

CURRICULUM VITAE

2019/2/6

Youyi Fong

<http://research.fhcrc.org/youyifong>

Positions

- 2016-present Associate Member, Vaccine and Infectious Disease Division and Public Health Sciences Division
Fred Hutchinson Cancer Research Center
- 2016-present Affiliate Associate Professor, Department of Biostatistics, University of Washington
- 2012-2016 Affiliate Assistant Professor, Department of Biostatistics, University of Washington
- 2010-2015 Assistant Member, Vaccine and Infectious Disease Division and Public Health Sciences Division
Fred Hutchinson Cancer Research Center

Education

- 2004-2010 Ph.D., Biostatistics, University of Washington (Jon Wakefield, Ken Rice)
- 1995-2000 Ph.D., Molecular, Cellular and Developmental Biology, Indiana University at Bloomington (Susan Strome)
- 1997-1999 M.S., Computer Science, Indiana University at Bloomington
- 1990-1995 B.S., Biochemistry, Beijing University

Refereed Articles

- † corresponding author for a joint work with a student or postdoc
- ‡ equal contribution

Threshold regression models

1. Elder, A., **Fong, Y.**† (2018) Fast grid search algorithm and model-robust inference for upper hinge generalized linear models, *Computational Statistics & Data Analysis*, under review.
2. He, Z., **Fong, Y.**†, Permar, S., Fouda, G. (2018) A non-nested hypothesis testing problem for threshold regression models with application in prevention of mother-to-child transmission of HIV, *Canadian Journal of Statistics*, under review.
3. **Fong, Y.** (2018) Fast bootstrap confidence intervals for continuous threshold linear regression, *Journal of Computational and Graphical Statistics*, in press.
4. **Fong, Y.**, Huang, Y., Gilbert, P., Permar S. (2017) chngpt: threshold regression model estimation and inference, *BMC Bioinformatics*, 18(1):454.
5. **Fong, Y.**, Di, C., Huang, Y., Gilbert, P. (2017) Model-robust inference for continuous threshold regression models, *Biometrics*, 73(2):452-462.
6. **Fong, Y.**, Di, C., Perma, S. (2015) Change point testing in logistic regression models with interaction term, *Statistics in Medicine*, 34(9):1483-1494.

Kernel methods

7. **Fong, Y.**‡, Yin, S.‡, Huang, Y. (2016) Combining biomarkers linearly and nonlinearly for classification using the area under the ROC curve, *Statistics in Medicine*, 35(21):3792-809.

8. **Fong, Y.**[‡], Datta, S.[‡], Georgiev, I., Kwong, P., Tomaras, G. (2015) Kernel-based logistic regression model for protein sequence without vectorialization, *Biostatistics*, 16(3):480-492.
9. Huang, Y., **Fong, Y.** (2014) Identifying optimal biomarker combinations for treatment selection via a robust kernel method, *Biometrics*, 70(4):891-901.

Biological assay methods

10. **Fong, Y.**, Permar, S., Tomaras, G. (2018) Four-Parameter Paired Response Curve with Application to Serial Dilution Assays, *Journal of the Royal Statistical Society Series C*, revision under review.
11. **Fong, Y.**, Yu, X. (2016) Transformation Model Choice in Nonlinear Regression Analysis of Serial Dilution Assays, *Statistics in Biopharmaceutical Research*, 8(1):1-11.
12. Cumberland, W.N., **Fong, Y.**[†], Yu, X., Defawe, O., Frahm, N., DeRosa, S. (2015) Nonlinear calibration model choice between the four and five parameter logistic models, *Journal of Biopharmaceutical Statistics*, 25(5):972-983.
13. Eckels, J., Nathe, C., Nelson, E., Shoemaker, S., Van Nostrand, E., Ashley, V., Yates, N., Harris, L., Bollenbeck, M., **Fong, Y.**, Tomaras, G., Piehler, B. (2013) Analysis, quality control and secure sharing of Luminex immunoassay data using the open source LabKey Server system. *BMC Bioinformatics*, 14(1):145-162.
14. **Fong, Y.**, Sebestyen, K., Yu, X, Gilbert, P. and Self, S. (2013) nCal: a R package for nonlinear calibration, *Bioinformatics*, 29(20):2653-2654.
15. Defawe OD, **Fong Y**, Pickett M, Vasilyeva E, Carter DK, Gabriel E, Frahm N, McElrath M.J., De Rosa SC. (2012) Optimization and qualification of a multiplex bead array to assess cytokine and chemokine production by vaccine-specific cells. *Journal of Immunological Method*, 382(1):117-128.
16. **Fong, Y.**, Wakefield, J., DeRosa, S., Frahm, N. (2012) A robust Bayesian random effects model for nonlinear calibration problems, *Biometrics*, 68(4):1103–1112.

