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RESEARCH INTERESTS

My research focuses on understanding the genetic and environmental etiology of complex disease and developing and evaluating efficient screening strategies based on etiological understanding. The areas of my research interests include statistical genetics, molecular epidemiology, cancer screening modeling, health policy analysis, and risk prediction modeling. I have developed various statistical methods to analyze high-dimensional data to identify genetic and environmental risk factors and their interactions for complex disease. These approaches include employing a unified framework that integrates the joint effects of genetic and environmental risk factors.

ACADMIC 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

Dec 2015 - Present	Assistant Professor, Department of Neurosurgery and 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

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

INTERNATIONAL ACTIVITIES

ADVISORY BOARDS AND PROFESSIONAL ORGANIZATIONS

2020 - Present Program Chair, Korean International Statistics Society
2019 - 2020 Program Chair, Statistical Consulting Section, American Statistical Association
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 - Present Member, American Statistical Association
2008 - Present Member, American Society of Human Genetics
2008 - 2011 Member, International Genetic Epidemiology Society

EDITORIAL ACTIVITIES

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 The Spine Journal, JAMA Open, Nature Communications Biology, Cancer Research, 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, etc.

BIBLIOGRAPHY (Total 75; published 73; in press 2)

* Senior or co-senior authored publication

1. Bentzley, B.S., **S.S. Han**, Stein, S.C., Neuner, S., Humphreys, K., Kampman, K.M., Halpern C.H. Cocaine Use Disorder Treatment Effectiveness: A Meta-Analysis, 2020, *JAMA Network Open* (in press).
2. Meza, R., Jeon J., Toumazis I., ten Haaf, K., Cao, P., Bastani, M., **Han, S.S.**, Blom, E., Jonas, D., Eric J. Feuer, Plevritis, S.K., de Koning, H., Yin Kong, C.Y., Evaluation of the Benefits and Harms of Lung Cancer Screening With Low-Dose CT: A Collaborative Modeling Study for the U.S. Preventive Services Task Force. *JAMA* (in press).
3. Belloy, M.E., Eger, S.J., Le Guen, Y., Napolioni, V., Deters, K.D., Yang, H.S., Scelsi, M.A., Porter, T., James, S.N., Wong, A. and Schott, J.M., **Han, S.S.**, Altmann, A., Greicius, M.D., 2021. KL* VS Heterozygosity Reduces Brain Amyloid in Asymptomatic at Risk APOE* 4 Carriers. *Neurobiology of Aging*.

