

BIOGRAPHICAL SKETCH

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NAME: Goodman, Marc T.

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

POSITION TITLE: Professor and Director, Cancer Prevention and Genetics, Samuel Oschin Comprehensive Cancer Institute, Cedars Sinai Medical Center

EDUCATION/TRAINING (*Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable. Add/delete rows as necessary.*)

INSTITUTION AND LOCATION	DEGREE (if applicable)	Completion Date MM/YYYY	FIELD OF STUDY
Columbia College, New York	BA	05/1976	Biology
University of California, Los Angeles	MPH	05/1980	Epidemiology
Yale University, New Haven	PhD	05/1985	Epidemiology

A. Personal Statement

As a molecular epidemiologist, my research interests focus primarily on infectious disease and hormonal carcinogenesis; cancer biomarker development and the role of metabolic abnormalities in cancer risk and survival; and the development of clinical interventions that slow cancer progression and reduce the toxicity of cancer treatment. Although these interests are broad, my research strategy has been to develop the appropriate resources to support multidisciplinary, cross-cutting, collaborative science that advances our cancer prevention efforts. My strengths include the design and implementation of prospective cohort studies and clinical trials in diverse populations that involve both biological and clinical outcomes. Key to my success has been rich collaborative relationships and outstanding mentoring from Larry Kolonel and Ernst Wynder, among others. Relevant to this application, I started my career at the American Health Foundation where I managed a multi-center study of tobacco carcinogenesis (P01 CA32617, Wynder PI). Following a move to the University of Hawaii, I implemented two natural history studies of anogenital human papillomavirus infection with active follow-up and repeated biological measurements on more than 3,300 subjects from five clinical centers (R01 CA77318, Goodman PI). The *Hawaii HPV Cohort Study* biorepository now includes more than 120,000 biospecimens. I also developed and administered the Biospecimen Collection Core for the *Multiethnic Cohort Study* (MEC) in which we gathered blood and urine specimens among 36,000 Hawaii MEC participants (P01 CA033619, Kolonel PI). Finally, as PI of the SEER contract (N01 PC035137) to the *Hawaii Tumor Registry*, I have had extensive experience in implementing and managing large, multi-center data and specimen collection efforts that accrue to centralized repositories. I am especially proud of my leadership role in the development of the SEER *Residual Tissue Repository*, a unique and valuable population-based resource consisting of tissue specimens and clinical data for over 125,000 racially and ethnically diverse cancer patients.

1. Goodman MT, Morgenstern H, Wynder EL. A case-control study of factors affecting the development of renal cell cancer. *Am J Epidemiol* 1986;124:926-41. PMID:3776975
2. Le Marchand L, Yoshizawa CN, Kolonel LN, Hankin JH, Goodman MT. Vegetable consumption and lung cancer risk: a population-based case-control study in Hawaii. *J Natl Cancer Inst* 1989;81:1158-64. PMID:2545891

3. Goodman MT, Shvetsov YB, Wilkens LR, Franke AA, Le Marchand L, Kakazu KK, Nomura AM, Henderson BE, Kolonel LN. Urinary phytoestrogen excretion and postmenopausal breast cancer risk: the multiethnic cohort study. *Cancer Prev Res (Phila)* 2009;2:887-94. PMID:19789300
4. Ollberding NJ, Kim Y, Shvetsov YB, Wilkens LR, Franke AA, Cooney RV, Maskarinec G, Hernandez BY, Henderson BE, Le Marchand L, Kolonel LN, Goodman MT. Prediagnostic leptin, adiponectin, C-reactive protein, and the risk of postmenopausal breast cancer. *Cancer Prev Res (Phila)* 2013;6:188-95. PMID:23466816.

B. Positions and Honors

Positions and Employment

- 1980-1981 Chief, Department of Epidemiology and Infection Control, St. Joseph Med. Center, Burbank, CA
 1982-1985 Senior Epidemiologist, American Health Foundation, New York, New York
 1986-1990 Asst. Professor, Epidemiology Program, Cancer Research Center, University of Hawaii
 1986-1990 Adj. Asst. Professor of Public Health, School of Public Health, University of Hawaii
 1986-1996 Co-Principal Investigator, Hawaii Tumor Registry (SEER Program), Honolulu, Hawaii
 1990-2000 Assoc. Professor, Epidemiology Program, Cancer Research Center, University of Hawaii
 1990-2000 Adj. Assoc. Professor of Public Health, School of Public Health, University of Hawaii
 1992-1993 Visiting Scientist, Radiation Effects Research Foundation, Hiroshima, Japan
 1993-2000 Adj. Assoc. Professor, Interdisciplinary Prog. Biomed. Sci., JAB School Med., Honolulu, Hawaii
 1995-2012 Principal Investigator, Hawaii Tumor Registry (SEER Program), Honolulu, Hawaii
 1998 Visiting Scientist, International Agency for Research on Cancer, Lyon, France
 2000-2012 Professor (Tenure), University of Hawaii Cancer Center, Honolulu, Hawaii
 2012- Professor and Director, Cancer Prevention and Control, Samuel Oschin Comprehensive Cancer Institute, Cedars-Sinai Medical Center, Los Angeles, California

