AASTHAA BANSAL

Curriculum Vitae
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CONTACT INFORMATION

The Comparative Health Outcomes, Policy, and Economic (CHOICE) Institute
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EDUCATION

- Ph.D. Biostatistics, University of Washington, Seattle, WA — 2011
  Title: Combining Biomarkers to Improve Performance in Diagnostic Medicine
- M.S. Biostatistics, University of Washington, Seattle, WA — 2008
- B.Math. Honors Computer Science: Bioinformatics Option, University of Waterloo, Waterloo, ON — 2006

RESEARCH & PROFESSIONAL EXPERIENCE

- Joint Associate Professor, Division of Public Health Sciences, Fred Hutchinson Cancer Research Center — 2020-Present
- Associate Professor, The Comparative Health Outcomes, Policy, and Economic (CHOICE) Institute, Department of Pharmacy, University of Washington — 2019-Present
- Joint Assistant Member, Division of Public Health Sciences, Fred Hutchinson Cancer Research Center — 2015-Present
- Assistant Professor, Department of Pharmacy, University of Washington — 2018-2019
- Research Assistant Professor, Department of Pharmacy, University of Washington — 2013-2018
- Post-doctoral Senior Fellow, Department of Biostatistics, University of Washington — 2012-2013
- Research Assistant, Center for Biomedical Statistics, University of Washington — 2009-2011
- Research Assistant, Biostatistics & Biomathematics, Fred Hutchinson Cancer Research Center — 2007-2009
- Research Assistant, Department of Biostatistics, University of Washington — 2006-2007

AWARDS & HONORS

- Bernie J. O'Brien New Investigator Award, International Society for Pharmacoeconomics and Outcomes Research (ISPOR) — 2020
- Method to Extend Research In Time (MERIT) Award, National Cancer Institute — 2018-2025
- Outstanding Mentor Award Nominee, School of Pharmacy, University of Washington — 2017
- Best New Investigator Poster Presentation, ISPOR Annual Meeting — 2016
- Best New Investigator Podium Presentation, ISPOR Annual Meeting — 2015
- Research Starter Grant in Health Outcomes, Pharmaceutical Research and Manufacturers of America (PhRMA) Foundation — 2015
- Young Investigator Award, Section on Statistics in Epidemiology, American Statistical Association — 2011
- Student Oral Presentation 2nd place, Western North American Region, International Biometric Society — 2010
- Best Student Poster (voted by faculty), Department of Biostatistics, University of Washington — 2009
- Best Student Poster (voted by 1st year students), Department of Biostatistics, University of Washington — 2009
- Ireland Canada University Foundation Scholarship — 2005
- Work-term Report Award, Faculty of Mathematics, University of Waterloo — 2003
- University of Waterloo Entrance Scholarship — 2001
- Queen Elizabeth II Aiming for the Top Scholarship, Government of Ontario — 2001-2006

ARTICLES IN REFEREED JOURNALS (*TRAINEE AUTHOR, +SENIOR AUTHOR)

1. Hershman DL, **Bansal A**, Barlow WE, Arnold KB, Watabayashi K, Bell-Brown A, Sullivan SD, Lyman G, Ramsey SD. Intervention non-adherence in The TrACER (S1415CD) study, a pragmatic randomized trial of a standardized order entry for colony stimulating factor prescribing. *Journal of Clinical Oncology: Oncology Practice*, in press.

2. Rodriguez P*, Heagerty PJ, Clark S, Haupt E, Hahn EE, Shankaran V, Khor S, Chen Y, **Bansal A+**. Using machine learning to leverage biomarker change and predict colorectal cancer recurrence. *Journal of Clinical Oncology: Clinical Cancer Informatics*, in press.

3. Khor S*, Haupt E, Hahn EE, Shankaran V, **Bansal A+**. Examining the effect on racial bias of omitting race from risk prediction models for colorectal cancer recurrence, *JAMA Network Open*. 2023 Jun 1;6(6):e2318495. doi: 10.1001/jamanetworkopen.2023.18495. PubMed PMID: 37318804; PubMed Central PMCID: PMC10273018.

   In the news:

   - STATNews. Getting rid of bias in clinical calculators isn't as simple as taking race out of the equation; June 16, 2023.

   - Healio/HemoOnc Today. Omitting impact of race, ethnicity results in less accurate cancer risk prediction models; June 16, 2023.

   - MedScape. Race and Ethnicity in CRC Recurrence Risk Algorithms?; June 20, 2023

4. Ramsey SD, **Bansal A**, Fuchs EJ, O'Donnell PV, Eapen M, Shah ND, Sangaralingham LR, ThaoV, Steuten LMG, Roth JA. Cost-Effectiveness of Unrelated Umbilical Cord Blood vs HLA Haploidentical Related Bone Marrow Transplant: Evidence from BMT CTN 1101. *Transplantation and Cellular Therapy*, in press.