4. **Han, S.S.**, Chow, E., ten Haaf, K., Toumazis, I., Bastani, M., Tammemagi, M., Jeon, J., Meza, R., Plevritis, S.K. Disparities and national lung screening guidelines in the U.S. population. 2020. *Journal of National Cancer Institute*. Received a media coverage by <https://www.medscape.com/viewarticle/925744>
- * 5. de Rochemonteix, M., Napolioni, V., Sanyal, N., Belloy M.E., Caporaso, Landi, M.T., Greicius, M.D., Chatterjee, N., and **Han, S.S.** A likelihood ratio test for gene-environment interaction based on the trend effect of genotype under an additive risk model using the gene-environment independence assumption. 2020. *American Journal of Epidemiology*.
6. Toumazis, I., Bastani, M., **Han, S.S.** and Plevritis, S.K., 2020. Risk-Based lung cancer screening: A systematic review. 2020. *Lung Cancer*.
7. Li, Y., Khaheera, A., Kim, J., Mandel, M., **Han, S.S.** and Steinberg, G.K., 2021. Basal ganglia cavernous malformations: case series and systematic review of surgical management and long-term outcomes. *Journal of Neurosurgery*, 1(aop), pp.1-9.
8. Church, E.W., Bell-Stephens, T.E., Bigder, M.G., Gummidipundi, S., **Han, S.S.** and Steinberg, G.K., 2020. Clinical course of unilateral moyamoya disease. 2020. *Neurosurgery*.
9. Nielsen, T.H., Abhinav, K., Sussman, E.S., Han, S.S., Weng, Y., Bell-Stephens, T., Heit, J.J. and Steinberg, G.K., 2020. Direct versus indirect bypass procedure for the treatment of ischemic moyamoya disease: results of an individualized selection strategy. *Journal of Neurosurgery*, 1(aop), pp.1-12.
10. Jin, M.C., Ho, A.L., Feng, A.Y., Zhang, Y., Staartjes, V.E., Stienen, M.N., **Han, S.S.**, Veeravagu, A., Ratliff, J.K. and Desai, A.M., 2020. Predictive modeling of long-term opioid and benzodiazepine use after intradural tumor resection. *The Spine Journal*.
11. Sussman, E.S., Gummidipundi, S.E., Pendharkar, A.V., Church, E.W., Ho, A.L., **Han, S.S.** and Steinberg, G.K., 2020. Staged Surgical Resection of Brain Arteriovenous Malformations. *World neurosurgery*.
12. Church, E.W., Bigder, M.G., Sussman, E.S., Gummidipundi, S.E., **Han, S.S.**, Heit, J.J., Do, H.M., Dodd, R.L., Marks, M.P. and Steinberg, G.K., 2020. Treatment of posterior circulation fusiform aneurysms. *Journal of Neurosurgery*, 1(aop), pp.1-7.
13. Fatima, N., Ding, V.Y., **Han, S.S.**, Chang, S.D. and Meola, A., 2020. Predictors of visual functional outcome following treatment for cavernous sinus meningioma. *Journal of Neurosurgery*, 1(aop), pp.1-12.
14. Mahajan, U.V., Purger, D.A., Mantovani, A., Williams, N.R., Espil, F.M., **Han, S.S.**, Stein, S.C. and Halpern, C.H., 2020. Deep Brain Stimulation Results in Greater Symptomatic Improvement in Tourette Syndrome than Conservative Measures: A Meta-Analysis. *Stereotactic and Functional Neurosurgery*, 98(4), pp.270-277.
15. **Han, S.S.**, Azad, T.D., Suarez, P.A. and Ratliff, J.K., 2019. A machine learning approach for predictive models of adverse events following spine surgery. *The Spine Journal*.

