2015 | **University of California, Berkeley**  
**B.A. in Statistics, with Honors**  
Honors thesis: *Comparing dependence measures using simulation studies*  
Supervisor: Haiyan Huang

## Experience

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- Nov. 2024 – Present | **Kaiser Permanente Northern California, Division of Research**  
Pleasanton, CA  
**Research Scientist I/Biostatistician**  
Provide expertise in study design and statistical methods as part of multidisciplinary research teams. Contribute to grants/manuscripts and guide masters-level analysts.
- July 2022 – Oct. 2024 | **Stanford University School of Medicine, Quantitative Sciences Unit**  
Palo Alto, CA  
**Senior Biostatistician**  
Collaborative data science for advancing clinical research in areas including heterogeneous treatment effects in hepatology, retrospective studies of EHR and Medicare data, clinical trials, and diversity in medicine. Contribute to grants/manuscripts and supervise junior biostatisticians.
- Aug. 2017 – May 2022 | **Harvard T.H. Chan School of Public Health, Department of Biostatistics**  
**Dana-Farber Cancer Institute, Department of Data Science**  
Boston, MA  
**Graduate Student Researcher**  
Statistical methodology and software development for clinical risk assessment in panel gene testing.
- Oct. 2016 – July 2017 | **University of Tennessee Health Science Center**  
**Department of Preventive Medicine, Division of Biostatistics**  
Memphis, TN  
**Scientific Research Programmer**  
Write, test, and document software applications based on research requirements; maintain Division's high performance computing systems.

## Publications

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- [1] **Jane W. Liang**, Stephen Knapp, Kristen M. Shannon, Lauren M. Bear, Anne Marie McCarthy, Gregory E. Idos, Christine Hong, Stephen B. Gruber, Danielle Braun, and Giovanni Parmigiani. Evaluating Mendelian risk prediction models that aggregate across genes and cancers. 2024. In preparation.
- [2] Michelle P. Lin, **Jane W. Liang**, Jessica Korobkin, Ula Hwang, Maura Kennedy, and Steven Asch. Characteristics of Medicare beneficiaries with geographic access to geriatric emergency department care. 2024. In preparation.
- [3] Vivek Charu, **Jane W. Liang**, Ajitha Mannalithara, Allison J. Kwong, and W. Ray Kim. Human versus artificial intelligence: Head-to-head comparison of predictive performance of MELD 3.0 and machine learning models. 2024. In preparation.
- [4] Rishi Mediratta, Max K. Clary, **Jane W. Liang**, Kay Daniels, Lulu M. Muhe, Henry C. Lee, Beza Eshetu, and Melkamu Berhane. Remote versus in-person pre-service neonatal resuscitation training: A noninferiority randomised controlled trial in Ethiopia by Dr. Rishi Mediratta. 2024. Submitted to *Resuscitation*.
- [5] Aaron L. Misakian, Carly E. Kelley, Erika A. Sullivan, Julia J. Chang, Gagandeep Singh, Sarah Kokosa, Jonathan Avila, Holly Cooper, **Jane W. Liang**, Bren Botzheim, Meg Quint, Athavi Jeevananthan, Ellenor Chi, Madison Harmer, Laurel Hiatt, Michaela Kowalewski, Benjamin Steinberg, Telisha Tausinga, Hannah Tanner, Tiffany H. Ho, Bayarmaa Mark, Brian Zenger, Sophia Hu, Amanuail Gebregzabheir, Justin M. Penny, Danielle F. Loeb, Tyler Strickland, Sean J. Iwamoto, Micol S. Rothman, Ole-Petter R. Hamnvik, and Danit Ariel. Injectable estradiol use in transgender and gender-diverse individuals in the U.S.: A multicenter retrospective study. 2024. Submitted to *The Journal of Clinical Endocrinology & Metabolism*.
- [6] **Jane W. Liang**, Christie Buonpane, Shengxuan Wang, and Arghavan Salles. Implicit and explicit weight bias among healthcare professionals: a ten-year analysis of Project Implicit's weight IAT. 2024. Submitted to *The Interactive Journal of Medical Research*.
- [7] Morgan S. Levy, Amelia G. Kelly, Alyssa D. Brown, Roohi Jeelani, Hina Talib, **Jane W. Liang**, and Arghavan Salles. Costs of family-building in physicians and medical students. 2024. Submitted to *JAMA Network Open*.
- [8] Joshua Norman, Neil Mehta, W. Ray Kim, **Jane W. Liang**, Scott W. Biggins, Sumeet K. Asrani, Julie Heimbach, Vivek Charu, and Allison J. Kwong. Multi-HCC: A practical model to prioritize patients with hepatocellular carcinoma on the liver transplant waiting list. 2024. To appear in *Gastroenterology*.
- [9] **Jane W. Liang**, Marcello Chang, Sharon L. Stein, and Arghavan Salles. Gender and authorship in Annals of Surgery: A nineteen-year review including the pandemic. *Annals of Surgery Open*, 5(4):e491, 2024. doi: [10.1097/AS9.0000000000000491](https://doi.org/10.1097/AS9.0000000000000491).
- [10] Vivek Charu, **Jane W. Liang**, Ajitha Mannalithara, Allison Kwong, Lu Tian, and W. Ray Kim. Benchmarking clinical risk prediction algorithms with ensemble machine learning: An illustration of the superlearner algorithm for the non-invasive diagnosis of liver fibrosis in non-alcoholic fatty liver disease. *Hepatology*, 80(5):1184–1195, 2024. doi: [10.1097/HEP.0000000000000908](https://doi.org/10.1097/HEP.0000000000000908).
- [11] Linda N. Geng, Hector Bonilla\*, Haley Hedlin\*, Karen B. Jacobson\*, Lu Tian, Prasanna Jagannathan, Phillip C. Yang, Aruna K. Subramanian, **Jane W. Liang**, Sa Shen, Yaowei Deng, Blake J. Shaw, Bren Botzheim, Manisha Desai, Divya Pathak, Yasmin Jazayeri, Daniel Thai, Andrew O'Donnell, Sukanya Mohaptra, Zenita Leang, Gabriella Z.M. Reynolds, Erin F. Brooks,