Other Experience and Professional Memberships

- 1988 Consultant Advisory Panel, Community Clinical Oncology Program, Northwestern University
 1991-1998 Associate Editor, *American Journal of Epidemiology*
 1992-1996 Associate Editor, *Oncology Reports*
 1994 Consultant, Saga Medical School, Japan
 1995 Consultant Advisory Panel, Radiation Effects Research Foundation, Hiroshima, Japan
 1996 NIAID, Adult AIDS Clinical Trials Group
 1997 Reviewer, American Institute for Biological Sciences, National Academy of Sciences
 1997 Reviewer, Board on Science and Technology for International Development, NAS
 1997-2001 Reviewer, Ovarian Cancer Research Program, Department of Defense
 1998- NIH Study Sections-numerous ad hoc Special Emphasis Panels
 1999-2009 Editorial Board, *Asian Pacific Journal of Cancer Prevention*
 2002 Reviewer, Tobacco Related Disease Research Program, University of California
 2002 Reviewer, Panel C, National Cancer Institute of Canada
 2003 Editor, *Cancer Supplement*, (97/10)
 2003-2004 Reviewer, California Breast Cancer Research Program, University of California
 2003-2009 Clinical Advisory Committee, Quality and Costs of Colon Cancer Care, Dept. Veterans Affairs
 2003-2008 Member, Epidemiology of Cancer (EPIC) Study Section, NIH
 2004-2007 External Advisory Board, Center for Nutrient-Gene Interaction, University of Alabama
 2006-2011 Associate Editor, *Cancer Research*
 2007 External Advisory Board, Public Health Sciences, Fred Hutchinson Cancer Research Center

Honors

- 1978-1980 Public Health Service Traineeship
 1983 Student Workshop, Society for Epidemiologic Research
 1999 Keynote Address, American Radium Society
 2001 Comprehensive Cancer Control Leadership Institute, American Cancer Society
 2001-2003 Chair, Ovarian Cancer Research Group, North American Association of Central Cancer Registries

2004-2005 Participant, NCI Epidemiology Leadership Workshop
 2004-2005 Surveillance, Epidemiology, End Results (SEER), First Place in the Nation
 2005 Participant, Princess Takamatsu Cancer Research Fund Symposium, Tokyo, Japan
 2005-2008 Member, Rare Cancers Collaborative Group, North American Assoc. Central Cancer Registries
 2006-2008 Chair, Epidemiology of Cancer (EPIC) Study Section, NIH
 2010-2015 Member, Board of Scientific Counselors, Clinical Sciences and Epidemiology, NCI
 2012 Participant, President's Cancer Panel

C. Contribution to Science

My research interests have concentrated principally on cancer prevention and the identification of molecular mechanisms in carcinogenesis, particularly among women. Recent work has focused on the use of cancer registry-based biological repositories to explore phenotypic and prognostic markers of malignancy; the natural history of HPV-associated carcinogenesis; the epidemiology and genetics of ovarian and endometrial cancers; and the molecular basis through which endocrine-, nutrition-, and immune-related factors increase postmenopausal breast cancer risk.