16. Tammemägi, M., Haaf, K ten, Toumazis, I., Kong, C.Y., **Han, S.S.**, Jeon, J., Commins, J., Riley T., Meza, R. 2019. Development and Validation of a Multivariable Lung Cancer Risk Prediction Model Including CT Screening Results – A Secondary Analysis of Data from the National Lung Screening Trial. *JAMA Network Open*, 2 (3), e190204-e190204.
17. Lin, C.Y., Vennam, S., Purington, N., Lin, E., Varma, **S., Han, S.**, Desa, M., Seto, T., Wang, N.J., Stehr, H. and Troxell, M.L., 2019. Genomic landscape of ductal carcinoma in situ and association with progression. *Breast cancer research and treatment*, 178(2), pp.307-316.
18. Gray, M., Adamson, M.M., Thompson, R.C., Kappahn, K.I., **Han, S.**, Chung, J.S. and Harris, O.A., 2020. Sex differences in symptom presentation and functional outcomes: a pilot study in a matched sample of veterans with mild TBI. *Brain injury*, 34(4), pp.535-547.
19. ten Haaf, K., Bastani, M., Cao, P., Jeon, J., Toumazis, I., **Han, S.S.**, Plevritis, S.K., Blom, E.F., Kong, C.Y., Tammemägi, M.C. and Feuer, E.J., 2020. A comparative modeling analysis of risk-based lung cancer screening strategies. JNCI: *Journal of the National Cancer Institute*.
20. Belloy, M.E., Napolioni, V., **Han, S.S.**, Le Guen, Y. and Greicius, M.D., 2020. Association of Klotho-VS Heterozygosity With Risk of Alzheimer Disease in Individuals Who Carry APOE4. *JAMA Neurology*.
21. Church, E.W., Qaiser, R., Bell-Stephens, T.E., Bigder, M.G., Chow, E.K., **Han, S.S.**, El-Sayed, Y.Y. and Steinberg, G.K., 2019. Pregnancy after direct cerebral bypass for moyamoya disease. *Journal of neurosurgery*, 1(aop), pp.1-7.
22. Toumazis, I., Tsai, E.B., Erdogan, S.A., **Han, S.S.**, Wan, W., Leung, A. and Plevritis, S.K., 2019. Cost-Effectiveness Analysis of Lung Cancer Screening Accounting for the Effect of Indeterminate Findings. *JNCI Cancer Spectrum*, 3(3), p.pkz035.
23. Abhinav, K., Furtado, S.V., Nielsen, T.H., Iyer, A., Gooderham, P.A., Teo, M., Lee, J., **Han, S.S.**, Gary K Steinberg, Functional Outcomes after Revascularization Procedures in patients with Hemorrhagic Moyamoya disease. *Neurosurgery* (In Press).
24. Hsing, J.C., Nguyen, M.H., Yang, B., Min, Y., **Han, S.S.**, Pung, E., Winter, S.J., Zhao, X., Gan, D., Hsing, A.W. and Zhu, S., 2019. Associations Between Body Fat, Muscle Mass, and Nonalcoholic Fatty Liver Disease: A Population-Based Study. *Hepatology Communications*.
25. Yu, X., Guo, H., Liu, X., Wang, G., Min, Y., Chen, S.H.S., Han, S.S., Chang, R.T., Zhao, X., Hsing, A. and Zhu, S., 2019. Dry eye and sleep quality: a large community-based study in Hangzhou. *Sleep*.
26. Liu, J.J., Nielsen, T.H., Abhinav, K., Lee, J., **Han, S.S.**, Marks, M.P., Do, H.M., Dodd, R.L. and Steinberg, G.K., 2019. Surgical Treatment of Recurrent Previously Coiled and/or Stent-Coiled Intracerebral Aneurysms: A Single-Center Experience in a Series of 75 Patients. *World neurosurgery*, 124, e649-e658.