Frequentist methods

17. He, Z., **Fong, Y.**[†] (2018) Maximum diversity weighting for biomarkers with application in HIV-1 vaccine studies, *Statistics in Medicine*, under review.
18. **Fong, Y.**, Huang, Y., Lemos, M., McElrath, J. (2018) Response to Guo et al.'s letter to the editor, *Biostatistics*, in press.
19. **Fong, Y.**, Huang, Y., Lemos, M., McElrath, J. (2018) Rank-based two-sample tests for paired data with missing values, *Biostatistics*, 19(3):281-294.
20. **Fong, Y.**, Huang, Y. (2017) Modified Wilcoxon-Mann-Whitney test and power against strong null, *The American Statistician*, in press.
21. **Fong, Y.**, Gilbert P. (2015) Calibration weighted estimation of semiparametric transformation models for two-phase sampling, *Statistics in Medicine*, 34(10):1695-1707.
22. Huang, Y., **Fong, Y**, Wei, J., and Feng Z. (2011) Borrowing information across populations in evaluating PPV and NPV. *Journal of the Royal Statistical Society C*, 60(5):633-653.

Bayesian methods

23. **Fong, Y.**, Wakefield, J., Rice, K. (2012) An efficient Markov chain Monte Carlo method for mixture models by neighborhood pruning. *Journal of Computational and Graphical Statistics*, 21(1):197-216.

24. **Fong, Y.**, Rue, H., Wakefield, J. (2010) Bayesian inference for generalized linear mixed models. *Biostatistics*, 11(3):397-412.
25. **Fong, Y.**, Wakefield, J., Rice, K. (2010) Bayesian mixture modeling using hybrid sampler with application to protein subfamily identification. *Biostatistics*, 11(1):18-33.
26. **Fong, Y.**, Guttorp, P., Abkowitz, J. (2009) Bayesian inference and model choice in a hidden stochastic two-compartment model of hematopoietic stem cell fate decisions. *Annals of Applied Statistics*, 3(4):1695-1709.

