SUMMER S. HAN

Address: Quantitative Sciences Unit
Stanford University School of Medicine
3180 Porter Dr., Office 118
Stanford, CA 94304.

Phone: (650) 724-5997
Email: summer.han@stanford.edu

RESEARCH OVERVIEW

My research focuses on developing novel computational frameworks to optimize personalized cancer screening and surveillance using real-world data. To accurately capture evolving disease trajectories, we develop dynamic prediction models that utilize high-dimensional longitudinal data to continuously update survival predictions, account for competing risks, and estimate complex time-dependent effects at scale. Because these predictive frameworks require comprehensive patient histories, my lab develops advanced integration methods to overcome data fragmentation, missingness, and loss to follow-up. By linking diverse electronic health record (EHR) systems and state cancer registries, we construct robust, generalizable real-world databases. To further enrich these resources, we are applying cutting-edge large language models (LLMs) and agentic AI to extract critical insights from unstructured clinical notes, thereby enhancing our decision-support systems and accelerating precision medicine. Ultimately, we translate these integrated pipelines into clinical practice and public health. We implement our validated LLM frameworks directly into EHR workflows to automate cancer screening reminders, while simultaneously incorporating our real-world data-based findings into microsimulation models to conduct counterfactual and cost-effectiveness analyses that guide national health policy.

ACADEMIC TRAINING

Ph.D. Statistics, Yale University, 2009
Dissertation: Likelihood ratio tests in variance components models for identifying genetic risk factors for complex disorders using multiple quantitative traits
Advisor: Joseph T. Chang
M.A. in Statistics, Yale University, 2004
M.S. in Economics, Yonsei University, Seoul, Korea, 2003
B.A. in Journalism, Ewha University, Seoul, Korea, 2000

EMPLOYMENT

Sep 2022- Present	Associate Professor, Department of Neurosurgery, Stanford University
Sep 2022- Present	Associate Professor, Department of Medicine, Stanford University
Sep 2022 - Present	Associate Professor, Department of Epidemiology and Population Health (by courtesy)
Nov 2021-Aug 2022	Assistant Professor, Department of Epidemiology and Population Health (by courtesy)
Dec 2015-Dec 2019	Assistant Professor, Departments of Medicine, Stanford University
Sep 2012 -Nov 2015	Research Associate, Department of Radiology, Stanford University

Aug 2009-Aug 2012 Research Fellow, Biostatistics Branch, Division of Cancer Epidemiology and Genetics, National Cancer Institute, National Institutes of Health
(Mentors: Nilanjan Chatterjee, Ph.D. and Philip Rosenberg, Ph.D.)

AWARDS

Section Highlights:

- **Translational AI Leadership:** Awarded the 2026 Stanford Center for Digital Health Grant to directly translate and integrate our validated LLM frameworks (Luo et al., 2025, npj Digital Medicine) into Stanford Healthcare's clinical workflow. This represents a major translational milestone, leveraging Agentic AI to extract unstructured smoking histories from EHRs to significantly improve lung cancer screening eligibility.
- **Sustained Research Excellence:** Recipient of the prestigious National Cancer Institute (NCI) MERIT Award (R37) for Early-Stage Investigators (2018), demonstrating exceptional, long-term NIH recognition and support for innovative epidemiological methodologies.
- **Excellence in Mentorship & Education:** Honored with the 2023 Teaching Award in Biomedical Informatics Research (Stanford Department of Medicine), recognizing a sustained commitment to educational excellence and the successful mentorship of the next generation of biomedical data scientists.

April 2026	2026 Stanford Center for Digital Health Grant Award " *Agentic AI for Lung Cancer Screening in the Electronic Health Records: Accurate Eligibility from Unstructured Smoking Histories*"
June 2024	Stanford Cancer Institute Health Equity Impact Grant Award "*Socioeconomic and neighborhood factors in risk stratification of second primary lung cancer in California and Hawaii*"
April 2024	Neurosurgery Research Seed Grant Award "*Applying Novel Machine Learning and Neural Network Models to Understand Real-Time Physical Activity Data of Patients Undergoing Elective Spine Surgery in the SpineTrak Randomized Controlled Trial*"
Aug 2023	The Teaching Award in Biomedical Informatics Research in Department of Medicine
Aug 2018	National Cancer Institute MERIT Award for Early-Stage Investigator (R37)
Jan 2017	Stanford Spectrum Pilot Award, Stanford School of Medicine "Population-based Health Information Exchange for Cancer Prevention: Surveillance for cancer-related infections"
Aug 2012	Research Fellowship, Division of Cancer Epidemiology and Genetics, National Cancer Institute
Aug 2008	Paper Competition Award, Title: "A note on the asymptotic null distribution of likelihood-ratio tests for multivariate genetic linkage in variance components models" Joint statistical Meetings of the American Statistical Association, Institute of Mathematical Statistics, and International Biometric Society
June 2008	Yale Graduate Student Assembly Conference Travel Fund awards
2008 – 2009	Yale Graduate School Dissertation Fellowship
2006 – 2008	Yale Graduate School Teaching Fellowship
2004 – 2006	Yale Graduate School Scholarship

ADMINISTRATIVE LEADERSHIP ROLES AT STANFORD

Jan 2023 - Present	Director of Cancer Data Science Shared Resources Core Stanford Cancer Institute *New Roles and Initiatives Featured in Stanford Cancer Institute News*: "*The Bridge Between Cancer Patient Data and Real-World Research*" https://med.stanford.edu/cancer/about/news/the-bridge-between-cancer-patient-data-and-real-world-research.html
Sep 2015- Present	Lead of the Neurosurgery Data Science and Research Infrastructure Section of Biostatistics, Quantitative Sciences Unit, Division of Biomedical Informatics in the Department of Medicine
June 2025 - Present	Member, Search Committee for Quantitative Sciences Unit & Department of Medicine Faculty, Stanford University
Sep 2024 – Present	Member, Search Committee for Quantitative Sciences Unit & Emergency Medicine Faculty, Stanford University
Sep 2018 – August 2020	Member, Search Committee for Quantitative Sciences Unit & Department of Pathology Faculty, Stanford University

PEER REVIEWED BIBLIOGRAPHY (Original Research)

(Total 137; published 137; in press 0; total since appointment 115; total lead authorship since appointment 32)

* Lead authorship

*1. Choi, E., Luo, S., Ding, V.Y., Graber-Nadich, A., Wu, J.T., Popat, R., Cheng, I., Neal, J.W., Wakelee, H.A., and ***Han, S.S***. (2026) Air Pollution and the Risk of Second Primary Lung Cancer Among Lung Cancer Survivors: The Prospective UK Biobank Cohort Study. ***British Journal of Cancer***

*2. Terashima, R., Gunturkun, F., Nieda, G., Fan, X., Fan, J., Khan, A., Su, C.C., Ding, V.Y., Luo, I., Satoyoshi, M., Bhat, A., Henry, S.M., Odden, M., Kurian, A.W., Neal, J.W., Wakelee, H.A., Wu, J.T., and ***Han, S.S***. (2026) Evaluating Tumor Burden as a Predictive Biomarker for EGFR TKI Therapy in Advanced Non-small Cell Lung Cancer. ***JCO Precision Oncology***

*3. Su, C., Ding, VD., Luo, S.J., ten Haaf, K., Wu, J.T. Aredo, J.V., Wilkens, L.R., Freedman, N.D., Backhus, L.M.,Leung, A.N., Meza R.,, Lui, N. S., Haiman, C.A., Park, S.L., LLe Marchand, L., Neal, J.W., Cheng, I., Wakelee, H.A., Tammemägi, M.C., Choi, E. and ***Han, S.S.,*** (2026) Impact of Using Smoking Duration instead of Pack-years as Eligibility Criteria for National Lung Cancer Screening Guidelines to Reduce Racial and Ethnic Disparities in Screening Eligibility. ***Annals of Internal Medicine,*** *179 (2), 196-206*

- Media coverage, "*Rethinking Lung Cancer Screening To Reduce Disparities*": https://med.stanford.edu/cancer/about/news/rethinking-lung-cancer-screening-to-reduce-disparities.html

