

BIOGRAPHICAL SKETCH

NAME: Kurian, Allison W.

eRA COMMONS USER NAME (credential, e.g., agency login): Kurian.Allison

POSITION TITLE: Professor of Medicine and of Epidemiology & Population Health

EDUCATION/TRAINING

INSTITUTION AND LOCATION	DEGREE	Completion Date	FIELD OF STUDY
Stanford University, Stanford, CA	B.A.	06/1995	Human Biology, Honors
Harvard Medical School, Boston, MA	M.D.	06/1999	Medicine
Massachusetts General Hospital, Boston, MA	Residency	06/2002	Internal Medicine
Harvard School of Public Health, Boston, MA		08/2000	Clinical Effectiveness
Stanford University School of Medicine, Stanford, CA	Fellowship	06/2005	Medical Oncology
Stanford University School of Medicine, Stanford, CA	M.Sc.	12/2006	Epidemiology

A. Personal Statement: My professional goal is to improve cancer outcomes at the population level through clinically-oriented research on cancer genetic epidemiology, prevention, and treatment. I co-lead the Population Sciences Program of the Stanford University Cancer Institute. As Director of the Stanford Women's Clinical Cancer Genetics Program, I lead a clinical practice caring for patients diagnosed with breast cancer and at high genetic risk of developing any cancer. I serve on the National Comprehensive Cancer Network and American Society for Clinical Oncology committees to develop evidence-based practice guidelines for genetic testing and results management. I have led decision analyses to optimize hereditary cancer outcomes, culminating in an online decision tool (Kurian et al., *J Clin Oncol* 2012). I have led high-impact studies in the Surveillance, Epidemiology and End Results (SEER) program, discovering that bilateral mastectomy does not improve survival after breast cancer (Kurian et al., *JAMA* 2014). I lead the Oncoshare project, a breast cancer research initiative that integrates data from electronic medical records and the SEER program, funded by the Breast Cancer Research Foundation. I led a Women's Health Initiative ancillary study that defined the contribution of inherited cancer risk genes to post-menopausal breast cancer (Kurian et al., *JAMA* 2020). I lead a population-based study, "Genetic testing, treatment use, and mortality after diagnosis of breast and ovarian cancer: the Georgia-California GeneLINK Initiative", of genetic testing results linked to SEER data, investigating the epidemiology, treatment and survival implications of cancer risk gene mutations for women with breast or ovarian cancer. Recently, I expanded this SEER-genetic testing linkage to examine genetic testing use and results among more than 1.3 million patients with all types of cancer and identified substantial under-testing and racial/ethnic disparities (Kurian et al, *JAMA* 2023). I co-lead a randomized clinical trial of approaches to population-based cascade genetic testing of family members, the Georgia-California GeneLINK trial, funded by the NCI Cancer Moonshot Initiative. I am a Komen Scholar and PI of a Komen Leadership Grant to characterize tumors in the diverse Northern California Breast Cancer Family Registry by spatial molecular imaging.

Ongoing projects that I would like to highlight include:

R01 CA283207, NCI

Kurian (PI)

3/1/2024-2/28/2029

Personalizing Genetic Test Results Management and Outcomes after Diagnosis of Cancer: the Georgia-California SEER GeneLINK Study

U01 CA254822, NCI

Kurian (PI)

09/01/2020 – 08/31/2025

A population-based virtual solution to reduce gaps in genetic risk evaluation and management in families at high risk for hereditary cancer syndromes: the Georgia-California GeneLINK trial

Breast Cancer Research Foundation

Kurian (PI)

10/01/2023 – 09/30/2024

Oncoshare: A real-world data laboratory to advance breast cancer treatment

Susan G. Komen Foundation Leadership Grant

Kurian (PI)

10/1/2022-9/30/2025

Tumor Spatial Molecular Imaging in the Diverse Breast Cancer Family Registry

R01 CA241125, NCI

Gomez (PI), Role: Co-Investigator

06/08/2020 – 05/31/2025

Insights from Asian populations into disparities in breast cancer prognosis and outcomes

U01 CA253911, NCI

Trentham-Dietz (PI), Role: Co-investigator

09/01/2020 – 08/31/2025

Comparative modeling of precision breast cancer control across the translational continuum