5. Khor S*, Heagerty PJ, Basu A, Haupt E, Lyons LJ, Hahn EE, **Bansal A+**. Racial and Ethnic Disparities in the Accuracy of Electronic Health Record-based Proxy for Cancer Recurrence: A Retrospective Cohort Study. *Journal of Clinical Oncology: Clinical Cancer Informatics*, 2023 Jun;7:e2300004. doi: 10.1200/CCI.23.00004. PubMed PMID: 37267516.

6. Chen Y*, Shankaran V, Hahn EE, Haupt E, **Bansal A+**. Underutilization or Appropriate Care? Assessing Adjuvant Chemotherapy Use and Survival in Three Heterogenous Subpopulations with Stage II/III Colorectal Cancer within a Large Integrated Health System. *Journal of Managed Care + Specialty Pharmacy*, 2023 Jun;29(6):635-646. doi: 10.18553/jmcp.2023.29.6.635. PubMed PMID: 37276035.

7. Canestaro WJ*, Devine EE, **Bansal A**, Sullivan SD, Carlson JJ. Adjustment of publication bias via a cumulative meta-analytic framework. *International Journal of Technology Assessment in Health Care*, in press.

8. Bell-Brown A, Watabayashi K, Kreizenbeck K, **Bansal A**, Barlow WE, Lyman G, Hershman DL, Mercurio A, Segarra B, Sullivan SD, Ramsey SD. An Evaluation of Stakeholder Engagement in Comparative Effectiveness Research: Lessons Learned from SWOG S1415CD. *Journal of Comparative Effectiveness*, in press.

9. Wang WJ, **Bansal A**, Bennette CS, Basu A (2022). Mimicking clinical trials using real-world data – A novel method and applications. *Medical Decision Making*, in press.

10. Naranjo D, Beaver K, Doll J, Maynard C, **Bansal A**, Helfrich CD (2023). Practice pattern variation in adoption of new and evolving percutaneous coronary intervention procedures. *Journal of Interventional Cardiology*, vol. 2023, Article ID 2488045, 6 pages.

11. Hershman DL, **Bansal A**, Sullivan SD, Barlow WE, Arnold KB, Watabayashi K, Bell-Brown A, Le-Lindqwister NA, Dul CL, Brown-Glaberman UA, Behrens RJ, Vogel V, Alluri N, Ramsey SD (2022). A Pragmatic Cluster-Randomized Trial of a Standing Order Entry Intervention for Colony Stimulating Factor Use among Patients at Intermediate Risk for Febrile Neutropenia. *Journal of Clinical Oncology*, Oct 13:JCO2201258. doi: 10.1200/JCO.22.01258. Online ahead of print.

12. Ramsey SD, **Bansal A**, Sullivan SD, Lyman G, Barlow WE, Arnold K, Watabayashi K, Bell-Brown A, Kreizenbeck K, Le-Lindqwister NA, Dul CL, Brown-Glaberman UA, Behrens RJ, Vogel V, Alluri N, Hershman D (2022). Effects of a Guideline-Informed Clinical Decision Support System Intervention to Improve Colony-

Stimulating Factor Prescribing: A Cluster Randomized Clinical Trial. *JAMA Network Open*, 5(10):e2238191. doi:10.1001/jamanetworkopen.2022.38191.

13. Suh K*, Shankaran V, **Bansal A+** (2022). Surveillance test utilization and value among commercially insured colorectal cancer patients. *American Journal of Managed Care*, 28(5): e163-e169. doi: 10.37765/ajmc.2022.89147. PubMed PMID: 35546589; PubMed Central PMCID: PMC9316744.

14. Bacci J, Rodriguez PJ, Hansen R, Marcum Z, **Bansal A**, Odegard P (2022). Community pharmacy intervention to close stain gaps in diabetes care: The GuIDE-S study. Journal of the American Pharmacists Association. S1544-3191(22)00295-3. doi: 10.1016/j.japh.2022.08.025. Online ahead of print.

15. Lee W*, Schwartz N*, **Bansal A**, Khor S, Hammarlund N, Basu A, Devine B. A scoping review of the use of machine learning in health economics and outcomes research: Part 1 – Data from wearable devices. *Value in Health*. 2022;S1098-3015(22)02145-3. doi:10.1016/j.jval.2022.08.005. Online ahead of print.

16. Lee W*, Schwartz N*, **Bansal A**, Khor S, Hammarlund N, Basu A, Devine B. A scoping review of the use of machine learning in health economics and outcomes research: Part 2 – Data from non-wearables. *Value in Health*, 2022;S1098-3015(22)02107-6. doi:10.1016/j.jval.2022.07.011. Online ahead of print.