1. My nearly 30 year involvement with the SEER Program as Principal Investigator for the *Hawaii Tumor Registry* will likely be among my most important scientific legacies. Through the *University of Guam/Cancer Research Center of Hawaii Partnership* (U54 CA143727, Vogel PI) and with the assistance of the CDC, we established the *Pacific Regional Central Cancer Registry* to enable the provision of high-quality, standardized cancer reporting, data, and statistics across the entire Pacific Island population. While more managerial than scientific, this infrastructure has provided the foundation for cancer control efforts in many of the most remote island nations in the world. In addition to this accomplishment, I had a leadership role in building and expanding the *SEER-Medicare* linkage studies, the *SEER Residual Tissue Repository*, a centralized population-based resource for archival cancer tissue, the *Transplant Cancer Match Study*, and the *National Longitudinal Mortality Study*. These resources have been used by me and many other researchers to advance our cancer prevention and control efforts.
 - a. Chaturvedi AK, Engels EA, Pfeiffer RM, Hernandez BY, Xiao W, Kim E, Jiang B, Goodman MT, Sibug-Saber M, Cozen W, Liu L, Lynch CF, Wentzensen N, Jordan RC, Altekruse S, Anderson WF, Rosenberg PS, Gillison ML. Human papillomavirus and rising oropharyngeal cancer incidence in the United States. *J Clin Oncol* 2011;29:4294-301. PMID:21969503
 - b. Engels EA, Pfeiffer RM, Fraumeni JF Jr, Kasiske BL, Israni AK, Snyder JJ, Wolfe RA, Goodrich NP, Bayakly AR, Clarke CA, Copeland G, Finch JL, Fleissner ML, Goodman MT, Kahn A, Koch L, Lynch CF, Madeleine MM, Pawlish K, Rao C, Williams MA, Castenson D, Curry M, Parsons R, Fant G, Lin M. Spectrum of cancer risk among US solid organ transplant recipients. *JAMA* 2011;306:1891-901. PMID:22045767
 - c. Gomez SL, Noone AM, Lichtensztajn DY, Scoppa S, Gibson JT, Liu L, Morris C, Kwong S, Fish K, Wilkens LR, Goodman MT, Deapen D, Miller BA. Cancer incidence trends among Asian American populations in the United States, 1990-2008. *J Natl Cancer Inst* 2013;105:1096-110. PMID:23878350
 - d. Saraiya M, Unger ER, Thompson TD, Lynch CF, Hernandez BY, Lyu CW, Steinau M, Watson M, Wilkinson EJ, Hopenhayn C, Copeland G, Cozen W, Peters ES, Huang Y, Sibug Saber M, Altekruse S, Goodman MT. Nationwide assessment of human papillomavirus genotypes in cancers: Implications for additional impact of 9-valent HPV vaccine in the United States", *J Natl Cancer Inst* [In press]
2. In the early 1990s, I initiated my first case-control study of risk factors for pre-malignant changes in the cervical epithelium (R01 CA052139, Goodman PI), with a special emphasis on diet. This was followed by the establishment of a 10-year longitudinal cohort of women (R01 CA77318, Goodman PI) for long-term follow-up to identify factors that influence the persistence of HPV infection of the cervix and anus. We were the first to show that a woman's risk of anal HPV infection is as common as her risk of cervical HPV infection. The observation that HPV-16 and -18 infections in the anal canal are highly prevalent implies that prophylactic vaccines targeting these oncogenic types may reduce the incidence of anal cancer. We also

reported how commonly anal and cervical HPV infections occur consecutively in the same woman. The high degree of genotype-specific concordance suggests that the cervix (vagina) and anus may serve as reservoirs for HPV infection at the other anatomical site. These data have been useful in defining strategies for the control of HPV-associated malignancies and in modeling HPV-associated disease prevention measures.

