

BIOGRAPHICAL SKETCH

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NAME HERNANDEZ, Brenda Y.	POSITION TITLE Associate Professor (Researcher)		
eRA COMMONS USER NAME byhernandez			
EDUCATION/TRAINING <i>(Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)</i>			
INSTITUTION AND LOCATION	DEGREE <i>(if applicable)</i>	MM/YY	FIELD OF STUDY
Harvard University	BA	06/87	Biological Anthropology
Yale University School of Medicine	MPH	06/90	Epidemiology
University of Hawaii	PhD	05/99	Epidemiology

A. Personal Statement

My major research interest is the role of infection in the etiology of cancer. Human papillomavirus (HPV) is a major research focus. I have been involved in epidemiologic studies of HPV in both men and women and run an HPV testing laboratory. I am currently the PI of a CDC-funded study of HPV detection in men, Co-Investigator of an NCI-funded cohort study of HPV in females, and was previously the Project Leader of an NIH-funded investigation of the natural history of HPV in men. I am the Co-PI of the Hawai'i Tumor Registry (HTR), which is part of the Surveillance Epidemiology and End Results Program of the National Cancer Institute. The HTR monitors trends in cancer incidence and mortality in the state and maintains a repository of cancer tissue specimens for research. I developed the Cancer Center's Pathology Core laboratory, which provides histology and pathology services to support basic, epidemiologic, translational, and clinical research studies utilizing human tissue.

A. Positions and Honors.

Positions and Employment

1988-1989	Intern, Connecticut Department of Health Services, Hartford, CT
1989	Assistant-in-Research, Perinatal Epidemiology Unit, Yale University School of Medicine, New Haven, CT
1989-1991	HIV/AIDS Test Counselor, New Haven Health Department, New Haven, CT
1990-1991	HIV/AIDS Health Care Planner, New Haven Health Department, New Haven, CT
1991-1994	Research Associate IV/Outreach Coordinator, Cancer Research Center of Hawaii, Honolulu, HI
1992-1993	Research Assistant (part-time), Queen's Medical Center, Honolulu, HI
1994-1998	Graduate Assistant, Cancer Research Center of Hawaii, Honolulu, HI
1998-1999	Research Associate V/Study Coordinator, Cancer Research Center of Hawaii, Honolulu, HI
1999-present	Director, Hawaii Tumor Registry, Cancer Research Center of Hawaii, Honolulu, HI
2002-present	Assistant Researcher & Professor, Cancer Research Center of Hawaii, Honolulu, HI
2009-present	Adjunct Assistant Professor of Pathology, Department of Pathology, John A. Burns School of Medicine, Honolulu, Hawaii
2010-present	Associate Researcher & Professor, Cancer Center of Hawaii, Honolulu, HI

Honors

1994-97	Meiji Endowment for Research Training
1994-98	National Cancer Institute National Research Training Award
1999	Delta Omega Honor Society in Public Health
2004-10	Grant Reviewer, National Cancer Institute Special Emphasis Panels