27. Aredo, J.V., Padda, S.K., Kunder, C.A., **Han, S.S.**, Neal, J.W., Shrager, J.B. and Wakelee, H.A., 2019. Response to comment on “Impact of KRAS mutation subtype and concurrent pathogenic mutations on non-small cell lung cancer outcomes”. *Lung Cancer*, 137, pp.159-160.
28. Huang, Y., Chow, K.K., Aredo, J.V., Padda, S.K., Han, S.S., Kakusa, B.W. and Gephart, M.H., 2019. Epidermal Growth Factor Receptor Mutation Status Confers Survival Benefit in Patients with Non-Small-Cell Lung Cancer Undergoing Surgical Resection of Brain Metastases: A Retrospective Cohort Study. *World neurosurgery*, 125, pp.e487-e496.
29. Aredo, J.V., Padda, S.K., Kunder, C.A., **Han, S.S.**, Neal, J.W., Shrager, J.B. and Wakelee, H.A., 2019. Impact of KRAS mutation subtype and concurrent pathogenic mutations on non-small cell lung cancer outcomes. *Lung Cancer*, 133, pp.144-150.
30. Abhinav, K., Nielsen, T.H., Singh, R., Weng, Y., **Han, S.S.**, Iv, M. and Steinberg, G.K., 2020. Utility of a Quantitative Approach Using Diffusion Tensor Imaging for Prognostication Regarding Motor and Functional Outcomes in Patients With Surgically Resected Deep Intracranial Cavernous Malformations. *Neurosurgery*, 86(5), pp.665-675.
31. **Han, S.S.**, Kelly, S.P., Yang, B., Li, Y., Nguyen, M.H., So, S.K, Rosenberg, P.S., and Hsing, A.W., 2018. Changing landscape of liver cancer in California: a glimpse into the future of liver cancer in the United States. *Journal of the National Cancer Institute*.
32. Kakusa, B., **Han, S.**, Aggarwal, S., Liu, B., Li, G., Soltys, S. and Gephart, M.H., 2018. Clinical factors associated with mortality within three months after radiosurgery of asymptomatic brain metastases from non-small cell lung cancer. *Journal of neuro-oncology*, pp.1-11. Provided principal statistical analytic plans and oversaw implementation of analysis.
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34. **Han, S.S.** and Chatterjee, N., 2018. Review of Statistical Methods for Gene-Environment Interaction Analysis. *Current Epidemiology Reports*, 5(1), pp.39-45.
35. Yang, B., Liu, J.B., So, S.K., **Han, S.S.**, Wang, S.S., Hertz, A., Shariff-Marco, S., Lin Gomez, S., Rosenberg, P.S., Nguyen, M.H. and Hsing, A.W., 2018. Disparities in Hepatocellular Carcinoma Incidence by Race/Ethnicity and Geographic Area in California: Implications for Prevention. *Cancer*, 124(17), pp.3551-3559.
36. **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.
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38. David, S.M., Marjon, N., English, D., Purington, N., **Han, S.S.** and Dizon, D.S., 2018. Palliative Total Pelvic Exenteration for Gynecologic Cancers: A Cross-sectional Study of Society of Gynecologic Oncology Members. *International Journal of Gynecological Cancer*, 28(9), pp.1796-1804.
39. Dougan, M.M., Li, Y., Chu, L.W., Haile, R.W., Whittemore, A.S., **Han, S.S.**, Moore, S.C., Sampson, J.N., Andrulis, I.L., John, E.M. and Hsing, A.W., 2018. Metabolomic profiles in breast cancer: a pilot case-control study in the breast cancer family registry. *BMC cancer*, 18(1), p.532.
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41. Azad, T.D., Vail, D., O'Connell, C., **Han, S.S.**, Veeravagu, A. and Ratliff, J.K., 2018. Geographic variation in the surgical management of lumbar spondylolisthesis: characterizing practice patterns and outcomes. *The Spine Journal*.
42. Chu, L.W., Till, C., Yang, B., Tangen, C.M., Goodman, P.J., Yu, K., Zhu, Y., **Han, S.**, Hoque, A.M., Ambrosone, C. and Thompson, I., 2018. Circadian genes and risk of prostate cancer in the prostate cancer prevention trial. *Molecular carcinogenesis*, 57(3), pp.462-466.
43. Pollom, E.L., Fujimoto, D.K., **Han, S.S.**, Harris, J.P., Tharin, S.A. and Soltys, S.G., 2018. Newly diagnosed glioblastoma: adverse socioeconomic factors correlate with delay in radiotherapy initiation and worse overall survival. *Journal of radiation research*, 59(suppl_1), pp.i11-i18.
44. **Han, S.S.**, ten Haaf, K., Hazelton, W.D., Jeon, J., Meza, R., Kong, C.Y., Feuer, E.J., de Koning, H.J. and Plevritis, S.K., 2018. Re: Think before you leap. *International journal of cancer*, 142(7), pp.1507-1509.
45. Vail, D., Azad, T.D., O'Connell, C., **Han, S.S.**, Veeravagu, A. and Ratliff, J.K., 2018. Postoperative Opioid Use, Complications, and Costs in Surgical Management of Lumbar Spondylolisthesis. *Spine*, 43(15), pp.1080-1088.
46. Afghahi, A., Purington, N., **Han, S.S.**, Desai, M., Pierson, E., Mathur, M.B., Seto, T., Thompson, C.A., Rigdon, J., Telli, M.L. and Badve, S.S., 2018. Higher Absolute Lymphocyte Counts Predict Lower Mortality from Early-Stage Triple-Negative Breast Cancer. *Clinical Cancer Research*, pp.clincanres-1323. Provided principal statistical analytic plans and oversaw implementation of analysis.
47. **Han, S.S.**, Rivera, G.A., Tammemägi, M.C., Plevritis, S.K., Gomez, S.L., Cheng, I. and Wakelee, H.A., 2017. Risk Stratification for Second Primary Lung Cancer. *Journal of clinical oncology*, 35(25), pp.2893-2899.
48. **Han, S.S.**, Erdogan, S.A., Toumazis, I., Leung, A. and Plevritis, S.K., 2017. Evaluating the impact of varied compliance to lung cancer screening recommendations using a microsimulation model. *Cancer Causes & Control*, 28(9), pp.947-958.
49. **Han, S.S.**, ten Haaf, K., Hazelton, W.D., Munshi, V.N., Jeon, J., Erdogan, S.A., Johanson, C., McMahon, P.M., Meza, R., Kong, C.Y. and Feuer, E.J., 2017. The impact of overdiagnosis on the selection of efficient lung cancer screening strategies. *International journal of cancer*, 140(11), pp.2436-2443.