- Ami S. Bhatt, Robert W. Shafer, Mitchell G. Miglis, Tom Quach, Anushri Tiwari, Anindita Banerjee, Rene N. Lopez, Magdia De Jesus, Lawrence R. Charnas, Paul J. Utz, and Upinder Singh. Nirmatrelvir-ritonavir and symptoms in adults with postacute sequelae of SARS-CoV-2 infection: The STOP-PASC randomized clinical trial. *JAMA Internal Medicine*, 2024. doi: [10.1001/jamainternmed.2024.2007](https://doi.org/10.1001/jamainternmed.2024.2007).
- [12] **Jane W. Liang**, Kurt D. Christensen, Robert C. Green, and Peter Kraft. A framework evaluating the utility of multi-gene, multi-disease population-based panel testing that accounts for uncertainty in penetrance estimates. *NPJ Genomic Medicine*, 9(1):30, 2024. doi: [10.1038/s41525-024-00414-y](https://doi.org/10.1038/s41525-024-00414-y).
- [13] Allison Armstrong, **Jane W. Liang**, Danton Char, Seth A. Hollander, and Kimberly A. Pyke-Grimm. The effect of socioeconomic status on pediatric heart transplant outcomes at a single institution between 2013 and 2022. *Pediatric Transplantation*, 28(2):e14695, 2024. doi: [10.1111/petr.14695](https://doi.org/10.1111/petr.14695).
- [14] Vivek Charu, **Jane W. Liang**, Glenn M Chertow, June Li, Maria E Montez-Rath, Pascal Geldsetzer, Ian H de Boer, Lu Tian, and Manjula Kurella Tamura. Heterogeneous treatment effects of intensive glycemic control on kidney microvascular outcomes and mortality in ACCORD. *Journal of the American Society of Nephrology*, pages 10–1681, 2024. doi: [10.1681/ASN.0000000000000272](https://doi.org/10.1681/ASN.0000000000000272).
- [15] Zoe King, Qiang Zhang, **Jane W. Liang**, Morgan S. Levy, Torie C. Plowden, Roohi Jeelani, Ariela L. Marshall, Rebecca Barnett, Alberto J. Caban-Martinez, Alyssa Brown, Claudia M. Mueller, Cati Brown-Johnson, and Arghavan Salles. Barriers to family building among physicians and medical students. *JAMA Network Open*, 6(12):e2349937–e2349937, 2023. doi: [10.1001/jamanetworkopen.2023.49937](https://doi.org/10.1001/jamanetworkopen.2023.49937).
- [16] Ralph Tayyar\*, Melanie A. Kiener\*, **Jane W. Liang**, Gustavo Contreras, Guillermo Rodriguez-Nava, Alex N. Zimmet, Caitlin A. Contag, Krithika Srinivasan, Karen McIntyre, Aruna Subramanian, John Shepard, Lucy S. Tompkins, Benjamin A. Pinsky, and Jorge L. Salinas. Low infectivity among asymptomatic patients with a positive severe acute respiratory coronavirus virus 2 (SARS-CoV-2) admission test at a tertiary care center, 2020–2022. *Infection Control & Hospital Epidemiology*, pages 1–3, 2023. doi: [10.1017/ice.2023.210](https://doi.org/10.1017/ice.2023.210).
- [17] **Jane W. Liang**, Gregory E. Idos, Christine Hong, Stephen B. Gruber, Giovanni Parmigiani, and Danielle Braun. Statistical methods for Mendelian models with multiple genes and cancers. *Genetic Epidemiology*, 46(7):395–414, 2022. doi: [10.1002/gepi.22460](https://doi.org/10.1002/gepi.22460).
- [18] **Jane W. Liang** and Saunak Sen. Sparse matrix linear models for structured high-throughput data. *The Annals of Applied Statistics*, 16(1):169–192, 2022. doi: [10.1214/21-aos1444](https://doi.org/10.1214/21-aos1444).
- [19] Anne Marie McCarthy, Yi Liu, Sarah Ehsan, Zoe Guan, **Jane W. Liang**, Theodore Huang, Kevin Hughes, Alan Semine, Despina Kontos, Emily Conant, Constance Lehman, Katrina Armstrong, Giovanni Braun, Danielle Parmigiani, and Jimbo Chen. Validation of breast cancer risk models by race/ethnicity, family history and molecular subtypes. *Cancers*, 14(1):45, 2022. doi: [10.3390/cancers14010045](https://doi.org/10.3390/cancers14010045).
- [20] Gavin Lee\*, **Jane W. Liang**\*, Qing Zhang, Theodore Huang, Christine Choirat, Giovanni Parmigiani, and Danielle Braun. Multi-syndrome, multi-gene risk modeling for individuals with a family history of cancer with the novel R package PanelPRO. *eLife*, 10:e68699, 2021. doi: [10.7554/eLife.68699](https://doi.org/10.7554/eLife.68699).
- [21] Yunqi Yang, Christine Hong, **Jane W. Liang**, Stephen Gruber, Giovanni Parmigiani, Gregory Idos\*, and Danielle Braun\*. A likelihood-based approach to assessing frequency of pathogenicity among variants of unknown significance (VUS) in susceptibility genes. *Statistics in Medicine*, 40(3):593–606, 2020. doi: [10.1002/sim.8791](https://doi.org/10.1002/sim.8791).