R01 CA249893, NCI

Hargreaves (PI), Role: Co-Investigator

09/01/2020 – 08/31/2025

Abbreviated non-contrast breast MRI for breast cancer screening

W81XWH2110143, Department of Defense Breast Cancer Research Program

Angelo (PI), Role: Co-Investigator

02/1/2021 – 01/31/2026

Relating the interplay of tumor function and host response to clinical outcome in triple-negative breast cancer

R01 CA282793, National Cancer Institute

Han (PI), Role: Co-Investigator

07/1/2023-06/30/2028

Integrating multiple electronic health records systems to improve lung cancer outcomes

Citations:

1. **Kurian, A.W.**, Munoz, D.F., Rust, P., et al. (2012). Online tool to guide decisions for *BRCA1/2* mutation carriers. *Journal of Clinical Oncology*, 30(5), 497-506. PMID: PMC3295552
2. **Kurian, A.W.**, Lichtensztajn, D.Y., Keegan, T. H., et al. (2014). Use of and mortality after bilateral mastectomy compared with other surgical treatments for breast cancer in California, 1998-2011. *JAMA*, 312(9), 902-914. PMID: PMC5747359
3. **Kurian A.W.**, Bernhisel R., Larsen K., et al. (2020). Prevalence of pathogenic variants in cancer susceptibility genes among women with postmenopausal breast cancer. *JAMA*, 323(10), 995-997. PMID: PMC7064876
4. **Kurian A.W.**, Abrahamse P., Furgal A., et al. (2023). Germline Genetic Testing After Cancer Diagnosis. *JAMA*, 330(1), 43-51. PMID: PMC10242510

B. Positions, Scientific Appointments, and Honors

Positions

2020 – present Co-Leader, Population Sciences Program, Stanford Cancer Institute

2020 – present Associate Chief for Academic Affairs, Division of Oncology, Stanford University

2020 – present	Professor of Medicine and of Epidemiology & Population Health, Stanford University
2015 – 2020	Associate Professor of Medicine and Epidemiology & Population Health, Stanford University
2008 – present	Director, Stanford Women's Clinical Cancer Genetics Program, Stanford University
2008 – 2015	Assistant Professor of Medicine and Health Research & Policy, Stanford University
2006 – 2007	Instructor of Medicine, Division of Oncology, Stanford University School of Medicine
2002 – 2005	Post-Doctoral Fellow, Division of Oncology, Stanford University School of Medicine
1999 – 2002	Intern and Resident in Internal Medicine, Massachusetts General Hospital

Scientific Appointments

2023 - present	Working Group, FDA Oncology Center of Excellence Clinical Trial Diversity Action Plan
2022 - present	American Society of Clinical Oncology (ASCO) Germline Mutation Testing in Breast Cancer Guideline Development Panel
2022 – present	External Scientific Advisory Board, Bassett Center for BRCA, University of Pennsylvania
2019 – present	National Comprehensive Cancer Network (NCCN) Representative, Patient-Centered Outcomes Research Institute (PCORI) Advisory Group
2019	NCCN Representative, American College of Obstetrics and Gynecology Evidence Review
2019	ASCO Hereditary Breast Cancer Guidelines Panel
2018 – present	Co-Investigator, Northern California Breast Cancer Family Registry
2016 – present	ASCO Breast Cancer Advisory Panel, Specialty Editor
2015 – present	ASCO Cancer.Net Editorial Board, Special Editor for Hereditary Breast Cancer Syndromes
2015 – 2020	Board of Directors, FORCE Advocacy Group for Hereditary Cancer Syndromes
2015	External Advisory Board, Princess Margaret Cancer Genomics Centre, Toronto, Canada
2013 – 2023	NCCN Clinical Practice Guidelines Development Panel for Breast Cancer Risk Reduction
2013 – 2014	Track Leader, Cancer Prevention and Epidemiology, ASCO Scientific Program Committee
2012 – 2016	ASCO Quality Care Symposium Scientific Program Committee
2011 – present	Scientific Advisory Board, FORCE Advocacy Group for Hereditary Cancer Syndromes
2011 – 2012	American Association for Cancer Research Scientific Program Committee
2009 – present	NCCN Clinical Practice Guidelines Development Panel for Genetic/Familial High Risk Assessment: Breast, Ovarian and Pancreatic Cancer
2008 – 2011	ASCO Career Development Committee
2008 – 2011	ASCO Annual Meeting Planning Committee, Professional Development Track
2005, 2015	Certified, Medical Oncology, American Board of Internal Medicine
2004 – present	Manuscript Reviewer, <i>Annals of Internal Medicine</i> , <i>Breast Cancer Research</i> , <i>Breast Cancer Research and Treatment</i> , <i>Cancer</i> , <i>Cancer Epidemiology Biomarkers and Prevention</i> , <i>Cancer Prevention Research</i> , <i>Cancer Research</i> , <i>Carcinogenesis</i> , <i>Clinical Cancer Research</i> , <i>European Journal of Cancer</i> , <i>International Journal of Cancer</i> , <i>JAMA</i> , <i>JAMA Oncology</i> , <i>Journal of Clinical Oncology</i> , <i>JCO Precision Oncology</i> , <i>New England Journal of Medicine</i>