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51. 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).
52. 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). Provided principal statistical analytic plans and oversaw implementation of analysis.
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54. **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.
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59. 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*.
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61. 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.
62. 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*.
63. 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.
64. **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.
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predispose to familial testicular germ cell tumour. *Journal of Medical Genetics*, 48, 473. *Equal contribution.

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72. van Bommel D.M., P. Boffetta, L. M. Dong, S. I. Berndt, I. Menashe, M. Yeager, S. Chanock, S. Karami, D. Zaridze, V. Matveev, 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.
73. **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. Evaluated the asymptotic null distribution of likelihood ratio tests for detecting genetic linkage in multivariate variance components models.
74. 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.
75. 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.

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.

INTERNATIONAL CONFERENCES

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

2. Smoking and Second Primary Lung Cancer. International Lung Cancer Consortium Meeting (ILCCO), November 2020.
3. 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
4. Disparities of the national lung screening guidelines in the United States. World Conference on Lung Cancer (WCLC), Barcelona, Spain, September 2019
5. 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
6. Association between smoking and second primary lung cancer risk. International Lung Cancer Consortium meeting (ILCCO), Lyon, France, September 2019
7. Metabolomic profiling for second primary lung cancer among lung cancer survivors. World Conference on Lung Cancer (WCLC), Toronto, Canada, September 2018
8. Risk prediction model for second primary lung cancer. International Lung Cancer Consortium meeting (ILCCO), Toronto, Canada, September 2018
9. 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
10. Modeling lung cancer screening and second primary lung cancer. International Conference on Health Policy Statistics (ICHPS), Charleston SC, USA, January 2018
11. Second primary lung cancer and risk prediction models. International Lung Cancer Consortium meeting (ILCCO), New York, NY, USA, September 2017
12. 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
13. Simulating risk factors for lung cancer to optimize lung-screening guidelines. International Biometric Society (IBS), Victoria, Canada, August 2016
14. 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
15. The impact of overdiagnosis on selection of lung screening strategies. International Cancer Screening Network Conference (ICSN), Rotterdam, Netherlands, June 2015
16. 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

17. 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
18. 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
19. 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
20. 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
21. 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

OTHER UNIVERSITY/INSTITUTION BASED INVITED TALKS (*indicates outside of appointed institution)

1. Machine learning based predictive modeling for second primary lung cancer. BMIR Colloquium, Department of Medicine, Stanford, September 2020
2. Novel statistical methods for identifying interactions between genes and environmental exposures for complex diseases. WORKSHOP IN BIOSTATISTICS (BIODS/STATS 260), Department of Biomedical Data Science, Stanford, April 2018
3. *Racial disparity and lung cancer screening. Intervention and Surveillance Modeling Network (CISNET) consortium meeting, Ann Arbor, MI, April 2018
4. Risk-stratification for Second Primary Lung Cancer. Stanford Cancer Institute: Population Sciences Quarterly Seminars, February 2018
5. Novel statistical methods for identifying interactions between genes and environmental exposures for complex diseases. Quantitative Sciences Unit's Research Methods Seminar, Stanford, January 2018
6. *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
7. Risk-Stratification for Second Primary Lung Cancer. Stanford Precision Health and Integrated Diagnostics (PHIND) Symposium, Stanford, May 2017