- a. Hernandez BY, Wilkens LR, Zhu X, Thompson P, McDuffie K, Shvetsov YB, Kamemoto LE, Killeen J, Ning L, Goodman MT. Transmission of human papillomavirus in heterosexual couples. *Emerg Infect Dis* 2008;14:888-94. PMID:18507898
 - b. Goodman MT, Shvetsov YB, McDuffie K, Wilkens LR, Zhu X, Thompson PJ, Ning L, Killeen J, Kamemoto L, Hernandez BY. Prevalence, acquisition, and clearance of cervical human papillomavirus infection among women with normal cytology: Hawaii Human Papillomavirus Cohort Study. *Cancer Res* 2008;68:8813-24. PMID:18974124
 - c. Shvetsov YB, Hernandez BY, Wilkens LR, Thompson PJ, Franke AA, Zhu X, Goodman MT. Plasma micronutrients and the acquisition and clearance of anal human papillomavirus infection: the Hawaii HPV cohort study. *Cancer Res* 2010;70:9787-97. PMID:20935226
 - d. Scott ME, Shvetsov YB, Thompson PJ, Hernandez BY, Zhu X, Wilkens LR, Killeen J, Vo DD, Moscicki AB, Goodman MT. Cervical cytokines and clearance of incident human papillomavirus infection: Hawaii HPV cohort study. *Int J Cancer* 2013;133:1187-96. PMID:23436563
3. The biological interplay between hormones, diet, and metabolism on the risk of cancer in women has been a longstanding interest of mine, including etiologic and prognostic investigations of breast, ovarian and uterine cancers. Aside from the design and implementation of NIH-funded studies, I have been an active leader in assembling pooled datasets for analysis in collaboration with the *Ovarian Cancer Association Consortium*, the *Epidemiology of Endometrial Cancer Consortium*, and *The Cancer Genome Atlas*. The ongoing *Collaborative Study of Ovarian Cancer* (R01 CA58598, Goodman PI) began in 1993 to determine whether the substantial ethnic differences in ovarian cancer incidence reflect ethnic variation in known risk factors or genetic susceptibility. This 20-year study has yielded more than 50 high-impact publications. As Project Leader and Core Leader on four cycles of the *Epidemiologic Studies of Diet and Cancer in Hawaii* (P01 CA033619, Kolonel PI), I focused extensively on the association of dietary and nutritional mechanisms in endometrial and breast carcinogenesis. As site PI for the *Women's Intervention Nutrition Study* (R01 CA045504, Wynder PI), we randomized over 120 women in this large-scale trial to test whether a dietary intervention can improve the clinical outcome of women with breast cancer. Our results demonstrated that a reduction in dietary fat intake, with modest influence on body weight, may improve relapse-free survival of breast cancer patients receiving conventional cancer management.
- a. Goodman MT, Wilkens LR, Hankin JH, Lyu LC, Wu AH, Kolonel LN. Association of soy and fiber consumption with the risk of endometrial cancer. *Am J Epidemiol* 1997;146:294-306. PMID:9270408
 - b. Chlebowski RT, Blackburn GL, Thomson CA, Nixon DW, Shapiro A, Hoy MK, Goodman MT, Giuliano AE, Karanja N, McAndrew P, Hudis C, Butler J, Merkel D, Kristal A, Caan B, Michaelson R, Vinciguerra V, Del Prete S, Winkler M, Hall R, Simon M, Winters BL, Elashoff RM. Dietary fat reduction and breast cancer outcome: interim efficacy results from the Women's Intervention Nutrition Study. *J Natl Cancer Inst* 2006;98:1767-76. PMID:17179478
 - c. Ollberding NJ, Lim U, Wilkens LR, Setiawan VW, Shvetsov YB, Henderson BE, Kolonel LN, Goodman MT. Legume, soy, tofu, and isoflavone intake and endometrial cancer risk in postmenopausal women in the multiethnic cohort study. *J Natl Cancer Inst* 2012;104:67-76. PMID:22158125
 - d. Terry KL, Karageorgi S, Shvetsov YB, Merritt MA, Lurie G, Thompson PJ, Carney ME, Weber RP, Akushevich L, Lo-Ciganic WH, Cushing-Haugen K, Sieh W, Moysich K, Doherty JA, Nagle CM, Berchuck A, Pearce CL, Pike M, Ness RB, Webb PM; Australian Cancer Study (Ovarian Cancer); Australian Ovarian Cancer Study Group, Rossing MA, Schildkraut J, Risch H, Goodman MT; Ovarian

Cancer Association Consortium. Genital powder use and risk of ovarian cancer: a pooled analysis of 8,525 cases and 9,859 controls. Cancer Prev Res (Phila) 2013;6:811-21. PMID:23761272

D. Research Support

Ongoing Research Support

NCI R01 CA058598 (Goodman)

7/1/09 - 5/31/15

Collaborative Genetic Study of Ovarian Cancer Risk

This study examines the association of vitamin D and calcium-related genetic polymorphisms with the risk of epithelial ovarian in Hawaii.

Role: PI

Completed Research Support

NCI U54 CA143727 (Vogel)

9/1/09 – 8/31/14

University of Guam/Cancer Research Center of Hawaii Partnership – Full Project 1

The objective of this full research project of this partnership is to develop a breast cancer risk model for women of Guam and the Northern Mariana Islands.

Role: Project Leader, Co-Investigator

NCI R01 CA140311 (Umbricht)

4/19/11 – 03/31/16

Multicenter Genetic, Epigenetic & Expression Analysis of DCIS Outcome Predictors

The goal of this project is to identify the molecular alterations that occur in the progression from ductal carcinoma in situ (DCIS) to invasive breast cancer.

Role: Consortium PI

NCI HHSN261201000037C (Goodman)

8/1/10 – 7/31/17

Surveillance, Epidemiology and End Results (SEER)

The major goal of this project is to collect information on all new cancer diagnoses in Hawaii, as part of the SEER program, for utilization in epidemiological research.

Role: PI

NCI HHSN261201000017I (Goodman)

3/19/10 – 3/18/13

The Cancer Genome Atlas

This project aims to explore the entire spectrum of genomic changes involved in human cancer by comprehensively analyzing DNA copy number changes, transcription profiles, epigenetic modifications, sequence variation, and sequence in both tumor tissue and case-matched germline DNA.

Role: PI

NCI P01 CA033619 (Kolonel)

9/30/09 – 8/31/13

Molecular Epidemiology of Nutrition and Cancer in the Multiethnic Cohort Study

This study's goal is to take advantage of the newly established Multiethnic Cohort Study biorepository to conduct biomarker studies of cancer etiology and survival (using blood, DNA, and urine samples) in the Multiethnic Cohort Study.

Role: Project Leader, Co-Investigator