*4. Luo, I., Graber-Naidich, A., Zhang, M., Kaushik, R., Nieda, G., Chen, T., Gu, B., Choi, E., Ding, V., Gunturkun, F., Satoyoshi, M., Bhat, A., Lee, T., Su, C., Ellis-Caleo, T.J., Henry, A.S., Desai, M., Gomez, S., Backhus, L.M., Lui, N.S., Leung, A., Neal, J.W., Kurian, A.W., Langlotz, C.P., Wakelee, H.A., Liang, S.Y., Khan, A., and ***Han, S.S.*** (2026) Leveraging Large Language Models to Extract

Longitudinal Smoking History from Clinical Notes in Electronic Health Records for Lung Cancer Surveillance Evaluation. ***npj Digital Medicine,*** 8 (1), 731

5. Cao, P., De Nijs, K., Lee, J., Jeon, J., De Koning, H.J., Plevritis, S.K., Ten Haaf, K., [#]***Han, S.S***. and Meza, R., (2026) Performance of smoking duration-based lung cancer screening eligibility criteria: a comparative modeling study. JNCI: ***Journal of the National Cancer Institute***, p.djag018. [#]Co-designed study, oversaw the analysis implementation, and provided principal interpretation of findings. Edited manuscript.

6. Wu, J.T., Lin, N., Adams, S.V., Asch, S., Zeliadt, S., Harris, A.H., [#]***Han, S.S***. and Backhus, L., 2026. Provider Follow-Up and Adherence to Imaging Surveillance Recommendations for Lung Cancer Survivors in a Nationwide Health Care System. ***JCO Oncology Practice***, pp.OP-25. [#]Oversaw the analysis implementation, and provided principal interpretation of findings. Edited manuscript.

*7. Khan, A., Choi, E., Su, C., Graber-Naidich, A., Henry, S., Satoyoshi, M. L., Bhat, A., Kurian, A. W., Liang, S.-Y., Neal, J., Gould, M., Leung, A., Wakelee, H. A., Backhus, L. M., Langlotz, C., Wu, J., & ***Han, S. S.*** (2025). Automatic abstraction of computed tomography imaging indication using natural language processing for evaluation of surveillance patterns in long-term lung cancer survivors. ***JCO Cancer Clinical Informatics***, 9. https://doi.org/10.1200/CCI-24-0027

* 8. Fries, A.H., Choi, E. and ***Han, S.S***., (2025) Penalized landmark supermodels (penLM) for dynamic prediction for time-to-event outcomes in high-dimensional data. ***BMC Medical Research Methodology***, 25(1), p .22.

9. Ransohoff, J.D., Lewinsohn, R.M., Dickerson, J., Luo, I., Satoyoshi, M., Ritter, V., Chavez, R., Wheeler, A.J., Liang, S.Y., Kenkare, P. and Gomez, S.L., [#]***Han, S.S***., Kurian, A.W., (2025) Endocrine Therapy Interruption, Resumption, and Outcomes Associated with Pregnancy After Breast Cancer. ***JAMA oncology***. [#]Designed study, oversaw the implementation of the analysis, and provided principal interpretation of findings. Edited manuscript.

10. Kim, J., Chen, M.L., Rezaei, S.J., Hernandez-Boussard, T., Chen, J.H., Rodriguez, F., [#]***Han, S.S***., Lal, R.A., Kim, S.H., Dosiou, C. and Seav, S.M., (2025) Artificial intelligence tools in supporting healthcare professionals for tailored patient care. ***npj Digital Medicine***, 8(1), p.210. [#]Oversaw the implementation of the analysis and provided principal interpretation of findings. Edited manuscript

11. Huang, R.J., Wichmann, I.A., Su, A., Sathe, A., Shum, M.V., Grimes, S.M., Meka, R., Almeda, A., Bai, X., Shen, J. and Nguyen, Q., Luo, I., [#]***Han, S.S***., Hwang J., and Ji, H., (2025) A spatial transcriptomic signature of 26 genes resolved at single-cell resolution characterizes high-risk gastric cancer precursors. ***npj Precision Oncology***, 9(1), p.52. [#]Oversaw the implementation of the analysis and provided principal interpretation of findings. Edited manuscript

12. Park, D.J., Voruganti, H., Annagiri, S., Shaghaghian, E., Hori, Y.S., Persad, A.R., Yoo, K.H., Abu-Reesh, D., Lam, F.C., Tayag, A. and Ustrzynski, L., Emrich, S. C., [#]***Han, S. S***., Gu, X., Byun, J., Rahimy, E., Pollom, E. L., Soltys, S. G., Gephart, M. H., Li, G., & Chang, S. D. (2025) Efficacy and Safety of CyberKnife Stereotactic Radiosurgery for Occipital Condyle Metastasis. ***Neurosurgery Practice***, 6(4), p.e000169. [#]Provided principal interpretation of findings. Edited manuscript

13. Park, D. J., Voruganti, H., Annagiri, S., Shaghaghian, E., Hori, Y. S., Persad, A. R., Yoo, K. H., Abu-Reesh, D., Lam, F. C., Tayag, A., Ustrzynski, L., Emrich, S. C., [#]***Han, S. S***., Gu, X., Byun, J., Rahimy, E., Pollom, E. L., Soltys, S. G., Gephart, M. H., Li, G., & Chang, S. D. (2025). Efficacy and safety of

CyberKnife stereotactic radiosurgery for occipital condyle metastasis. ***Journal of Neurosurgery*** [#]Provided principal interpretation of findings. Edited manuscript

14. Randle, R.J., Adams, S.V., Esfahanimonfared, Z., Lin, N., Wu, J., Leung, A., Asch, S.M., Zeliadt, S., Sox-Harris, A., [#]***Han, S***. and Backhus, L.M., (2025) Adherence to Posttreatment Surveillance Guidelines in Non–Small Cell Lung Cancer: Retrospective Cohort Study. ***JMIR cancer***, 11, p.e76515. [#]Co-designed study, oversaw the analysis implementation, and provided principal interpretation of findings. Edited manuscript.

15. Kattaa, A.H., Park, D.J., Persad, A.R., Hori, Y.S., Kassu, R.A., Nasta, S.R., Voruganti, H., Akhavan-Sigari, A., Lam, F.C., AbuReesh, D. and [#]***Han, S.S***., Li, G., & Chang, S. D (2025). Treatment outcomes for hypoglossal schwannomas: insights from a single-institution experience and literature review. ***Journal of Neurosurgery***, 1(aop), pp.1-11. [#]Provided principal interpretation of findings. Edited manuscript

16. Braithwaite, D., Karanth, S. D., Bian, J., Meza, R., Jeon, J., Tammemagi, M., Wheeler, M., Cao, P., Rackauskas, M., Shrestha, P., Yoon, H.-S. A., Kitts, A. B., Verma, H., Blair, M. C., Chen, A., Das, D., Lou, X., Wu, Y., [#]***Han, S***., Hochhegger, B., Guo, Y., & Gould, M. K. (2025). Protocol for an observational cohort study integrating real-world data and microsimulation to assess imaging surveillance strategies in stage I–IIIA NSCLC patients in OneFlorida+. ***BMJ Open***, 14(3), e083049. [#]Provided principal interpretation of findings

17. Taiwo, R., Harary, P. M., Trinh, T. T., Granucci, M., Bertrand, S., Carlson-Clarke, B., [#]***Han, S.S***., Bharani, K., Nagpal, S., & Hayden Gephart, M. (2025). Adaptive cohort design and LAT1 expression scale: study protocol for a Phase 2a trial of QBS72S in breast cancer brain metastases. ***BMC cancer***, *25*(1), 1316. [#]Designed study, oversaw the implementation of the analysis, and provided principal interpretation of findings. Edited manuscript.

18. Hodan, R., Ritter, V., [#]***Han, S.S***., Narayan, S., Satoyoshi, M. and Kurian, A.W., 2025. Genetic testing referral and germline pathogenic variants in patients with breast cancer and another non-breast cancer. ***Cancer Genetics***. [#]Designed study, oversaw the implementation of the analysis, and provided principal interpretation of findings. Edited manuscript.