B. Selected peer-reviewed publications.

1. Hernandez BY, Shvetsov YB, Goodman MT, Wilkens LR, Thompson P, Zhu X, et al. Reduced clearance of penile human papillomavirus infection in uncircumcised men. *J Infect Dis.* 2010;201(9):1340-3. PMID: 2853736.
2. Hernandez BY, Wilkens LR, Thompson PJ, Shvetsov YB, Goodman MT, Ning L, et al. Acceptability of prophylactic human papillomavirus vaccination among adult men. *Hum Vaccin.* 2010;6(6).
3. Shvetsov YB, Hernandez BY, Wilkens LR, Thompson PJ, Franke AA, Zhu X, et al. Plasma Micronutrients and the Acquisition and Clearance of Anal Human Papillomavirus Infection: The Hawaii HPV Cohort Study. *Cancer Res.* 2010.
4. Steude JS, Maskarinec G, Erber E, Verheus M, Hernandez BY, Killeen J, et al. Mammographic Density and Matrix Metalloproteinases in Breast Tissue. *Cancer Microenviron.* 2010;3:57-65. PMID: PMC2970805.
5. Hernandez BY, Green MD, Cassel KD, Pobutsky AM, Vu V, Wilkens LR. Preview of Hawaii Cancer Facts and Figures 2010. *Hawaii Med J.* 2010;69(9):223-4.
6. Goodman MT, Shvetsov YB, McDuffie K, Wilkens LR, Zhu X, Thompson PJ, et al. Sequential acquisition of human papillomavirus (HPV) infection of the anus and cervix: the Hawaii HPV Cohort Study. *J Infect Dis.* 2010;201(9):1331-9. PMID: 2851490.
7. Hernandez BY, Park SY, Wilkens LR, Henderson BE, Kolonel LN. Relationship of body mass, height, and weight gain to prostate cancer risk in the multiethnic cohort. *Cancer Epidemiol Biomarkers Prev.* 2009;18(9):2413-21. PMID: 2742565.
8. Verheus M, Maskarinec G, Erber E, Steude JS, Killeen J, Hernandez BY, et al. Mammographic density and epithelial histopathologic markers. *BMC Cancer.* 2009;9:182. PMID: 2709637.
9. Shvetsov YB, Hernandez BY, McDuffie K, Wilkens LR, Zhu X, Ning L, et al. Duration and clearance of anal human papillomavirus (HPV) infection among women: the Hawaii HPV cohort study. *Clin Infect Dis.* 2009;48(5):536-46. PMID: 2756215.
10. Maskarinec G, Erber E, Verheus M, Hernandez BY, Killeen J, Cashin S, et al. Soy consumption and histopathologic markers in breast tissue using tissue microarrays. *Nutr Cancer.* 2009;61(5):708-16. PMID: 2903450.
11. Shvetsov YB, Hernandez BY, Wong SH, Wilkens LR, Franke AA, Goodman MT. Intraindividual variability in serum micronutrients: effects on reliability of estimated parameters. *Epidemiology.* 2009;20(1):36-43. PMID: 2663917.
12. Takikita M, Altekruze S, Lynch CF, Goodman MT, Hernandez BY, Green M, et al. Associations between selected biomarkers and prognosis in a population-based pancreatic cancer tissue microarray. *Cancer Res.* 2009;69(7):2950-5. PMID: 2711977.
13. Anderson WF, Luo S, Chatterjee N, Rosenberg PS, Matsuno RK, Goodman MT, et al. Human epidermal growth factor receptor-2 and estrogen receptor expression, a demonstration project using the residual tissue repository of the Surveillance, Epidemiology, and End Results (SEER) program. *Breast Cancer Res Treat.* 2009;113(1):189-96. PMID: 2676874.
14. Hernandez BY, Barnholtz-Sloan J, German RR, Giuliano A, Goodman MT, King JB, et al. Burden of invasive squamous cell carcinoma of the penis in the United States, 1998-2003. *Cancer.* 2008;113(10 Suppl):2883-91. PMID: 2693711.
15. Goodman MT, Shvetsov YB, McDuffie K, Wilkens LR, Zhu X, Thompson PJ, et al. Prevalence, acquisition, and clearance of cervical human papillomavirus infection among women with normal cytology: Hawaii Human Papillomavirus Cohort Study. *Cancer Res.* 2008;68(21):8813-24. PMID: 2727731.
16. Hernandez BY, Wilkens LR, Zhu X, Thompson P, McDuffie K, Shvetsov YB, et al. Transmission of human papillomavirus in heterosexual couples. *Emerg Infect Dis.* 2008;14(6):888-94. PMID: 2600292.
17. Goodman MT, Shvetsov YB, McDuffie K, Wilkens LR, Zhu X, Ning L, Killeen J, Kamemoto L, Hernandez BY. Acquisition of anal human papillomavirus infection among women: the Hawaii HPV Cohort Study. *J Infect Dis.* 2008; 197(7):957-66.
18. Hernandez BY, Wilkens LR, Zhu X, McDuffie K, Thompson P, Shvetsov YB, et al. Circumcision and human papillomavirus infection in men: a site-specific comparison. *J Infect Dis.* 2008;197(6):787-94. PMID: 2596734.
19. Maskarinec G, Pagano I, Faanunu A, Hopping B, Hernandez B. The completeness of vital status information for cancer cases varies by ethnicity in the Hawaii Tumor Registry. *J Registry Management* 2007; 34(4):140-47.