Honors

2023	Fellow, American Society of Clinical Oncology (FASCO)
2023	Leadership Award, Susan G. Komen Foundation
2022	Komen Scholar, Susan G. Komen Foundation
2022	Invited Researcher, Breast Cancer Research Foundation
2021	Impact Award, National Consortium of Breast Centers
2020	Elected Member, American Society of Clinical Investigation
2019-2023	Castle Connolly Exceptional Woman in Medicine
2019-2024	Castle Connolly Top Doctor
2019	Saul Rosenberg Faculty Teaching Award, Stanford Oncology Division
2017	Elizabeth Mayers Award for Outstanding Research, BRCA Foundation
2014	Stanford University Oncology Division Teaching Award
2013	Suzanne Pride Bryan Breast Cancer Research Award, Stanford Cancer Institute
2012	One of the 12 best publications funded by the NCI's Epidemiology and Genomics Program
2010	California Breast Cancer Research Program Translational Research Award
2008	Robert Wood Johnson Foundation Physician Faculty Scholars Award
2008	Jan Weimer Faculty Chair for Breast Oncology, Stanford Cancer Institute
2007	Cornelius L. Hopper Research Impact Award, California Breast Cancer Research Program
2006	NIH Building Interdisciplinary Research Careers in Women's Health K12 Award

2005	American Society of Clinical Oncology Young Investigator Award
2005	Cancer Research and Prevention Foundation Post-Doctoral Fellowship Award
2005	California Breast Cancer Research Program Post-Doctoral Fellowship Award
2004	American Society of Clinical Oncology Merit Award for Research Abstract
2003	Award for best research abstract, Division of Oncology, Stanford University
1995	Phi Beta Kappa, Stanford University

C. Contributions to Science

1. Characterizing breast cancer risk and outcomes across diverse populations: My work has contributed significantly to the understanding of inherited breast cancer risk, with a special focus on racially and ethnically diverse populations. In early work, I studied the performance of models that predict carriage of inherited *BRCA1* and *BRCA2* (*BRCA1/2*) gene mutations across women from different racial and ethnic groups: these articles demonstrated substantial differences in the performance of clinical risk prediction tools across women from different racial and ethnic groups, with significant implications for patient care (Kurian et al., *J Clin Oncol* 2008). In collaboration with the multi-national, racially and ethnically diverse Breast Cancer Family Registry (BCFR), I led a study that estimated breast cancer risks among women who tested negative for an identified familial mutation in *BRCA1/2*. We discovered that there is no significant increase in breast cancer risk among non-carriers of a familial *BRCA1/2* mutation: this publication was highlighted by an editorial and news release, and selected as one of the best publications funded in 2011 by the National Cancer Institute's Epidemiology and Genomics Research Program (Kurian et al., *J Clin Oncol* 2011). I led an ancillary study within the Women's Health Initiative which found that pathogenic variants in cancer susceptibility genes are more prevalent than previously believed among women diagnosed with breast cancer after menopause (Kurian et al., *JAMA* 2020). Most recently, I led a study in the Stanford/Sutter Health Oncoshare database that was the first to characterize differences in breast cancer diagnosis, treatment and outcomes among women from sex and gender minority groups, identifying a marked disparity in metastatic recurrence (Eckhert et al., *JAMA Oncology* 2023). Thus, my research has substantially enhanced knowledge of hereditary cancer risk and cancer outcomes among diverse patient populations and families.