19. Touponse, G.C., Li, G., Tai, J.W., Rodrigues, A.J., Granucci, M., Burnside, G., Bhambhvani, H.P., ***Han, S.S***., Ji, H.P. and Gephart, M.H., 2025. Brain Metastases from Esophageal Cancer: A Retrospective Review from a Single Institution. ***World Neurosurgery***, 193, pp.964-974. [#]Oversaw the implementation of the analysis and provided principal interpretation of findings. Edited manuscript

20. Gauden, Andrew J., Jason L. Choi, Ingrid Luo, ***Summer S. Han***, and Gary K. Steinberg. "Outcomes of brainstem cavernous malformation resection, without and with use of a flexible omnidirectional carbon dioxide laser: a single-surgeon series of 277 surgical procedures." ***Journal of Neurosurgery*** 1, no. aop (2025): 1-8. [#]Designed study, oversaw the implementation of the analysis, and provided principal interpretation of findings. Edited manuscript.

21. Lin N, Wu J, Adams S, Asch S, Zeliadt S, Sox-Harris A, [#]***Han S***, Backhus L. Surgeon specialty and surveillance after resection for non–small cell lung cancer. ***JTCVS open***. 2024 Dec 1;22:470-5.[#]Oversaw the implementation of the analysis and provided principal interpretation of findings. Edited manuscript

* 22. Choi E., Luo, S.J. Ding, V.Y., Wu, J.T., Kumar, A.V., Wampfler, J., Tammemägi, M.C., Wilkens, L.R., Aredo, J.V., Backhus, L.M., Neal, J.W.,Leung, A. N., Freedman, N.D., Hung, R. J., Amos, C.I., Le

Marchand, L., Cheng, I., Wakelee, H.A., Yang, P., and ***Han, S.S***. (2024) Risk Model-Based Management for Second Primary Lung Cancer Among Lung Cancer Survivors Through A Validated Risk Prediction Model. ***Cancer***

* 23. Graber-Naidich, A., Choi, E., Wu, J.T., Ellis-Caleo, T.J., Neal, J., Wakelee, H.A., Kurian, A.W. and ***Han, S.S***., (2024) Smoking and the Risk of Second Primary Lung Cancer Among Breast Cancer Survivors from the Population-Based UK Biobank Study. ***Clinical Lung Cancer***, 25(8), pp.705-711.

* 24. Choi, E., Hua, Y., Su, C.C., Wu, J.T., Neal, J.W., Leung, A.N., Backhus, L.M., Haiman, C., Le Marchand, L., Liang, S.Y., Wakelee, H.A., Cheng, I., ***Han, S.S***. (2024) Racial and ethnic differences in second primary lung cancer risk among lung cancer survivors. ***JNCI Cancer Spectrum***, 8(5), p.pkae072.

25. Wang, Y.R.J., Wang, P., Yan, Z., Zhou, Q., Gunturkun, F., Li, P., Hu, Y., Wu, W.E., Zhao, K., Zhang, M., Vogel, H., Lv, H., ***Han, S.S***., Tian, L., and Gong, J., (2024) Advancing presurgical non-invasive molecular subgroup prediction in medulloblastoma using artificial intelligence and MRI signatures. ***Cancer Cell***, 42(7), pp.1239-1257. #Oversaw the implementation of the analysis and provided principal interpretation of findings. Edited manuscript

26. Malacon, K., Touponse, G., Yoseph, E., Li, G., Wei, P.J., Kicielinski, K., Massie, L., Williamson, T., ***Han, S.S***, and Zygourakis, C., (2024) Gender differences in electronic health record usage among surgeons. ***JAMA Network Open***, 7(7), pp.e2421717-e2421717. #Oversaw the implementation of the analysis and provided principal interpretation of findings. Edited manuscript

27. Wu, J.T.Y., Corrigan, J., Su, C., Dumontier, C., La, J., Khan, A., Arya, S., Harris, A.H., Backhus, L., Das, M. Do, N.V., ***Han, S.S***., Kelley, M., and Filmore, N. R., 2024. The performance status gap in immunotherapy for frail patients with advanced non-small cell lung cancer. ***Cancer Immunology, Immunotherapy***, 73(9), p.172. #Oversaw the implementation of the analysis and provided principal interpretation of findings. Edited manuscript

28. Huang, R.J., Huang, E.S., Mudiganti, S., Chen, T., Martinez, M.C., Ramrakhiani, S., #***Han, S.S***., Hwang, J.H., Palaniappan, L.P. and Liang, S.Y., 2024. Risk of Gastric Adenocarcinoma in a Multiethnic Population Undergoing Routine Care: An Electronic Health Records Cohort Study. ***Cancer Epidemiology, Biomarkers & Prevention,*** pp.OF1-OF10. #Oversaw the implementation of the analysis and provided principal interpretation of findings. Edited manuscript

29. Gonzalez-Suarez, A.D., Maldaner, N., Tang, M., Fatemi, P., Leung, C., Desai, A., Tomkins-Lane, C., ***Han, S.S***. and Zygourakis, C., 2024. Determining critical monitoring periods for accurate wearable step counts in patients with degenerative spine disorders. ***Scientific Reports***, 14(1), p.19988. #Oversaw the implementation of the analysis and provided principal interpretation of findings. Edited manuscript

30. Touponse, G., Malacon, K., Li, G., Yoseph, E., ***Han, S.S***. and Zygourakis, C., 2024. Provider's exposure to diversity contributes to socioeconomic disparities in lumbar and cervical fusion outcomes. ***World Neurosurgery***: X, 23, p.100382. #Oversaw the implementation of the analysis and provided principal interpretation of findings. Edited manuscript

31. Ten Haaf, K., de Nijs, K., Simoni, G., Alban, A., Cao, P., Sun, Z., Yong, J., Jeon, J., Toumazis, I., ***Han, S.S.*** and Gazelle, G.S., 2024. The Impact of Model Assumptions on Personalized Lung Cancer Screening Recommendations. ***Medical Decision Making***, 44(5), pp.497-511. #Oversaw the implementation of the analysis and provided principal interpretation of findings. Edited manuscript

32. Lin, N., Wu, J., Adams, S., Asch, S., Zeliadt, S., Sox-Harris, A., ***Han, S.S***, and Backhus, L., 2024. Surgeon specialty and surveillance after resection for non–small cell lung cancer. ***JTCVS open***, 22, pp.470-475. #Oversaw the implementation of the analysis and provided principal interpretation of findings. Edited manuscript

*33. Choi, E., Ding, V.Y., Luo, S.J., ten Haaf, K., Wu, J.T. Aredo, J.V., Wilkens, L.R., Freedman, N.D., Backhus, L.M.,Leung, A.N., Meza R.,, Lui, N. S., Haiman, C.A., Park, S.L., LLe Marchand, L., Neal, J.W., Cheng, I., Wakelee, H.A., Tammemägi, M.C., and ***Han, S.S.,*** (2023) Risk Model–Based Lung Cancer Screening and Racial and Ethnic Disparities in the US. ***JAMA Oncology***

- **Invited editorial:** JAMA Oncology https://jamanetwork.com/journals/jamaoncology/article-abstract/2811048
- **Media coverage "*Lung cancer screening guidelines perpetuate racial disparities, Stanford-led study finds*"** https://med.stanford.edu/news/all-news/2023/10/race-disparities-lung-cancer-screening.html https://medicalxpress.com/news/2023-10-lung-cancer-screening-guidelines-perpetuate.html

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- **Media coverage "*Lung cancer survivors who have never smoked have a high risk of developing new cancers*"**: https://med.stanford.edu/cancer/about/news/never-smoked.html

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- **Media coverage**: https://www.medpagetoday.com/resource-centers/nsclc-contemporary-insights/recurrent-metastatic-nsclc-vs-de-novo-stage-iv-do-survival-rates-compare/4950

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113. Murovic, J., Ding, V., ***Han, S.S***.#, Adler, J.R. and Chang, S.D., 2017. Impact of CyberKnife Radiosurgery on Median Overall Survival of Various Parameters in Patients with 1-12 Brain Metastases. ***Cureus***, 9(12). #Led study design and analysis. #Oversaw implementation of analysis. Provided principal interpretation of findings. Authored Methods and Results sections of manuscript.