- [22] **Jane W. Liang**, Robert J. Nichols, and Šaunak Sen. Matrix linear models for high-throughput chemical genetic screens. *Genetics*, 212(4):1063–1073, 2019. doi: [10.1534/genetics.119.302299](https://doi.org/10.1534/genetics.119.302299).
- [23] Alexandra H. Bartlett, **Jane W. Liang**, Jose Vladimir Sandoval-Sierra, Jay H. Fowke, Eleanor M. Simonsick, Karen C. Johnson, and Khyobeni Mozhui. Longitudinal study of leukocyte DNA methylation and biomarkers for cancer risk in older adults. *Biomarker Research*, 7(1):1–13, 2019. doi: [10.1186/s40364-019-0161-3](https://doi.org/10.1186/s40364-019-0161-3).
- [24] Hemant Gujar, **Jane W. Liang**, Nicholas C. Wong, and Khyobeni Mozhui. Profiling DNA methylation differences between inbred mouse strains on the Illumina Human Infinium MethylationEPIC microarray. *PLOS ONE*, 13(3):e0193496, 2018. doi: [10.1371/journal.pone.0193496](https://doi.org/10.1371/journal.pone.0193496).

\* indicates equal contributions

## Selected Presentations

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- [1] “PanelPRO: A general framework for multi-gene, multi-cancer Mendelian risk prediction models” (invited speaker). University of Tennessee Health Science Center (UTHSC) Biostatistics Seminar Series. Virtual, October 18, 2021.
- [2] “Aggregating across genes and cancers in Mendelian risk prediction modeling” (contributed speed talk). Joint Statistical Meetings (JSM) [🔗](#). Virtual, August 12, 2021.
- [3] “Aggregating across genes and cancers in Mendelian risk prediction modeling” (oral presentation) [🔗](#). Dana-Farber/Harvard Cancer Center Celebration of Early Career Investigators in Cancer Research (DF/HCC CECI) [🔗](#). Virtual, January 21, 2021.
- [4] “A general framework for multi-gene, multi-cancer Mendelian risk prediction models” (contributed paper). Eastern North American Region (ENAR) International Biometric Society Spring Meeting [🔗](#). Virtual, March 23, 2020.
- [5] “Sparse matrix linear models for structured high-throughput data” (contributed poster and lightning talk). Integrative Biostatistics Research for Imaging, Genomics & High-throughput Technologies in Precision Medicine (iBRIGHT), MD Anderson Cancer Center [🔗](#). Houston, TX, November 11, 2019.
- [6] “Matrix linear models for high-throughput data” (contributed lightning talk) [🔗](#). JuliaCon, University of California, Berkeley [🔗](#). Berkeley, CA, June 23, 2017.





## Honors

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2021 – 2022	<b>Pedagogy Fellowship</b> <a href="#">🔗</a> Harvard T.H. Chan School of Public Health, Office of Education
Spring 2021	<b>Certificate of Distinction in Teaching</b> Harvard University, Derek Bok Center for Teaching and Learning
2020 – 2021 2019 – 2020	<b>Certificate of Distinction in Teaching (×4)</b> Harvard T.H. Chan School of Public Health, Department of Biostatistics
Jan. 2021	<b>Best Oral Presentation</b> Dana-Farber/Harvard Cancer Center Celebration of Early Career Investigators in Cancer Research (DF/HCC CECI) <a href="#">🔗</a>