- a. **Kurian, A.W.**, Gong, G.D., Chun, N.M., et al. (2008). Performance of *BRCA1/2* mutation prediction models in Asian Americans. *Journal of Clinical Oncology*, 26(29), 4752-8. PMID: PMC2653135
- b. **Kurian, A.W.**, Gong, G.D., John, E.M., et al. (2011). Breast cancer risk for non-carriers of family-specific *BRCA1* and *BRCA2* mutations: findings from the Breast Cancer Family Registry. *Journal of Clinical Oncology*, 29(34), 4505-9. PMID: PMC3236651
- c. **Kurian A.W.**, Bernhisel R., Larsen K., et al. (2020). Prevalence of pathogenic variants in cancer susceptibility genes among women with postmenopausal breast cancer. *JAMA*, 323(10), 995-997. PMID: PMC7064876
- d. Eckhert E., Lansinger O., Ritter V., Liu M., Han S., Schapira L., John E.M., Gomez S., Sledge G., **Kurian A.W.** (2023). Breast cancer diagnosis, treatment and outcomes of patients from sex and gender minority groups. *JAMA Oncology*, 9(4):473-480. PMID: PMC9896373

2. Informing decisions about the prevention and treatment of women's cancers: I have conducted many studies that aim to inform and facilitate the difficult choices that women face about managing their cancer risks. Together with colleagues in the NCI-funded Cancer Intervention and Surveillance Modeling Network (CISNET), I have led decision analyses of cancer risk reduction options for high-risk women. We first estimated the cost-effectiveness of screening breast magnetic resonance imaging (MRI) for *BRCA1/2* mutation carriers, a publication that was cited by the practice guidelines of the American Cancer Society and honored by the 2007 Research Impact Award of the California Breast Cancer Research Program. We built on this work to compare the survival of *BRCA1/2* mutation carriers after various available options for cancer risk reduction, using a computer simulation model. Notably, we discovered that intensive breast screening incorporating MRI offers comparable survival probability to that of prophylactic mastectomy, an invasive procedure that many patients wish to avoid. This work resulted in a high-impact publication that was cited in statements by the American and Canadian Colleges of Surgeons. We subsequently provided the simulation model online for clinical use as a decision support tool, and it is publicly available to patients and doctors at <http://brcatool.stanford.edu> (Kurian et al., *J Clin Oncol* 2012). I recently partnered with CISNET investigators to model optimal breast MRI screening strategies in women with other cancer susceptibility gene mutations (*ATM*, *CHEK2* and *PALB2*), and our finding of a 50% reduction in breast cancer mortality when screening

breast MRI is initiated at age 30-35 has informed clinical practice guidelines (Lowry et al., *JAMA Oncol* 2022). I also led a SEER-based study of the surgical choices and outcomes of nearly 190,000 Californian breast cancer patients. Despite a dramatic rise in the use of double mastectomy over time, no patient subgroup gained any survival benefit from this highly invasive procedure. This definitive study answered an urgent clinical question – do women gain any better survival if they remove both breasts – which patients and physicians consider unethical to address with a randomized clinical trial (Kurian et al., *JAMA* 2014). Together with Dr. Ami Bhatt, I led an analysis of triple-negative breast cancer in the Stanford/Sutter Health Oncoshare database which discovered that antimicrobial use is associated with higher cancer-specific mortality, potentially mediated by the immune response to cancer treatment (Ransohoff et al., *Nature Communications* 2023). Thus, my work has informed decisions about breast cancer screening, prevention, and treatment.