114. Murovic, J., Ding, V., ***Han, S.S***.#, Adler, J.R. and Chang, S.D., 2017. Impact of CyberKnife Radiosurgery on Overall Survival and Various Parameters of Patients with 1-3 versus≥ 4 Brain Metastases. ***Cureus***, 9(10). *Led study design and analysis. #Oversaw implementation of analysis. Provided principal interpretation of findings. Authored Methods and Results sections of manuscript.

115. ten Haaf, K., Jeon, J., Tammemägi, M.C., ***Han, S.S***.#, Kong, C.Y., Plevritis, S.K., Feuer, E.J., de Koning, H.J., Steyerberg, E.W. and Meza, R., 2017. Risk prediction models for selection of lung cancer screening candidates: A retrospective validation study. ***PLoS medicine***, 14(4), p.e1002277. #Co-designed study and analytic plans and provided interpretation of findings. Edited manuscript.

* 116. ***Han, S. S***, P. S. Rosenberg, A. Ghosh, M.T. Landi, N.E. Caporaso, and N. Chatterjee, 2015. An Exposure-Weighted Score Test for Genetic Associations Integrating Environmental Risk Factors. ***Biometrics,*** DOI: 10.1111/biom.12328.

117.* ***Han, S. S.*&**,** J. D. Figueroa&, M. Garcia-Closas, D. Baris, E. J. Jacobs, M. Kogevinas, M. Schwenn, N. Malats, A. Johnson & M. P. Purdue, 2014. Genome-wide interaction study of smoking and bladder cancer risk. ***Carcinogenesis*****,** bgu064. &Equal contribution.

118. de Koning, H.J., Meza, R., Plevritis, S.K., Ten Haaf, K., Munshi, V.N., Jeon, J., Erdogan, S.A., Kong, C.Y., ***Han, S.S***.#, van Rosmalen, J. and Choi, S.E., 2014. Benefits and harms of computed tomography lung cancer screening strategies: a comparative modeling study for the US Preventive

Services Task Force. ***Annals of internal medicine***, 160(5), pp.311-320. [#]Developed a microsimulation model and evaluated various CT screening strategies as the lead statistician from the Stanford group, without which this comparative effectiveness analysis report (from the Cancer Intervention and Surveillance Modeling Network (CISNET) consortium) based on five independent simulation models across different institutes could not have been published. This collaborative work contributed to the decision- making of the USPSTF's recommendation update on the national lung screening guidelines in 2014.

119. Meza, R., ten Haaf, K., Kong, C.Y., Erdogan, A., Black, W.C., Tammemagi, M.C., Choi, S.E., Jeon, J., ***Han, S.S***.[#], Munshi, V. and van Rosmalen, J., 2014. Comparative analysis of 5 lung cancer natural history and screening models that reproduce outcomes of the NLST and PLCO trials. ***Cancer***, 120(11), pp.1713-1724. [#]Led analysis for calibration and validation of the Stanford microsimulation model as the lead statistician of the Stanford Group using the largest lung screening data from the National Lung Screening Trial (NLST) and the Prostate, Lung, Colorectal and Ovarian (PLCO) Cancer Screening Trial (PLCO), without which this comparative analysis report could not have been published. This collaborative work based on five independent microsimulation models across different institutes contributed the decision-making of the USPSTF's recommendation update on the national lung screening guidelines in 2014.

120. McMahon, P. M., R. Meza, S. K. Plevritis, W. Black, M. Tammemagi, A. Erdogan, K. T. Haaf, W. Hazelton, T. Holford, J. Jeon, L. Clarke, C. Y. Kong, S. E. Choi, V. Munshi, ***S. S. Han***[#], P. Pinsky, S. Moolgavkar, H. d. Koning & E. Feuer, 2014. Comparing benefits from many possible computed tomography lung cancer screening programs: extrapolating from the National Lung Screening Trial using comparative modeling. ***PloS one***, 9(6), p.e99978. [#]Led analysis of 576 CT screening strategies by developing a microsimulation model as the led statistician from the Stanford group.

121. Tan, D., S. J. Horning, R. T. Hoppe, R. Levy, S. A. Rosenberg, B. M. Sigal, R. A. Warnke, Y. Natkunam, ***S. S. Han***[#], A. Yuen, S. K. Plevritis & R. H. Advani, 2013. Improvements in Observed and Relative Survival in Follicular Grade 1-2 Lymphoma Over Four Decades: The Stanford University Experience. ***Blood***. [#]Led analysis for running Cox proportional hazards model to characterize the difference in overall survival by treatment therapies; Provided principal interpretations and authored Methods and Results sections of manuscript.

122. Gu F, Pfeiffer RM, Bhattacharjee S, ***Han SS*** [#], Taylor PR, Berndt S, Yang H, Sigurdson AJ, Toro J, Mirabello L, Greene MH. Common genetic variants in the 9p21 region and their associations with multiple tumours. British journal of cancer. 2013 Apr;108(6):1378. [#]Provided principal analytic plans and conducted analysis. Provided interpretations. Edited manuscript.

123. Garcia-Closas, M., N. Rothman, J. D. Figueroa, L. Prokunina-Olsson, ***S. S. Han***[#], D. Baris, E. J. Jacobs, N. Malats, I. De Vivo, D. Albanes, M. P. Purdue, S. Sharma, Y.-P. Fu, M. Kogevinas, Z. Wang, W. Tang, A. Tardón, C. Serra, A. Carrato, R. García-Closas, J. Lloreta, A. Johnson, M. Schwenn, M. R. Karagas, A. Schned, G. A. Jr, R. G. III, A. Black, S. M. Gapstur, M. Thun, W. R. Diver, S. J. Weinstein, J. Virtamo, D. J. Hunter, N. Caporaso, M. T. Landi, A. Hutchinson, L. Burdett, K. B. Jacobs, M. Yeager, J. F. F. Jr, S. J. Chanock, D. T. Silverman & N. Chatterjee (2013) Common genetic polymorphisms modify the effect of smoking on absolute risk of bladder cancer. ***Cancer research***, 73, 2211-2220. [#]Led analysis by applying a likelihood-ratio test for detecting gene-environment interaction under additive risk models; Provided principal interpretations; Authored the Methods section of the manuscript.

124. Karami, S., G. Andreotti, S. Koutros, K. H. Barry, L. E. Moore, ***S. S. Han***[#], J. A. Hoppin, D. P. Sandler, J. H. Lubin, L. Burdette, J. Yuenger, M. Yeager, L. B. Freeman, A. Blair & M. C. R. Alavanja (2013) Pesticide exposure and inherited variants in vitamin D pathway genes in relation to prostate

cancer. ***Cancer Epidemiology Biomarkers & Prevention***. #Led analysis for performing an iterative two-step EM for conducting regressions of a trait on haplotype effects allowing for ambiguous haplotypes within each gene. Authored the Methods section of the manuscript.

125. Baris, D., M. R. Karagas, S. Koutros, J. S. Colt, A. Johnson, M. Schwenn, A. H. Fischer, J. D. Figueroa, S. I. Berndt, ***S.S. Han***#, L. E. B. Freeman, J. H. Lubin, S. Cherala, K. P. Cantor, K. Jacobs, S. Chanock, N. Chatterjee, N. Rothman & D. T. Silverman (2013) Nonsteroidal anti-inflammatory drugs and other analgesic use and bladder cancer in northern New England. ***International journal of cancer***, 132, 162-173. #Performed statistical analysis by applying a likelihood-ratio test for detecting gene-environment interaction using monotonicity constraints; Provided principal interpretations; Authored the Methods and Results sections of the manuscript.

∗ 126. ***Han, S. S***., P. S. Rosenberg & N. Chatterjee (2012) Testing for Gene–Environment and Gene– Gene Interactions Under Monotonicity Constraints. ***Journal of the American Statistical Association,*** 107**,** 1441-1452.