Infectious diseases

27. Gilbert, P., **Fong, Y.**, Juraska, M., Carpp, L.N., Monto, A.S., Martin, E.T., Petrie, J.G. (2018) HAI and NAI titer correlates of inactivated and live attenuated influenza vaccine efficacy, *BMC Infectious Disease*, under review.
28. **Fong, Y.**, Halloran, E.M., Park, J.K., Marks, F., Clemens, J.D., Chao, D.L. (2018) Efficacy of a bivalent killed whole-cell cholera vaccine over five years: a re-analysis of a cluster-randomised trial, *BMC Infectious Disease*, in press.
29. **Fong, Y.**, Shen, X., Ashley, VC, Deal, A, Seaton, KE, Yu, C, Grant, SP, Ferrari, G, deCamp, AC, Bailer, RT, Richard A. Koup, David Montefiori, Barton F. Haynes, Marcella Sarzotti-Kelsoe, Barney S. Graham, Lindsay N. Carpp, Scott M. Hammer, Magda Sobieszczyk, Shelly Karuna, Edith Swann, Edwin DeJesus, Mark Mulligan, Ian Frank, Susan Buchbinder, Novak RM, McElrath MJ, Kalams S, Keefer M, Frahm NA, Janes, HE, Gilbert, PB, Tomaras, GD (2018) Vaccine-induced antibody responses modify the association between T-cell immune responses and HIV-1 infection risk in HVTN 505. *Journal of Infectious Diseases*, 217(5):693-702.
30. Moodie, Z., Juraska, M., Huang, Y., Zhuang, Y., **Fong, Y.**, Carpp, L.N., Self, S.G., Chambonneau, L., Small, R., Jackson, N., Noriega, F., Gilbert, P.B. (2018) Neutralizing Antibody Correlates Analysis of Tetravalent Dengue Vaccine Efficacy Trials in Asia and Latin America. *Journal of Infectious Diseases*, 217(5):742-753.
31. Murphy, SC, Duke, ER, Shipman, KJ, Jensen RL, **Fong, Y**, Ferguson, S, Janes HE, Gillespie K, Seilie AM, Hanron AE, Rinn L, Fishbaugher M, VonGoedert T, Fritzen, E, Kappe, SH, Chang, M, Sousa, JC, Marcsisin, SR, Chalon, S, Duparc, S, Kerr N, Möhrle JJ, Andenmatten N, Rueckle, T, Kublin, JG. (2017) A randomized trial of the prophylactic activity of DSM265 against pre-erythrocytic Plasmodium falciparum controlled human malaria infection by mosquito bites and direct venous inoculation, *Journal of Infectious Diseases* 217(5):693-702.
32. Mwenda, R, **Fong, Y**, Magombo, T, Saka, E, Mwase, C, Kandulu, J, Wang, M, Sherman, J, Vojnov, L. (2018) Significant patient impact observed upon implementation of point-of-care early infant diagnosis technologies in an observational study in Malawi. *Clinical Infectious Diseases*, in press.
33. Kiyaga, C, Urick B, **Fong, Y.**, Okiira C, Nabukeera-Barungi, N, Nansera, D, Ochola, E, Nteziyaremye, J, Bigira V, Ssewanyana, I, Olupot-Olupot P, Peter T, Ghadrshenas, A, Vojnov, L (2018) Where have all the children gone? High HIV prevalence in infants attending nutrition and inpatient entry points. *Journal of the International AIDS Society*, 21(2):e25089.
34. Urick B, **Fong Y**, Okiira C, Barungi N, Nansera D, Ochola E, Nteziyaremye J, Bigira V, Ssewanyana I, Olupot-Olupot P, Peter T, Ghadrshenas, A, Lara Vojnov, L, Kiyaga, C (2018) Rapid serological tests ineffectively screen for HIV exposure in HIV-positive infants. *Journal of Acquired Immune Deficiency Syndromes*, 77(3): 331–336.
35. McGuire, E.P., **Fong, Y.**, Toote, C., Cunningham, C.K., McFarland, E.J., Borkowsky, W., Barnett, S., Itell, H.L., Kumar, A., Gray, G. McElrath, M.J., Tomaras, G.D., Permar, S.R. and Fouda G.G. (2017). HIV exposed infants vaccinated with a MF59/rgp120 vaccine have higher magnitude anti-V1V2 IgG responses than adults immunized with the same vaccine. *Journal of Virology*, 92(1). pii: e01070-17.