- a. **Kurian, A.W.**, Munoz, D.M., Rust, P., et al. (2012). Online tool to guide decisions for *BRCA1/2* mutation carriers. *Journal of Clinical Oncology*, 30(5), 497-506. PMCID: PMC3295552
- b. Lowry K.P., Geuzinge H.A., Stout N.K., Alagoz O., Hampton J., Kerlikowske K., Miglioretti D., Schechter C.B., Sprague B.L., Tosteson A.N.A., Trentham-Dietz A., van Ravesteyn N., Yaffe M., Yeh J., Couch F.J., Kraft P., Polley E.C., Mandelblatt J.S.*, **Kurian A.W.***, Robson M.E*. *Co-senior authors (2022). Breast screening strategies for women with *ATM*, *CHEK2* and *PALB2* pathogenic variants: a comparative modeling analysis. *JAMA Oncology*, 8(4), 587-596. PMCID: PMC8855312
- c. **Kurian, A.W.**, Lichtensztajn, D.Y., Keegan, T. H., et al. (2014). Use of and mortality after bilateral mastectomy compared with other surgical treatments for breast cancer in California, 1998-2011. *JAMA*, 312(9), 902-914. PMCID: PMC5747359
- d. Ransohoff J.D., Ritter V., Purington N., Andrade K., Han S., Liu M. Liang S.Y., John E.M., Gomez S.L., Telli M. L., Schapira L., Itakura H., Sledge G.W., Bhatt A.S., **Kurian A.W.** (2023). Antimicrobial exposure is associated with decreased survival in triple-negative breast cancer. *Nature Communications*, 14(1), 2053. PMCID: PMC10097670

3. **Clinical translation of emerging genomic technologies:** I have contributed substantially to the translation of genomic technologies for cancer diagnosis and treatment. My early work included the first cost-effectiveness analysis of a molecularly targeted therapy for early breast cancer, trastuzumab. I have recently focused on translating next-generation sequencing panels of multiple cancer-risk associated genes into clinical practice: in 2014, I led the first clinical study of next-generation sequencing for breast cancer risk assessment. We found that a substantial proportion of high-risk women carry mutations in genes other than *BRCA1/2*, a discovery that enabled early cancer detection and offers evidence of benefit from this new genetic technology. This innovative study was published as a rapid communication due to its clinical relevance, was chosen by ASCO as one of the best original articles of 2014 and informed the National Comprehensive Cancer Network's practice guidelines (Kurian et al., *J Clin Oncol* 2014). Working with the Cancer Surveillance and Outcomes Research Team on NCI P01 3003080504 (S. Katz, P.I.) and R01 CA225697 (A. Kurian, P.I.), I led analyses of the use and outcomes of genetic testing in a large, population-based sample of breast cancer patients from the California and Georgia SEER registries (Kurian et al., *JAMA* 2017; Kurian et al., *JAMA Oncology* 2020), and recently expanded this study to examine genetic testing utilization and results in more than 1.3 million patients diagnosed with all types of cancer (Kurian et al., *JAMA* 2023). My contributions have been recognized by the 2021 National Coalition of Breast Centers Impact Award and a 2022 Leadership Award from the Susan G. Komen Foundation.

- a. **Kurian, A.W.**, Hare, E.E., Mills, M.A., et al. (2014). Clinical evaluation of a multiple-gene sequencing panel for hereditary cancer risk assessment. *Journal of Clinical Oncology*, 32(19), 2001-2009. PMCID: PMC4067941
- b. **Kurian A.W.**, Griffith K.A., Hamilton A.S., et al. (2017). Genetic testing and counseling among patients with breast cancer. *JAMA*, 317(5), 531-534. PMCID: PMC5530866
- c. **Kurian A.W.**, Ward K.C., Abrahamse P., et al. (2020). Association of germline genetic testing results with locoregional and systemic therapy in patients with breast cancer. *JAMA Oncology*, 6(4), e196400. PMCID: PMC7042883
- d. **Kurian A.W.**, Abrahamse P., Furgal A., et al. (2023). Germline Genetic Testing After Cancer Diagnosis. *JAMA*, 330(1), 43-51. PMCID: PMC10242510

Complete List of Published Work in MyBibliography (from >285 peer-reviewed publications):

https://www.ncbi.nlm.nih.gov/myncbi/1-smniWZl_dAM/bibliography/public/