∗ 127. ***Han, S. S***., P. S. Rosenberg, M. Garcia-Closas, J. D. Figueroa, D. Silverman, S. J. Chanock, N. Rothman & N. Chatterjee (2012) Likelihood ratio test for detecting gene (G)-environment (E) interactions under an additive risk model exploiting GE independence for case-control data. ***American journal of epidemiology****,* 176**,** 1060-1067. .

∗ ***128. Han, S. S***, L. Y. Sue, S.I. Berndt, J. Selhub, L.A. Burdette, P.S. Rosenberg, R.G. Ziegler (2012) Association between genes in the one-carbon metabolism pathway and colorectal adenoma among persons with low folate intake. ***Cancer Epidemiology, Biomarkers & Prevention,*** 21(3):417. **The main figure of this article was highlighted on the Journal's cover page.**

∗ 129. ***Han, S. S.***, M. Yeager, L. E. Moore, M. Wei, R. Pfeiffer, O. Toure, M. P. Purdue, M. Johansson, G. Scelo**,** C. C. Chung, V. Gaborieau, D. Zaridze, K. Schwartz, N. Szeszenia-Dabrowska, F. Davis, V. Bencko, J. S. Colt, V. Janout, V. Matveev, L. Foretova, D. Mates, M. Navratilova, P. Boffetta, C. D. Berg, R. L. Grubb III, V. L. Stevens, M. J. Thun, W. R. Diver, S. M. Gapstur, D. Albanes, S. J. Weinstein, J. Virtamo, L. Burdett, A. Brisuda, J. D. McKay, J. F. Fraumeni Jr, N. Chatterjee**,** P. S. Rosenberg, N. Rothman, P. Brennan, W.Chow, M. Tucker, S. J. Chanock, Jorge R. Toro (2012) The chromosome 2p21 region harbors a complex genetic architecture for association with risk for renal cell carcinoma. ***Human Molecular Genetics,*** 21 (5): 1190-1200.

∗130. ***Han S. S***.&, C. P. Kratz&, P. S. Rosenberg, S. I. Berndt, L. Burdett, M. Yeager, L. A. Korde, P. L. Mai, R. Pfeiffer & M. H. Greene (2011) Variants in or near KITLG, BAK1, DMRT1, and TERT-CLPTM1L predispose to familial testicular germ cell tumour. ***Journal of Medical Genetics***, 48, 473. *Equal contribution.

131. Wacholder, S., ***S. S. Han***# & C. R. Weinberg (2011) Inference From a Multiplicative Model of Joint Genetic Effects for Ovarian Cancer Risk. ***Journal of the National Cancer Institute****,* 103**,** 82. Led analysis by applying a logistic regression for evaluating gene-environment interactions under a multiplicative risk model; Provided principal interpretations

132. Gibson, T. M., B. Brennan, ***S. S. Han***#, S. Karami, D. Zaridze, V. Janout, H. Kollarova, V. Bencko, M. Navratilova, S.-D. N., D. Mates, I. Holcatova, R. M. Pfeiffer, R. Z. Stolzenberg-Solomon, S. T. Mayne, M. Yeager, S. Chanock, N. Rothman, W. Chow, P. S. Rosenberg, P. Boffetta & L. E. Moore (2011) Comprehensive Evaluation of One-Carbon Metabolism Pathway Gene Variants and Renal Cell Cancer Risk. ***PLoS ONE***, 6(10), e26165. #Performed analysis by conducting an iterative two-step EM for performing regressions of a trait on haplotype effects allowing for ambiguous haplotypes within each gene; Provided principal interpretations; Authored the Methods and Results section of the manuscript.

133. Moore L. E., M. L. Nickerson, P. Brennan, J. R. Toro, E. Jaeger, J. Rinsky, ***S. S. Han***[#], D. Zaridze, V. Matveev, V. Janout, H. Kollarova, V. Bencko, M. Navratilova, N. Szeszenia-Dabrowska, D. Mates, L. S. Schmidt, P. Lenz, S. Karami, W. M. Linehan, M. Merino, S. Chanock, P. Boffetta , W. Chow, F. M. Waldman, N. Rothman. (2011) Somatic VHL inactivation: associations with germline VHL polymorphisms and etiologic risk factors for RCC. ***PloS Genetics,*** 7(10), e1002312. [#]Led analysis by performing an iterative two-step EM for conducting regressions of a trait on haplotype effects allowing for ambiguous haplotypes within each gene; Provided principal interpretations; Authored the Methods section of the manuscript.

134. van Bemmel D.M., P. Boffetta, L. M. Dong, S. I. Berndt, I. Menashe, M. Yeager, S. Chanock, S. Karami, D. Zaridze, V. Matteev, V. Janout, H. Kollarova, V. Bencko, M. Navratilova, N. Szeszenia-Dabrowska, D. Mates, A. Slamova, P. Stewart, N. Rothman, ***S. S. Han***[#], P. S Rosenberg, P. Brennan, W. Chow, L.E. Moore (2011) Comprehensive Analysis of 5-Aminolevulinic Acid Dehydrogenase (ALAD)Variants and Renal Cell Carcinoma Risk among Individuals Exposed to Lead. ***PloS ONE,*** 6(7), e20432. [#]Conducted analysis for performing an iterative two-step EM for conducting regressions of a trait on haplotype effects allowing for ambiguous haplotypes within each gene; Provided principal interpretations; Authored the Methods section of the manuscript.

∗135. ***Han, S. S***. & J. T. Chang (2010) Reconsidering the asymptotic null distribution of likelihood ratio tests for genetic linkage in multivariate variance components models under complete pleiotropy. ***Biostatistics****,* 11**,** 226.

136. Grigorenko, E. L., ***S. S. Han***[#], C. M. Yrigollen, L. Leng, Y. Mizue, G. M. Anderson, E. J. Mulder, A. de Bildt, R. B. Minderaa & F. R. Volkmar (2008) Macrophage migration inhibitory factor and autism spectrum disorders. ***Pediatrics****,* 122**,** e438. [#]Led statistical analysis by running generalized estimating equations (GEE) methods for testing associations between genetic markers and autism phenotypes in a family-based data; Provided principal interpretations; Authored the Methods and Results section of the manuscript.

137. Yrigollen, C. M., ***S. S. Han***[#], A. Kochetkova, T. Babitz, J. T. Chang, F. R. Volkmar, J. F. Leckman & E. L. Grigorenko (2008) Genes controlling affiliative behavior as candidate genes for autism. ***Biological psychiatry****,* 63**,** 911-916. [#]Led statistical analysis by applying generalized estimating equations (GEE) methods for testing associations between genetic markers and autism phenotypes in a family-based data; Provided principal interpretations; Authored the Methods of the manuscript.

NON-PEER REVIEWED BIBLIOGRAPHY

(Total 2; published 2; in press 0; total since appointment 2; total lead authorship since appointment 2)

[*] Lead authorship

[*] 1. Aredo, J.V., Wakelee, H.A. and ***Han, S.S***., 2021. A Moving Target: Integration of Smoking Cessation Into Screening for Second Primary Lung Cancer. Journal of thoracic oncology: official publication of the International Association for the Study of Lung Cancer, 16(8), p.e59.

[*] 2. ***Han, S.S***., Plevritis, S.K. and Wakelee, H.A., 2018. Caution needed for analyzing the risks of second cancers. Journal of Thoracic Oncology, 13(9), pp.e172-e173.

BOOK CHAPTERS

1. ***Han, S.S***., Raymond J. Carroll, and Nilanjan Chatterjee (2018) Analysis of Gene- Environment Interactions, a book chapter for Handbook of Statistical Methods for Case-Control Studies. CRC Press.

GRANT SUPPORT

Section Highlights:

Active Funding & Leadership

- **Sustained Independent NCI Funding (PI):** Currently direct major research portfolios as Principal Investigator, including a foundational active R01 integrating multiple EHR systems (Oncoshare) to improve lung cancer outcomes, and the highly prestigious NCI R37 MERIT Award, recognizing exceptional, long-term methodological innovation in risk-based screening strategies.
- **Collaborative Methodological Leadership:** Serve as the PI of the Biostatistics Core for an active NCI P01 program project grant (Precision Interception of Gastric Cancer Precursors). This underscores my critical role and established reputation as a methodological leader driving complex, multi-investigator collaborative science.