20. Hernandez BY. Prophylactic HPV vaccination for the prevention of cervical cancer. *Hawaii Med J* 2007;66:190-91.
21. Goodman MT, Hernandez BY, Shvetsov YB. Demographic and pathological differences in the incidence of invasive penile cancer in the United States, 1995-2003. *Cancer Epidemiol Biomarkers Prev.* 2007;16(9):1833-39.
22. Goodman MT, Shvetsov YB, McDuffie K, Wilkens LR, Zhu X, Franke AA, Bertram CC, Kessel B, Bernice M, Sunoo C, Ning L, Easa D, Killeen J, Kamemoto L, Hernandez BY. Hawaii cohort study of serum micronutrient concentrations and clearance of incident oncogenic human papillomavirus infection of the cervix. *Cancer Res.* 2007; 67(12):5987-96.
23. Hernandez BY, McDuffie K, Goodman MT, Wilkens LR, Thompson P, Zhu X, Wong W, Ning L. Comparison of physician- and self-collected genital specimens for the detection of human papillomavirus in men. *J Clin Microbiol.* 2006; 44(2):513-17.
24. Hernandez BY, McDuffie K, Zhu X, Wilkens LR, Killeen J, Kessel B, Wakabayashi MT, Bertram CC, Easa D, Ning L, Boyd J, Sunoo C, Kamemoto L, Goodman MT. Anal HPV infection in women and its relationship with cervical infection. *Cancer Epidemiol Biomarkers Prev.* 2005; 14:2550-56.
25. Goodman MT, Hernandez BY, Hewitt S, Lynch CF, Cote TR, Frierson HF Jr, Moskaluk CA, Killeen JL, Cozen W, Key CR, Clegg L, Reichman M, Hankey BF, Edwards B. Tissues from population-based cancer registries: a novel approach to increasing research potential. *Hum Pathol.* 2005; 36(7):812-20.
26. Hernandez BY, Frierson HF, Moskaluk CA, Li YJ, Clegg L, Cote TR, McCusker ME, Hankey BF, Edwards BK, Goodman MT. CK20 and CK7 protein expression in colorectal cancer: Demonstration of the utility of a population-based tissue microarray. *Hum Pathol.* 2005; 36(3):275-81.
27. Bushley AW, Cassel K, Hernandez BY, Robinett H, Goodman MT. A tailored multi-media campaign to promote the human papillomavirus cohort study to young women. *Prev Med.* 2005; 41(1):98-101.
28. Hernandez BY, Shiramizu B. Viruses and cancer. *Hawaii Med J.* 2005;64:106-8.
29. Hernandez BY, McDuffie K, Franke AA, Killeen J, and Goodman MT. Plasma and dietary phytoestrogens and risk of premalignant lesions of the cervix. *Nutr Cancer* 2004; 49(2):109-24.
30. Hernandez BY, Goodman MT. Ethnic disparities in colorectal cancer incidence and mortality in Hawaii. *Hawaii Med J.* 2004; 63:54-6.
31. Hernandez BY, McDuffie K, Wilkens LR, Kamemoto L, Goodman MT. Diet and premalignant lesions of the cervix: evidence of a protective role for folate, riboflavin, thiamin, and vitamin B₁₂. *Cancer Causes Control* 2003; 14:859-70.
32. Hernandez BY. Highlights of recent cancer incidence data in Hawaii. *Hawaii Med J* 2003; 62:17-18.
33. Hernandez BY. The Hawaii Tumor Registry: More than forty years of cancer surveillance for the islands. *Hawaii Med J.* 2002;61:53.
34. Goodman MT, McDuffie K, Hernandez B, Wilkens LR, Bertram CC, Killeen J, Le Marchand L, Selhub J, Murphy S, Donlon TA. Association of methylenetetrahydrofolate reductase polymorphism C677T and dietary folate with the risk of cervical dysplasia. *Cancer Epidemiol Biomarkers Prev.* 2001; 10:1275-80.
35. Goodman MT, McDuffie K, Hernandez B, Bertram CC, Wilkens LR, Guo C, Seifried A, Killeen J, Le Marchand L. CYP1A1, GSTM1, and GSTT1 polymorphisms and the risk of cervical squamous intraepithelial lesions in a multiethnic population. *Gynecol Oncol.* 2001;81:263-69.
36. Goodman MT, McDuffie K, Hernandez B, Hankin JH, Wilkens LR, Franke AA, Kolonel LN, Kuypers J, Kiviat N, Bertram CC, Kessel B, Sunoo C, Nakamura J, Killeen J. The association of plasma micronutrients with the risk of cervical atypical squamous cells of undetermined significance (ASCUS). *Asian Pacific J Cancer Prev.* 2000;1:337-45.
37. Goodman MT, McDuffie K, Hernandez B, Wilkens LR, Kiviat N, Kuypers J, Kolonel LN, Hankin JH, Selhub S. Case-control study of plasma folate, homocysteine, vitamin B₁₂, and cysteine as markers of cervical dysplasia. *Cancer* 2000;89:376-82.
38. Goodman MT, Kiviat N, McDuffie K, Hankin JH, Hernandez B, Franke A, Kuypers J, Kolonel LN, Selhub J, Nakamura J, Ing G, Branch B, Bertram KK, Kamemoto L, Sharma S, Killeen J. The association of plasma micronutrients with the risk of cervical dysplasia in Hawaii. *Cancer Epidemiol Biomarkers Prev.* 1998;7:537-44.
39. Goodman MT, Hernandez B, Wilkens LR, Le Marchand L, Liu LQ, Franke A, Hsu TC. The effects of beta carotene and alpha-tocopherol on bleomycin-induced chromosomal damage. *Cancer Epidemiol Biomarkers Prev.* 1998;7:113-17.