36. Lemos, M.P., Karuna, S.T., Mize, G., **Fong, Y.**, Lama, J.R., Montano, S.M., Ganoza, C., Sanchez, J., McElrath, M.J. (2016) In Men at Risk of HIV Infection, IgM, IgG1, IgG3 and IgA Can Reach the Human Foreskin Epidermis. *Journal of Immunology*, 9(3):798-808.
37. Prentice, H.A., Geraghty, D.E., Tomaras, G.D., **Fong, Y.**, Nelson, W., Gustavo H. Kijak, Susan Zolla-Pazner, Philip K. Ehrenberg, Sorachai Nitayaphan, Supachai Rerks-Ngarm, Jaranit Kaewkungwal, Punnee Pitisuttithum, Robert J. O'Connell, Merlin L. Robb, Barton F. Haynes, Nelson L. Michael, Peter Gilbert, Jerome H. Kim, Rasmi Thomas. (2015) HLA Class II Genes Modulate Humoral Immune-Correlates of HIV-1 Acquisition Risk Identified in a HIV-1 Vaccine Efficacy Trial. *Science Translational Medicine*, 7(296):296ra112.
38. Kahle, EM, Bolton, M, Hughes, JP, Donnell, D, Celum, C, Lingappa, JR, Ronald, A, Cohen, CR, de Bruyn, G, **Fong, Y**, Katabira, E, McElrath, MJ, Baeten, JM, for the Partners in Prevention HSV/HIV Transmission Study Team (2015) Plasma cytokine levels and risk of HIV-1 transmission and acquisition: a nested case-control study among HIV-1 serodiscordant couples. *Journal of Infectious Disease*, 211(9):1451-1460.
39. Permar, SR, **Fong, Y**, Vandergrift, N, Fouda, GG, Gilbert, P, Parks, R, Jaeger, FH, Pollara, J, Martelli, A, Liebl, BE, Lloyd, K, Yates, NL, Overman, RG, Shen, X, Whitaker, K, Chen, H, Pritchett, J, Solomon, E, Friberg, E, Marshall, DJ, Whitesides, JF, Gurley, TC, Von Holle, T, Martinez, DR, Cai, F, Kumar, A, Xia, SM, Lu, X, Louzao, R, Wilkes, S, Datta, S, Sarzotti-Kelsoe, M, Liao, HX, Ferrari, G, Alam, SM, Montefiori, DC, Denny, TN, Moody, MA, Tomaras, GD, Gao, F, Haynes, BF. (2015) Maternal HIV-1 Envelope variable loop 3-specific IgG responses and reduced risk of perinatal transmission. *Journal of Clinical Investigation*, 125(7):2702-2706.
40. Gartland AJ, Li S, McNevin J, Tomaras GD, Gottardo R, Janes H, **Fong Y**, Morris D, Geraghty DE, Kijak GH, Edlefsen PT, Frahm N, Larsen BB, Tovanabuttra S, Sanders-Buell E, deCamp AC, Magaret CA, Ahmed H, Goodridge JP, Chen L, Konopa P, Nariya S, Stoddard JN, Wong K, Zhao H, Deng W, Maust BS, Bose M, Howell S, Bates A, Lazzaro M, O'Sullivan A, Lei E, Bradfield A, Ibitamuno G, Assawadarachai V, O'Connell R.J, deSouza MS, Nitayaphan S, Rerks-Ngarm S, Robb ML, Sidney J, Sette A, Zolla-Pazner S, Montefiori D, McElrath MJ, Mullins J, Kim JH, Gilbert PB, Hertz T. (2014) Analysis of HLA A*02 association with vaccine efficacy in the RV144 HIV-1 vaccine trial. *Journal of Virology*, 88(15):8242-55.
41. Li, S. S., Gilbert, P. B., Tomaras, G. D., Kijak, G., Ferrari, G., Thomas, R., Pyo, C.-W., Zolla-Pazner, S., Montefiori, D., Liao, H.-X., Nabel, G., Pinter, A., Evans, D. T., Gottardo, R., Dai, J. Y., Janes, H., Morris, D., **Fong, Y.**, Edlefsen, P. T., Li, F., Frahm, N., Alpert, M. D., Prentice, H., Rerks-Ngarm, S., Pitisuttithum, P., Kaewkungwal, J., Nitayaphan, S., Robb, M. L., O'Connell, R. J., Haynes, B. F., Michael, N. L., Kim, J. H., McElrath, M. J., and Geraghty, D. E. (2014), FCGR2C polymorphisms associate with HIV-1 vaccine protection in RV144 trial, *The Journal of Clinical Investigation*, 124, 3879-3890.
42. Lemos, M.P., Lama, J.R., Karuna, S.T., **Fong, Y.**, Silvia M. Montano, Carmela Ganoza, Raphael Gottardo, Jorge Sanchez, M. Juliana McElrath. (2014) The inner foreskin of healthy men contains increased epithelial CD4+ CCR5+ cells and has features of an inflamed epidermal barrier. *PLoS One*, 9(9):e108954.
43. Schiffer, J.T., Mayer, B., **Fong, Y.**, Swan, D., Wald, Anna (2014) HSV-2 transmission probability estimates based on quantity of viral shedding. *Journal of the Royal Society Interface*, 11(95):20140160.
44. Johnston, C, Zhu, J, Jing, L, Laing, KJ, McClurkan, CM, Klock, A, Diem, K, Jin, L, Stanaway, J, Tronstein, E, Kwok, WW, Huang, ML, Selke, S, Fong, Y, Magaret, A, Koelle, DM, Wald, A, Corey, L (2014) Virologic and immunologic evidence of multifocal genital herpes simplex virus type 2 infection. *Journal of Virology*, 88(9): 4921-4931.
45. Zolla-Pazner, S, deCamp, A., Gilbert, P.B., Williams, C., Williams, W., Howington, R., Yates, N., Ashley, V., **Fong, Y.**, Morris, D., Soderberg, K.A., Pinter, A., Nabel, G., Parks, R., Rerks-Ngarm,