- Dec. 2015 | **Phi Beta Kappa**  
University of California, Berkeley
- Dec. 2015 | **Distinction in General Scholarship**  
University of California, Berkeley



## Competitive Travel and Conference Support

- Nov. 2019 | **Integrative Biostatistics Research for Imaging, Genomics & High-throughput Technologies in Precision Medicine (iBRIGHT)**   
MD Anderson Cancer Center
- June 2017 | **JuliaCon**   
University of California, Berkeley
- May 2017 | **50th Annual Barrett Memorial Lectures: Mathematical Foundations of Data Science**   
University of Tennessee, Knoxville
- Feb. 2017 | **Workshop on the Interface of Statistics and Optimization (WISO)**   
Statistical and Applied Mathematical Sciences Institute (SAMSI)
- Oct. 2016 | **Short Course on Systems Genetics**  
The Jackson Laboratory

## Teaching

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- Aug. 2021 – May 2022 | **Harvard T.H. Chan School of Public Health, Office of Education**  
Boston, MA  
**Pedagogy Fellow**   
Developing new course BST 219 (Core Principles of Data Science) and materials on practical/cluster computing; implementing solutions to other educational projects for the school and Department of Biostatistics.
- | **Harvard T.H. Chan School of Public Health, Department of Biostatistics**  
Boston, MA  
**Teaching Fellow**  
Leading lab sections, designing course materials, holding office hours, monitoring online discussion boards, grading assignments, and supporting master's, doctoral, and clinical students from diverse fields.
- Spring 2021 | BIOSTAT 231/BST 231: Statistical Inference I (remote)
- Fall 2020 | BST 260: Introduction to Data Science  (remote)
- Spring 2020 | BST 263: Statistical Learning (in-person and remote)
- Fall 2019 | BST 260: Introduction to Data Science  (in-person)
- Spring 2019 | BST 210: Applied Regression Analysis (in-person)

	<b>McGoldrick Professional Development Program in Public Health</b>  <b>Harvard T.H. Chan School of Public Health, University of KwaZulu-Natal – Pietermaritzburg &amp; the ARISE network</b> Boston, MA <b>Teaching Assistant</b> Training researchers from low-and middle-income countries in quantitative methods and building a collaborative network in sub-Saharan Africa.
Feb. 2021	Health Data Science (remote)
	<b>Harvard T.H. Chan School of Public Health, Department of Biostatistics</b> Boston, MA <b>Curriculum Fellow</b> Designing course materials, including exams, homework, and lab assignments.
Fall 2020	BST 260: Introduction to Data Science 

## Software

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**R:** [PanelPRO](#)  
**Julia:** [MatrixLMnet](#), [MatrixLM](#), [GeneticScreens](#)

## Service

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**Referee:** *Cancer Epidemiology, Biomarkers & Prevention; PLOS ONE*

## Skills

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**High proficiency:** R, Julia, Python, LaTeX, distributed version control (Git, Mercurial), high performance cluster computing, Linux environments  
**Some proficiency:** C++, STATA, MATLAB