Pending Support & Future Trajectory

- **National Policy & Institutional Leadership Trajectory:** Expanding methodological impact across both national policy and institutional infrastructure. This includes serving as Multiple PI on a major pending NCI U01 application within the CISNET consortium to shape future national cancer screening guidelines, alongside an upcoming role as Data Science Core Leader for the Stanford Cancer Institute NCI CCSG P30 renewal (under review) to drive Stanford's enterprise-wide cancer data science initiatives.

(a) Active Support

Jul. 2023 – Jun. 2028
Funder: NIH/NCI 1R01CA282793 (PI: Han)
Title: Integrating Multiple Electronic Health Records Systems to Improve Lung Cancer Outcomes
Role: Principal Investigator

Sep. 2023 – Aug. 2028
Funder: NIH/NCI 1P01CA265772-01A1 (PI: Han)
Title: Core C: Biostatistics
Precision Interception of Gastric Cancer Precursors Through Molecular and Cellular Risk Stratification
Role: PI of the Biostatistics Core

Sep. 2020 – Aug. 2026
Funder: NIH/NCI 1U01CA253858 (PI: Meza/Subcontract PI: Plevritis)
Title: Comparative Modeling of Lung Cancer Prevention, Early Detection and Treatment Interventions
Role: Co-I, developing a microsimulation model for evaluating screening efficacy

Sep. 2021 – Aug. 2026
Funder: NIH/NCI 1U54CA261717 (PH: Gephart)
Title: Deconvolution and interruption of the cancer-neuro-immune axis facilitating brain metastases
Role: Co-I, study design and supervision of bioinformatic analysis

Oct. 2021 – Sep. 2026
Funder: California Institute for Regenerative Medicine (PI: Steinberg)
Title: A Phase 1/Phase 2a Safety and Tolerability Study of Intracerebral Transplantation of Neural Stem Cells (NR1) in Subjects with Chronic Ischemic Subcortical Stroke (ISS)
Role: Co-I, Study Design and Supervision of Statistical Analysis

Jul. 2021 – Jun. 2026
Funder: NIH/NCI U54 (PI: Gephart)
Title: Stanford Brain Metastasis Consortium
Role: Co-I, developing machine learning-based models for predicting risk of brain metastases

Sep. 2021 – Aug. 2026
Funder: NIH/NCI R01 (PI: Rasu)
Title: Rad-pathomic deep learning models to assist radiologists in differentiating aggressive from indolent cancer on MRI
Role: Co-I, Study design and statistical methods development

(b) Past Support

May 2018 – Apr. 2026
Funder: NIH/NCI 1R37CA22608101 (PI: Han)
R01 Converted to R37 (NCI MERIT Award for Early-Stage Investigator)
Title: Evaluation of genetic, clinical, and environmental risk factors to establish effective screening strategies for second primary lung cancer

Role: Principal Investigator

Sep. 2018 – May 2023
Funder: NIH 1RO1AG0607470 (PI: Greicius)
Title: The Stanford Extreme Phenotypes in Alzheimer's Disease (StEP AD) Cohort
Role: Co-I, developing statistical methods to analyze GWAS data

Oct. 2013 – Sep. 2021
Funder: Breast Cancer Research Foundation BCRF-18-150 (PI: Sledge)
Title: The Changing Face of Metastatic Breast Cancer: Using Informatics to Understand and Improve Outcomes
Role: Biostatistician, Study Design and Supervising Statistical Analysis

Aug. 2015 – Jul. 2019
Funder: Agency for Healthcare Research and Quality 1R01 HSO23800 (PI: Ratliff)
Title: Developing a patient-centered model of the risk of perioperative complications in spine surgery
Role: Co-I, developing statistical models to predict adverse events after spine surgery

Aug. 2019 – Jul. 2021
Funder: NIH 5R01NS05878410 (PI: Steinberg)
Title: Multimodal approach investigating the immunomodulatory effort of neural stem cells in stroke recovery
Role: Co-I, Study design and statistical methods development

Sep. 2015 – Dec. 2020	Funder: NIH/NCI U01 CA199284 (PI: Meza/Subcontract PI: Plevritis) Title: Comparative Modeling of Lung Cancer Prevention and Control Policies Role: Co-I, developing a microsimulation model for evaluating screening efficacy
Oct. 2018 – Sep. 2021	Funder: Stanford Bio-X IIP9-82 (PI: Grant) Title: The Eye As The Window To The Brain In Childhood Role: Co-I, Study Design and Supervising Statistical Analysis

(c) Pending Support

Dec 2026 – Nov 2031	Funder: NIH/NCI 1U01CA319217-01 (PI: Tam) Title: Optimizing lung cancer interventions in a dynamic landscape for tobacco use, early detection, treatment, and survivorship care **Role: Multiple PI (Site PI at Stanford)**
June 2027 – May 2032	Funder: NIH/NCI P30CA124435 (PI: Artandi) Title: The Cancer Center Support Grant (Renewal) **Role: PI of the Cancer Data Science Shared Resources Core**

INTERNATIONAL ACTIVITIES

ADVISORY BOARDS AND PROFESSIONAL ORGANIZATIONS

Section Highlights:

- **Global Health Policy Leadership**: Demonstrated sustained executive leadership within the American Statistical Association (ASA)—the world's largest statistical community spanning over 90 countries. I have directly shaped its global initiatives, progressing from Section Program Chair (2022-2023) to my current role as Co-Chair of the International Committee for the 2027 International Conference on Health Policy Statistics (ICHPS), guiding worldwide methodological discourse.
- **International Cancer Consortium Direction (ILCCO)**: Elected to the Steering Committee of the International Lung Cancer Consortium (ILCCO). In this capacity, I help direct worldwide collaborative research agendas, aligning perfectly with my funded NCI portfolio in cancer screening and international health policy.
- **Executive Society Leadership**: Serve as Executive Director-Elect (2022-2026) and former Program Chair for the Korean International Statistics Society, reflecting a deep commitment to global scientific mentorship, administrative leadership, and fostering cross-border academic networks.

2026- Present	Co-Chair, International Committee, International Conference of Health Policy Statistics (ICHPS) Conference 2027
2024 - 2026	Steering Committee, International Lung Cancer Consortium (ILCCO)
2024 - 2025	Scientific Program Committee, International Conference of Health Policy Statistics (ICHPS) Conference 2025
2022- 2026	Executive Director-Elect, Korean International Statistics Society

2022-2023	Program Chair, ASA Health Policy Statistics Section
2021-2022	Program Chair-Elect, ASA Health Policy Statistics Section
2020 - 2021	Program Chair, Korean International Statistics Society
2019 - 2020	Program Chair-Elect, Korean International Statistics Society
2018 - Present	Member, International Association for the Study of Lung Cancer (IASLC)
2017 - Present	Member, Korean International Statistics Society
2015 - Present	Member, International Lung and Cancer Consortium
2008 - 2011	Member, International Genetic Epidemiology Society

EDITORIAL ACTIVITIES

Associate Editor	IEEE Journal of Biomedical and Health Informatics (since 2026)
Associate Editor	Molecular Carcinogenesis (since 2018)
Statistical Editor	Journal of the National Cancer Institute (since 2012) Journal of the National Cancer Institute Cancer Spectrum (since 2017)
Journal Referees	JAMA Oncology, Journal of Thoracic Oncology, JCO Precision Oncology, The Spine Journal, JAMA Open, Nature Medicine, Nature Communications Biology, Cancer Research, American Journal of Respiratory and Critical Care Medicine, American Journal of Epidemiology, Journal of the National Cancer Institute, BMC Medicine, Cancer Epidemiology, Biomarkers & Prevention, Epidemiology, Human Heredity, Molecular Oncology, PLOS One, Molecular Carcinogenesis

INVITED INTERNATIONAL TALKS

1. Leveraging Large Language Models to Extract Longitudinal Smoking History to Improve Lung Cancer Surveillance, International Lung Cancer Consortium Meeting (ILCCO), Hawaii, March 2026

2. Automatic Abstraction of CT Imaging Indication Integrating Structured Data and Radiology Reports, Joint Statistical Meetings (JSM) of the American Statistical Association, Institute of Mathematical Statistics, and International Biometric Society, Nashville, TN, United States August 2024

3. Dynamic Risk Prediction Modeling for Second Primary Cancers, International Lung Cancer Consortium Meeting (ILCCO), Lyon, France, November 2023.