40. Gotay CC, Issell BF, Hernandez BY, Serxner S. Barriers to mammography in a low income, multiethnic population. Hawaii Med J. 1996;55:136-40.

C. Research Support.

Ongoing Research Support

CDC MM-1132-10/10 (Hernandez) 09/29/09-09/30/11

Evaluation of genital self-sampling methods for HPV detection in males

The major goals of this project are to evaluate self-sampling methods for HPV DNA detection in males.

Role: PI

NCI U54 CA143727 (Vogel) 9/1/09 – 8/31/14

University of Guam/Cancer Research Center of Hawaii Partnership – Guam Cancer Registry

This project is a cancer registry core to this institutional partnership that will provide technical consultation and operational support to the Guam Cancer Registry and to build capacity to support the partnership's research enterprise. Role: Co-Investigator

NCI N01 PC35137 (Goodman) 8/1/03 – 7/31/17

Surveillance, Epidemiology and End Results

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: Co-Principal Investigator

NCI 3P30 CA071789-12S7 (Wong) 9/29/09 – 9/28/11

Research in Hepatocellular Carcinoma

A primary aim of this research effort is to identify and develop multivariate mRNA and microRNA expression signatures for the early-diagnosis of liver cancer in virally-infected tissue; the prediction of survival and recurrence after surgical resection and liver transplantation; and deeper insight into the network biology of carcinogenesis and progression in liver cancer. Role: Co-Investigator

CDC U58 DP000835 (Buenconsejo-Lum) 6/30/07 – 6/29/12

USAPIN Pacific Regional Central Cancer Registry

The major goal of this project is to establish a cancer registry for the Territories of American Samoa and Guam, Commonwealth of the Northern Marianas Islands, Republic of the Marshall Islands, Republic of Palau, and Federated States of Micronesia in order to collect information on all new cancer diagnoses.

Role: Epidemiologist

NCI R01 CA077318 (Goodman) 6/3/05 – 3/31/11 (nce)

Diet and Duration of Cervical HPV Infection

The major goal of this project is to evaluate dietary and plasma micronutrient levels and immune characteristics that influence the persistence of human papillomavirus (HPV) infection of the cervix.

Role: Co-Investigator

NCI P30 CA71789 (Carbone) 7/1/05 – 6/30/11 (ce)

Cancer Research Center of Hawaii

The major goal of this project is to continue to lower cancer incidence and improve the care of cancer patients in Hawaii and elsewhere by attempting to understand reasons for the remarkable ethnic-related cancer associations found in the region. Role: Pathology Shared Resource Director

NCI P01 CA33619 (Kolonel) 9/30/09-8/31/11

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: Co-Core B Director

Completed Research Support

Merck & Co. Investigators Studies Program (Hernandez) 8/1/08 – 06/30/10

Transmission of Human Papillomavirus in Male-Female Couples

The major goals of this project are 1) to measure the rate and probability of HPV transmission between male-female partners; 2) to measure the seroprevalence and seroincidence of IgG to major HPV types in male-female partners; and 3) to examine the relationship of HPV IgG with acquisition of infection.

Role: PI

NCRR P20 RR018727-01 (Yanagihara)

9/30/03 – 6/30/08

Molecular Epidemiology and Natural History of Human Papillomavirus Infection in Men.

The major goal of this research project is to understand the molecular epidemiology and natural history of HPV infection in men. Role: Project Leader

CRCH Developmental Funds (Kaopua/Hernandez)

7/15/08 – 12/31/09

Human Papillomavirus Infection and Barriers to Cervical Cancer Control in American Samoa.

The major goals of this pilot project are 1) to determine the feasibility of conducting a population-based survey of the genotype-specific prevalence of cervical HPV infection among females 18+ in American Samoa and 2) to develop and pilot a survey in English and Samoan languages to determine its feasibility in evaluating influences on utilization of HPV vaccination and cervical cytology screening in American Samoa.

Role: Co-Principal Investigator