8. *Simulating risk factors for lung cancer to optimize lung-screening guidelines. Lifetime Data Science Conference (LIDA), Connecticut, May 2017
9. Statistical methods for gene-gene and gene-environment interaction for complex disease. Lecture at Psychiatry Department: Methodology of Research in Behavioral Sciences, Stanford, April 2017
10. *Statistical methods for genetic associations, gene-environment interactions, and population-level cancer screening. Department of Epidemiology & Biostatistics, UCSF, San Francisco, January 2017
11. Developing statistical methods to identify interactions between genes and the environment for complex disease. Stanford Biomedical Informatics Research Seminar, Stanford, March, 2016
12. *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
13. *A common variant on 2q31.3 reduces lung cancer risk among light smokers: Transdisciplinary Research in Lung Cancer Consortium. American Society of Human Genetics, Baltimore, MD, October 2015
14. Developing statistical methods to identify interactions between genes and the environment for complex disease. Stanford Biomedical Informatics Research Seminar, Stanford, March 2016
15. 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
16. Modeling cancer screening for predicting population-level outcomes. Canary Center at Stanford for Cancer Early Detection Meeting, Stanford University, November 2014
17. *Quantification of overdiagnosis in lung cancer using computed tomography screening in the U.S. population: Model-based approach Cancer Intervention and Surveillance Modeling Network (CISNET) consortium meeting, NIH, Bethesda, MD, *December 2013*
18. *Lectures on statistical methods for analyzing genetic data in Genomic Workshop. Cancer Prevention Institute of California, Fremont, CA, August 2012
19. *Statistical methods for analyzing genetic data: Gene-Environment interactions, imputations and multiple comparisons. Cancer Prevention Institute of California, Fremont, CA, March 2012
20. Testing for interactions between genes and the environment using monotonicity constraints Stanford University School of Medicine, Stanford, February 2012
21. *Understanding the interplay between genes and environment on human disease risk. Department of Medicine, University of California, San Francisco, December 2011
22. *Identifying genes for complex traits in psychiatric and cognitive disorders using family data Department of Biostatistics, University of Michigan, Ann Arbor, December 2008
23. *Identifying genes for complex traits in psychiatric and cognitive disorders using family data Division of Cancer Epidemiology & Genetics, Biostatistics Branch, NCI, October 2008

NATIONAL AND LOCAL SERVICE

- 2020- Present Member, Search Committee for Quantitative Sciences Unit & Emergency Medicine
Faculty, Stanford University
- 2020 - Present Program Chair, Korean International Statistical Society
- 2019 -2020 Program Chair, Statistical Consulting Section, American Statistical Association
- 2018-2020 Member, Search Committee for Quantitative Sciences Unit & Department of Pathology
Faculty, Stanford University
- 2017- Present Member, Scientific Review Committee, Stanford Cancer Institute, Stanford University

TEACHING AND MENTORING

Current Trainees

- Postdoctoral Fellows (Primary mentoring)
 - o Eunji Choi, Ph.D. Postdoctoral Fellow (2020 – Present)
 - o Nilotpal Sanyal, Ph.D. Postdoctoral Fellow. (2019 – Present)
- Graduate Students (Thesis advising)
 - o Chloe Chang Su, B.S. (2020- Present)
 - Ph.D. student in Epidemiology and Clinical Research
 - o Jacqueline Aredo, B.S. (2018 – Present)
 - MedScholar Program
 - Epidemiology and Clinical Research MS Student
- Undergraduate Students
 - o Sophia Luo. (2018 – Present)
- QSU Junior statisticians (research staff)
 - o Santosh Gummidipundi, M.S. (2018 – Present)
 - o Natasha Purington, M.S. (2016 – Present)
 - o Victoria Ding, M.S. (2016 – Present)
 - o Justin Lee, M.S. (2016 - Present)

Former Trainees/Mentees

- Matthieu de Rochemonteix, M.S. Master's Student at Statistics Department (2018-2019)
- Eric Chow, M.S. (2017-2019), QSU Junior Statistician

Other mentoring activities

- 2016 - Present Advising Faculty for the Biomedical Informatics (BMI) Program, Stanford University
School of Medicine
- 2016 - Present 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