4. Evidence-Based Screening Criteria for Second Primary Lung Cancer Using a Risk Prediction Model for Lung Cancer Survivors, Joint Statistical Meetings (JSM) of the American Statistical Association, Institute of Mathematical Statistics, and International Biometric Society, Washington D.C., United States August 2022

5. Risk-based screening criteria for second primary lung cancer. International Lung Cancer Consortium Meeting (ILCCO), November 2021.

6. Racial disparities of the national lung screening guidelines: The Multiethnic Cohort Study, North American Conference on Lung Cancer (NACLC), October 2020

7. Smoking and Second Primary Lung Cancer. International Lung Cancer Consortium Meeting (ILCCO), November 2020.

8. Mentoring for Individual and Public Impact: Considerations for Mentors and Mentees at All Career Stages. Joint Statistical Meetings (JSM) of the American Statistical Association, Institute of Mathematical Statistics, and International Biometric Society, United States August 2020

9. Test for Gene - Environment Interaction Based on the Trend Effect of Genotype Under an Additive Risk Model Using an Empirical Bayes-Type Shrinkage Estimator. Joint Statistical Meetings (JSM) of the American Statistical Association, Institute of Mathematical Statistics, and International Biometric Society, Denver, CO, United States August 2019

10. Association between smoking and second primary lung cancer risk. International Lung Cancer Consortium meeting (ILCCO), Lyon, France, September 2019

11. Risk prediction model for second primary lung cancer. International Lung Cancer Consortium meeting (ILCCO), Toronto, Canada, September 2018

12. A Likelihood Ratio Test for Gene (G)-Environment (E) Interaction Based on the Trend Effect of a Genotype Under an Additive Risk Model Using the G-E Independence Assumption. Joint Statistical Meetings (JSM) of the American Statistical Association, Institute of Mathematical Statistics, and International Biometric Society, Vancouver, BC, Canada, August 2018

13. Modeling lung cancer screening and second primary lung cancer. International Conference on Health Policy Statistics (ICHPS), Charleston SC, USA, January 2018

14. Second primary lung cancer and risk prediction models. International Lung Cancer Consortium meeting (ILCCO), New York, NY, USA, September 2017

15. Simulating risk factors for lung cancer to optimize lung-screening guidelines. International Biometric Society (IBS), Victoria, Canada, August 2016

16. A common variant on 2q31.3 reduces lung cancer risk among light smokers: Transdisciplinary Research in Lung Cancer Consortium, INTERNATIONAL AGENCY FOR RESEARCH ON CANCER (IARC) 50th Anniversary Conference, Lyon, France, June 2016

17. The impact of overdiagnosis on selection of lung screening strategies. International Cancer Screening Network Conference (ICSN), Rotterdam, Netherlands, June 2015

18. A unified framework for testing genetic associations integrating environmental exposures. Joint Statistical Meetings (JSM) of the American Statistical Association, Institute of Mathematical Statistics, and International Biometric Society, Montreal, Québec, Canada, August 2013

19. A class of general score tests for detecting genetic associations integrating environmental exposures. Joint Statistical Meetings (JSM) of the American Statistical Association, Institute of Mathematical Statistics, and International Biometric Society, Seattle, WA, USA, August 2012

CONTRIBUTED INTERNATIONAL TALKS

1. Disparities of the national lung screening guidelines in the United States. World Conference on Lung Cancer (WCLC), Barcelona, Spain, September 2019

2. Metabolomic profiling for second primary lung cancer among lung cancer survivors. World Conference on Lung Cancer (WCLC), Toronto, Canada, September 2018

3. Risk-stratification for second primary lung cancer. The International Association for the Study of Lung Cancer (IASLC) Chicago Multidisciplinary Symposium in Thoracic Oncology, Chicago, IL, USA, September 2016

4. Likelihood ratio test for detecting gene (G) by environment (E) interactions under additive risk models, exploiting G-E independence for case-control data. Joint Statistical Meetings (JSM) of the American Statistical Association, Institute of Mathematical Statistics, and International Biometric Society, Miami Beach, FL, USA, August 2011

5. Testing for gene-environment and gene-gene interactions under monotonicity constraints. Joint Statistical Meetings (JSM) of the American Statistical Association, Institute of Mathematical Statistics, and International Biometric Society, Vancouver, BC, Canada, August 2010

6. Reconsidering the asymptotic null distribution of likelihood-ratio tests for multivariate genetic linkage in variance components models. International Genetic Epidemiology Society, St. Louis, MO, USA, September 2008

7. Reconsidering the asymptotic null distribution of likelihood-ratio tests for multivariate genetic linkage in variance components models. Joint Statistical Meetings (JSM) of the American Statistical Association, Institute of Mathematical Statistics, and International Biometric Society, Denver, CO, USA, August 2008

NATIONAL ACTIVITIES

ADVISORY BOARDS AND PROFESSIONAL ORGANIZATIONS

2022- Present	Ad-Hoc Reviewer, NIH Study Section, Organization and Delivery of Health Services
2022 - 2023	Program Chair, Health Policy Statistics Section, American Statistical Association
2021 - 2022	Program Chair-Elect, Health Policy Statistics Section, American Statistical Association
2019 - 2020	Program Chair, Statistical Consulting Section, American Statistical Association
2018 - 2019	Program Chair-Elect, Statistical Consulting Section, American Statistical Association
2008 - Present	Member, American Statistical Association
2008 - 2018	Member, American Society of Human Genetics

INVITED NATIONAL TALKS

1. From Risk Prediction to Fairer Screening: Real-World Lessons from Lung Cancer Screening in Diverse Populations, Department of Biostatistics, Epidemiology, and Informatics, University of Pennsylvania, Philadelphia, PA, April 2026

2. Large Language Models to Abstract CT Imaging Indications for Post-Treatment Surveillance in Lung Cancer: Development, External Validation, and Clinical Utility, Cancer Intervention and Surveillance Modeling Network (CISNET) consortium meeting, Bethesda, MD, December 2025

3. Oncoshare-Lung: Integrating Multiple Electronic Health Records Systems to Improve Long-term Outcomes in Lung Cancer Survivors, Department of Biostatistics, Wake Forest University, October 2025

4. Integrating Multiple Electronic Health Records Systems to Improve Long-term Outcomes in Lung Cancer Survivors. Department of Public Health Sciences. University of California, Davis, April 2025

5. Natural History of Second Primary Lung Cancer. Cancer Intervention and Surveillance Modeling Network (CISNET) consortium meeting, Bethesda, MD, December 2024

6. Statistical methods for predicting the risk of second primary lung cancer. Division of Biostatistics in Department of Preventive Medicine, Northwestern University, November 2021

7. Risk Stratification for Second Primary Lung Cancer, INTEGRAL Consortium, Baylor College Epidemiology & Population Science, July 2021

8. Prediction modeling for Second Primary Lung Cancer, University of Hawaii Cancer Center, March 2021

9. Racial disparity and lung cancer screening. Intervention and Surveillance Modeling Network (CISNET) consortium meeting, Ann Arbor, MI, April 2018

10. Algorithm for simulating risk factors for lung cancer in the U.S. population. Cancer Intervention and Surveillance Modeling Network (CISNET) consortium meeting, NIH, Bethesda, MD, November 2017

11. Simulating risk factors for lung cancer to optimize lung-screening guidelines. Lifetime Data Science Conference (LIDA), Connecticut, May 2017

12. Statistical methods for genetic associations, gene-environment interactions, and population-level cancer screening. Department of Epidemiology & Biostatistics, UCSF, San Francisco, January 2017