- S., Nitayaphan, S., Kim, J., Michael, N.L., Montefiori, D.C., Liao, H.X., Haynes, B.F., and Tomaras, G.D. (2014) Vaccine-induced IgG Antibodies to V1V2 Regions of Multiple HIV-1 Subtypes Correlates with Decreased Risk of HIV-1 Infection. *PLoS One*, (2), e87572.
46. Yates, N., Liao H., **Fong, Y.**, Vandergrift, N., Alam, S., Ferrari, G., Gilbert, P., Berman, P., Francis, D., Sinangil, F., Lee, C, Nitayaphan, S., Rerks-Ngarm, S., Kaewkungwal, J., Pitisuttithum, P., Tartaglia, J, Michael, N., Kim, J., Montefiori, D., Haynes, B., Tomaras, G. (2014) HIV-1 Env V1/V2 IgG3 Responses Correlate with Decreased Transmission Risk in the RV144 Trial and Distinguish Vaccine-Elicited Humoral Responses from the VAX003 Vaccine Trial. *Science Translational Medicine*, 6:(228), 228ra39.
 47. Liu, P., Yates, N. L., Shen, X., Bonsignori, M., Moody, M. A., Liao, H.-X., **Fong, Y.**, Alam, S. M., Overman, R. G., Denny, T., Ferrari, G., Ochsenbauer, C., Kappes, J. C., Polonis, V., Pitisuttithum, P., Kaewkungwal, J., Nitayaphan, S., Rerks-Ngarm, S., Montefiori, D. C., Gilbert, P., Michael, N. L., Kim, J. H., Haynes, B. F., and Tomaras, G. D. (2013) Heterologous Infectious Virion Capture by HIV-1 gp120 Specific IgG from RV144 Vaccinees. *Journal of Virology*, 87(14) 7828-7836.
 48. Tomaras, G., Ferrari, G., Shen, X., Alam, S., Liao, H., Pollara, J., Bonsignori, M., Moody, M., **Fong, Y.**, Chen, X., Nicholson, C., Polin, B., Zhang, R., Lu, X., Parks, R., Kaewkungwal, J., Nitayaphan, S., Pitisuttithum, P., Rerks-Ngarm, S., Gilbert, P., Kim, J., Michael, N., Montefiori, D., Haynes, B. (2013) HIV-1 vaccine-induced envelope gp120 C1-region IgA mitigates binding and effector function of gp120 IgG. *Proceedings of the National Academy of Sciences*, 110(22) 9019–9024.
 49. Haynes BF, Gilbert PB, McElrath JM, Zolla-Pazner S, Tomaras GD, Alam SM, Evans DT, Montefiori DC, Karnasuta C, Sutthent R, Liao H-X, DeVico AL, Lewis GK, Williams C, **Fong Y**, Janes H, DeCamp A, Huang Y, Rao M, Billings E, Karasavvas N, Robb ML, Ngauy V, deSouza MS, Paris R, Ferrari G, Bailer RT, Soderberg K, Andrews C, Berman PW, Frahm N, DeRosa SC, Alpert MD, Yates NL, Shen X, Koup RA, Pitisuttithum P, Kaewkungwal J, Nitayaphan S, Rerks-Ngarm S, Michael NL, Kim JH. (2012) Immune correlates analysis of the ALVAC-AIDSVAX HIV-1 vaccine efficacy trial. *New England Journal of Medicine*, 366(14), 1275-1286.