13. Risk factor simulator for lung cancer in the general U.S. population. Cancer Intervention and Surveillance Modeling Network (CISNET) consortium meeting, NIH, Bethesda, MD, November 2016

14. Understanding the interplay between genes and environment on human disease risk. Department of Medicine, University of California, San Francisco, December 2011

15. Identifying genes for complex traits in psychiatric and cognitive disorders using family data Department of Biostatistics, University of Michigan, Ann Arbor, December 2008

16. Identifying genes for complex traits in psychiatric and cognitive disorders using family data Division of Cancer Epidemiology & Genetics, Biostatistics Branch, NCI, October 2008

INVITED REGIONAL TALKS

1. New Initiatives of the Cancer Data Science Core, **Stanford Cancer Institute Conference, Stanford University**, March 2026

2. Leveraging Large Language Models to Extract Longitudinal Smoking History to Improve Lung Cancer Surveillance, **Department of Epidemiology and Population Health, Stanford University**, February 2026

3. Modeling-Based Approach for Screening Integrated with a Cross-Institute Electronic Health Records (EHR) Database for Non-Smokers, **Center for Asian Health Research and Education (CARE), Stanford University**, March 2025

4. Oncoshare-Lung Initiative. **Stanford Cancer Institute Population Science Annual Retreat**, November 2023.

5. Racial disparities in lung cancer screening in Multiethnic Cohort. **Stanford Lung Cancer Screening Symposium**, November 2021

6. Analyzing genetic data for identifying gene-environment interaction, **Cancer Epidemiology Course, Department of Epidemiology, Stanford University**, March 2021

7. Machine learning based predictive modeling for second primary lung cancer. **BMIR Colloquium, Department of Medicine, Stanford University**, September 2020

8. Novel statistical methods for identifying interactions between genes and environmental exposures for complex diseases. **WORKSHOP IN BIOSTATISTICS, Department of Biomedical Data Science, Stanford University**, April 2018

9. Risk-stratification for Second Primary Lung Cancer. **Stanford Cancer Institute: Population Sciences Quarterly Seminars**, Stanford University, February 2018

10. Novel statistical methods for identifying interactions between genes and environmental exposures for complex diseases. **Quantitative Sciences Unit's Research Methods Seminar, Stanford University**, January 2018

11. Risk-Stratification for Second Primary Lung Cancer. **Stanford Precision Health and Integrated Diagnostics (PHIND) Symposium, Stanford University**, May 2017

12. Statistical methods for gene-gene and gene-environment interaction for complex disease. **Lecture at Psychiatry Department: Methodology of Research in Behavioral Sciences, Stanford University**, April 2017

13. Developing statistical methods to identify interactions between genes and the environment for complex disease. **Stanford Biomedical Informatics Research Seminar, Stanford University**, March 2016

14. The impact of overdiagnosis on selection of lung screening strategies using low-dose computed tomography. **Information Sciences in Imaging at Stanford (ISIS) Seminar, Stanford University**, CA, December 2014

15. Modeling cancer screening for predicting population-level outcomes. **Canary Center at Stanford for Cancer Early Detection Meeting, Stanford University**, November 2014

16. Lectures on statistical methods for analyzing genetic data in Genomic Workshop. **Cancer Prevention Institute of California**, Fremont, CA, August 2012

17. Statistical methods for analyzing genetic data: Gene-Environment interactions, imputations and multiple comparisons. **Cancer Prevention Institute of California**, Fremont, CA, March 2012

TEACHING AND MENTORING

Section Highlights:

- **Comprehensive & Interdisciplinary Mentorship Ecosystem:** Established a highly collaborative, cross-disciplinary training environment, providing primary mentorship across the entire academic pipeline—from undergraduates and master's students to PhD candidates, clinical oncology fellows, and postdoctoral researchers. This training spans diverse domains including Biostatistics, Epidemiology, Medicine, and Computer Science.
- **Track Record of Elite Academic & Clinical Placements:** Demonstrated a sustained commitment to launching independent careers at every level of training. Notable examples include transitioning postdoctoral and clinical fellows into prestigious Assistant Professor positions at Weill Cornell Medicine (Eunji Choi, Ph.D., Epidemiology), UCLA (Julie Wu, M.D., Ph.D., Oncology), and IIT BHU Varanasi (Aparajita Khan, Ph.D., Computer Science), as well as guiding foundational trainees through co-term master's programs into top-tier medical schools (e.g., Sophia Luo to Vanderbilt University School of Medicine).

<u>Current Trainees</u>

- Postdoctoral Fellows (Primary mentoring)
    - Harry Tae Yoon Lee, Ph.D. (2024-Present)
    - Sayeri Lala, PhD. (2024-Present)
    - Saskia Comess, PhD (2025-Present)
    - Rittwika Kansabanik, PhD (2026-Present)
- Graduate Student
    - Emily Rodriguez (Co-Term Master's in Epidemiology)
- Undergraduate Student
    - Lydia Schwartz
    - Jack Quach
- QSU Junior statisticians (research staff)
    - Victoria Ding, M.S. (2016 – Present)
    - Justin Lee, M.S. (2016 - Present)

<u>Former Trainees/Mentees (current positions)</u>

- Postdoctoral fellows
    - Eunji Choi, Ph.D. (2020-2024) Assistant Professor at Weill Cornell Medicine
    - Aparajita Khan, PhD (2022-2024) Assistant Professor at Indian Institute of Technology (IIT BHU) Varanasi.
    - Nilopal Sanyal, Ph.D. (2019-2021) Assistant Professor, University of Texas, El Paso
- Clinical fellows/residents (current position)
    - Julie Wu, MD. Ph.D. (2020-2024) Assistant Professor, University of California, Los Angeles
        - Served as a co-Mentor of her current VA Career Development Award
    - Jacqueline Aredo, M.D. M.S.(2018 – 2021) Oncology Fellow at Stanford University
        - Served as the primary mentor of the MedScholars Program

  - MS thesis advisor of her Epidemiology and Clinical Research MS Program

- Graduate students (former; current positions)
  - Chloe Su (2020-2025), PhD student in Epidemiology; *Revolution Medicines*
  - Rika Terashima (2023-2025) M.D. M.S. student in Epidemiology and Clinical Research; currently a resident at the Jacobi Medical Center Albert Einstein College of Medicine.
  - Anya Fries (2021-2023) MS student in MS&E; PhD student in ETH Zurich
  - Ines Dormoy (2022-2024) MS student in Engineering; Waymo
  - Jane Hua (2022-2024) MS student in Epidemiology; CRC at Stanford
  - Sophia Luo (2018-2022) Co-term student in Epidemiology; medical student in Vanderbilt
  - Matthieu de Rochemonteix (2018-2019) MS student in statistics; Citadel

Other mentoring and teaching activities

2023 Fall	EPI 299: Directed Reading in Epidemiology
2023 Summer	EPI 299: Directed Reading in Epidemiology
2023 Spring	EPI 299: Directed Reading in Epidemiology
2022 Summer	EPI 399: Graduate Research
2021 Spring	EPI 224 / GENE 230 Giving a lecture on genetic analysis for cancer
2020 Spring	NENS 370 Medical Scholars Research
2019 Fall	NENS 370 Medical Scholars Research
2020 - Present	Methods Advisor, KL2 Research Training Program, The Stanford Center for Clinical and Translational Research Education
2017 Spring	PSYC 250 Giving a lecture on statistical analysis for gene-environment interaction
2016 - Present	Advising Faculty for the Biomedical Informatics (BMI) Program, Stanford University School of Medicine
2016 - 2018	Methods Advisor, KL2 Research Training Program, The Stanford Center for Clinical and Translational Research Education
2016	Mentor, Intensive Course in Clinical Research (ICCR), The Stanford Center for Clinical and Translational Research Education
2006 - 2008	Teaching Fellow at Statistics Department at Yale University: - STAT 661 Multivariate Statistics - STAT 612 Linear Models - STAT 230 Introductory data analysis - STAT 100 Introduction to Statistics
2004 – 2006	Statistical Mentor StatLab (Social Science Statistical Laboratory) at Yale University