Molecular, Cellular, and Developmental Biology

50. Bender, L. B., Suh, J., Carroll, C. R., **Fong, Y.**, Fingerman, I. M., Briggs, S. D., Cao, R., Zhang, Y., Reinke, V., and Strome, S. (2006) MES-4: an autosome-associated histone methyltransferase that participates in silencing the X chromosomes in the *C. elegans* germ line. *Development* 133, 3907-3917.
51. **Fong, Y.**, Bender, L., Wang, W., and Strome, S. (2002) Regulation of the Different Chromatin States of Autosomes and X Chromosomes in the Germ Line of *C. elegans*. *Science* 296, 2235-2238.
52. Xu, L., **Fong, Y.**, and Strome, S. (2001) The *Caenorhabditis elegans* maternal-effect sterile proteins, MES-2, MES-3, and MES-6, are associated in a complex in embryos. *Proceedings of the National Academy of Sciences*, 98, 5061-5066.

Research Support

Statistical methodology grants

- R01 AI122991, 2016 – 2021, NIH/NIAID. Statistical methods for HIV-1 immune correlates studies. Principal investigator.
- R56 AI116369, 2015 – 2016, NIH/NIAID. Methods for immune biomarkers measurement, preprocessing and association studies. Principal investigator.
- R03 AI104370, 2013 – 2015, NIH/NIAID. Improved methods for assessing immune correlates in HIV-1 vaccine trials. Principal investigator.

Select collaborative research grants

- UM1 AI068618 (Gilbert), 2013-2020, NIH/NIAID. SDMC: HIV Vaccine Trials Network. Faculty statistician.
- R01 AI131978 (Fouda Amou’Ou) 2017-2022, NIH/NIAID. Functional Profile to HIV vaccine elicited antibodies in infants. Co-Investigator
- Sanofi Pasteur, Inc. Collaborative Research on Dengue Chimerivax vaccine. Faculty statistician.

Invited Presentations

Local and network

- Optimal trial design for experimental medicine, *HVTN Investigators Meeting, Seattle WA 2018*
- Algorithm, inference and applications for continuous threshold GLMs, *Vaccine and Infectious Disease Division (VIDD) Scientific Seminar, Seattle WA 2018*
- Vaccine-induced antibody responses modify the association between T-cell immune responses and HIV-1 infection risk in HVTN 505, *HVTN Full Group Meeting Plenary, Seattle WA 2017*
- Neutralizing Antibody Correlates of Risk and Protection Analysis of the First Licensed Dengue Vaccine (CYD-TDV), *Dengue Research Consortium Meeting, Orlando FL 2017*
- Humoral immune response correlates of risk analysis in the HVTN 505 trial. *HVTN Laboratory Meeting, Fred Hutchinson Cancer Research Center, Seattle WA 2016*
- Improving Immune Response Measurements from Serial Dilution Assays Using Paired Response Plot and Curve. *9th Annual Collaboration for AIDS Vaccine Discovery (CAVD) Meeting, Seattle WA 2014*
- On the lookout for threshold effect. *Vaccine and Infectious Disease Division, Fred Hutchinson Cancer Research Center, Seattle WA, 2013*
- Combining biomarkers nonlinearly for classification using the Area Under the ROC Curve. *Department of Biostatistics, University of Washington, Seattle WA, 2012*
- Measurement errors and Luminex data analysis. *5th Annual Collaboration for AIDS Vaccine Discovery (CAVD) Meeting, Seattle WA, 2010*
- Ruminex: an R package for Luminex data analysis. *HIV Vaccine Trials Network (HVTN) Conference, Seattle WA, 2010*

National and international

- Fast Estimation, Robust Inference and Hypothesis Testing for Continuous Threshold Regression Models, *Division of Biostatistics and Bioinformatics, Johns Hopkins University School of Medicine, 2018*
- Robust estimation of threshold regression models, *School of Statistics, Jiangxi University of Finance and Economics, China 2017*
- Model-robust inference for threshold regression models, *Joint Statistical Meetings, Baltimore, MD, 2017*
- Calibration weighted estimation of semiparametric transformation models for two-phase sampling, *Conference on Lifetime Data Science, University of Connecticut, Conn, CT, 2017*
- Kernel methods for AUC-based classification, treatment selection, and regression modeling of protein sequences, *Department of Biostatistics, University of Florida 2017*

- Kernel methods for AUC-based classification, treatment selection, and regression modeling of protein sequences, *Department of Epidemiology and Biostatistics, University of South Florida 2017*
- Model-Robust Inference for Threshold Regression Models, *Department of Biostatistics, Vanderbilt University Medical School, 2016*
- Model-robust Inference for Continuous Change Point Models, *International Indian Statistical Association Conference on Statistics, Oregon State University, Corvallis OR, 2016*
- Mixture Model Approach to Estimating a Nonlinear Errors-in-Variables Model for Serial Dilution Assay, *Joint 24th ICSA Applied Statistics Symposium and 13th Graybill Conference, Colorado State University, Fort Collins CO, 2015*
- Mutual Information Kernel-based Logistic Regression Models For Protein Sequence, *Annual meeting of the Western North American Region (WNAR) of the International Biometric Society (IMS invited), Honolulu HI, 2014*
- Algorithms and inference for mixture models with application to protein sequence analysis. *Annual meeting of the Western North American Region (WNAR) of the International Biometric Society (IMS invited), San Luis Obispo, CA, 2011*
- Algorithms and inference for mixture models with application to protein sequence analysis. *Department of Biostatistics, Johns Hopkins University, Baltimore MD, 2010*
- Algorithms and inference for mixture models with application to protein sequence analysis. *Department of Biostatistics, Harvard University, Boston MA, 2010*

Contributed Presentations

- Nonlinear Models for Immunological Assay Outcome from Two Dilutions. *XXVIIIth International Biometrical Conference, Victoria, Canada 2016.*
- Functional and Structural Inference for a Nonlinear Errors-in-Variables Model with Application To Serial Dilution Assay Analysis. *The IMS-China International Conference on Statistics and Probability. 2015*
- AUC Maximization via Difference of Convex Functions Methods *The Ninth ICSA International Conference: Challenges of Statistical Methods for Interdisciplinary Research and Big Data. 2013*
- Nonlinear Calibration Model Choice in Immune Correlates Analysis of HIV-1 Vaccine Trial. *The IMS-China International Conference on Statistics and Probability. 2013*
- Mutual Information Kernel Logistic Models with Application in HIV Vaccine Studies. *Annual meeting of the Eastern North American Region (ENAR) of the International Biometric Society. 2013*
- Combining Biomarkers Nonlinearly for Classification Using the Area Under the ROC Curve. *XXVIIth International Biometrical Conference 2012.*
- Robust Bayesian Random Effects Model for Nonlinear Calibration Problems. *Annual meeting of the Western North American Region (WNAR) of the International Biometric Society. 2011*
- An efficient Markov Chain Monte Carlo method for mixture models by neighborhood pruning. *13th Institute of Mathematical Statistics New Researchers Conference (NRC). 2010*
- An efficient Markov Chain Monte Carlo method for mixture models by neighborhood pruning. *Annual meeting of the Eastern North American Region (ENAR) of the International Biometric Society. 2010*

Teaching Activities

- Courses
 - Co-Instructor. University of Washington, Biostatistics 511, *Medical Biometry I*, 2012 Fall
 - Instructor, University of Washington, Statistics/CS&SS 564, *Bayesian statistical methods*, 2012 Spring
- Guest Lectures
 - Clustering Methods, Columbia University, Biostatistics P8129, *Theory of Multivariate Analysis*, 2010

Honors and Awards

- 2018 Bonnie Mathieson Young Investigator Award, HIV Vaccine Trials Network
- 2010 Gilbert S. Omenn Award, University of Washington School of Public Health
- 2004 Top Scholar Award, University of Washington Graduate School
- 1997 Grants-in-Aid of Research, Sigma Xi, The Scientific Research Society
- 1995 Molecular Biology Institute Fellowship, Indiana University at Bloomington

Professional Activities

- Local activities
 - Member, Fred Hutchinson Translational Data Science Integrated Research Center 2019-current
 - Member, VID D Appointment and Promotion committee 2017-current
 - Member, VID D search committee for Biostatistics faculty, 2016
 - Member, VID D staff scientist promotion committee 2013-2015
 - Member, VID D search committee for computational immunologist faculty, 2013
 - Member, Fred Hutchinson Scientific Computing Information Technology Resource and Policy Committee (SciTRAP) 2014
 - Member, Fred Hutchinson/University of Washington Cancer Consortium Immunology and Vaccine Development Program
- Grants/scholarships review activities
 - Reviewer for HVTN Research and Mentorship Program (RAMP) Scholar Program for African-American and Latinx Medical Students, 2019
 - Reviewer for University of Washington Department of Biostatistics Career Development Proposals, 2018
 - External reviewer for xxx School of Medicine Department of Biostatistics Internal Funding Award, 2017
- Conference organization
 - Program chair, ASA Biometrics Section, for JSM 2018
 - Local Organizing Committee Co-chair, International Biometric Conference (IBC), Victoria, Canada, 2016

- Invited sessions organized
 - *Challenges and Advances in Statistical Inference for Problems with Nonregularity in the Era of Big Data* at JSM 2017
 - *The Application of Latent Variable and Mixture Models to the Biological Sciences* at ICSA/Graybill Conference 2015 (jointly with Nathan Vandergrift)
 - *Hypothesis Testing and Estimation for Kernel-based Regression Models and Other Models* at IMS/WNAR 2014 (jointly with Chongzhi Di)
- Referee for *Journal of the American Statistical Association*, *Biometrics*, *Biostatistics*, *Annals of Applied Statistics*, *Statistics in Medicine*, *Statistical Science*, *Contemporary Clinical Trials*, *Journal of Clinical Oncology*, *Journal of Immunological Methods*, *Vaccine*, *Journal of Statistical Computation and Simulation*, *Journal of Royal Statistical Society Series C*, *Nature Medicine*, *BMC Immunology*, *Computers in Biology and Medicine*
- Member of *American Statistical Association*, *International Society for Bayesian Analysis*, *International Chinese Statistical Association*, *Western North American Region of The International Biometric Society*

Softwares

- R packages on the Comprehensive R Archive Network (CRAN):
 - aucm Linear and nonlinear marker combination for AUC maximization
 - chngpt Threshold regression regression model estimation and hypothesis testing
 - krm Kernel machine random effects regression model
 - kyotil Collection of utility function
 - nCal Nonlinear calibration and curve fitting
 - prc Paired response curve
 - robustrank Robust rank-based tests for partially matched two-sample data
 - sptm Semiparametric transformation model estimation under two-phase sampling
- C/C++ application: Protein subfamilies detection tool