17. Ramos KJ, Wai TH, Stephenson AI, Sykes J, Stanojevic S, Rodriguez PJ, **Bansal A**, Mayer-Hamblett N, Goss CH, Kapnadak SG (2022). Prognostic model of 2-year death or lung transplant for severe cystic fibrosis lung disease. *Chest*, 162(4):757-767.

18. Watabayashi K, Bell-Brown A, Kreizenbeck K, Egan K, Lyman G, Hershman D, Arnold K, **Bansal A**, Barlow WE, Sullivan SD, Ramsey SD (2022). Successes and challenges of implementing a cancer care delivery intervention in community oncology practices: lessons learned from SWOG S1415CD. *BMC Health Services Research*, 22(1):432.

19. Rodriguez P*, Veenstra DL, Goss CH, Heagerty PJ, Ramos KJ, **Bansal A+** (2022). A framework for using real-world data and health outcomes modelling to evaluate ML risk prediction models. *Value in Health*, 25(3): 350-358.

20. **Bansal A**, Heagerty PJ, Inoue LYT, Veenstra DL, Wolock CJ, Basu A (2022). A value of information framework for personalizing the timing of surveillance testing. *Medical Decision Making*, 42(4): 474-486.

21. Wang WJ*, Ramsey SD, Bennette CS, **Bansal A+** (2021). Racial disparities in the availability of prostate cancer clinical trials: A county-level analysis. *JNCI Cancer Spectrum*, 6(1):pkab093. doi:10.1093/jncics/pkab093.eCollection 2022 Feb.

22. Kim A*, Devine EE, Campbell J, Shirneshan E, Zhao C, **Bansal A+** (2021). Characterizing the healthcare resource utilization and costs in patients with geographic atrophy secondary to age-related macular degeneration stratified by disease severity. *Clinical Ophthamology*, 15: 2643-2651.

23. Hendrix ND*, Hauber A, Lee CI, **Bansal A**, Veenstra DL (2021). Artificial intelligence in breast cancer screening: Primary care provider preferences. *Journal of the American Medical Informatics Association*, 28(6): 1117-1124.

24. Wang WJ*, Devine EE, **Bansal A**, White HS, Basu A (2021). Meta-analyzing count events over varying durations using the convoluted Poisson model: The case for post stroke seizures. *Research Synthesis Methods*, 12(3): 347-356.

25. Clark S*, Marcum ZA, Radich J, **Bansal A+** (2021). Predictors of trajectories of tyrosine kinase inhibitor adherence in patients with newly diagnosed chronic myeloid leukemia. *Journal of Oncology Pharmacy Practice*, 27(8): 1842-1852.

26. Chen S*, Graff J, Yun S, Ta JT, **Bansal A**, Carlson JJ, Veenstra DL, Basu A, Devine EE (2021). Online tools to synthesize real-world evidence of comparative effectiveness research to enhance formulary decision-making. *Journal of Managed Care & Specialty Pharmacy*, 27(1): 95-104. (2021 Health Economics and Outcomes Research Excellence - Application Award, International Society for Pharmacoeconomics and Outcomes Research (ISPOR))

27. Othus M, **Bansal A**, Erba H, Ramsey SD (2020). Bias in mean survival from fitting cure models with limited follow-up. *Value in Health*, 23(8): 1034-1039. doi:10.1016/j.jval.2020.02.015.

28. Ramsey SD, Hall IJ, Smith JL, Ekwueme DU, Fedorenko CR, Kreizenbeck K, **Bansal A**, Thompson IM, Penson DF (2020). A Comparison of general, genitourinary, bowel, and sexual quality of life among long term survivors of prostate, bladder, colorectal, and lung cancer. *Journal of Geriatric Oncology*, in press.

29. **Bansal A**, Mayer-Hamblett N, Goss CH, Chan LN, Heagerty PJ (2019). Evaluating the value of updating markers over time for risk prediction in cystic fibrosis. *Epidemiology (Sunnyvale)*, 9: 375.

30. **Bansal A**, Heagerty PJ (2019). A comparison of landmark methods and time-dependent ROC methods to evaluate the time-varying performance of prognostic markers for survival outcomes. Invited article, *Diagnostic and Prognostic Research*, 3: 14. https://doi.org/10.1186/s41512-019-0057-6

31. Miles RC, Lee CI, Sun Q, **Bansal A**, Fedorenko C, Specht JM, Ramsey SD, Lyman GH, Lee JM (2019). Predictors of advanced imaging use during breast cancer surveillance. *Journal of the National Comprehensive Care Network*, 17(7): 813-820.

32. Higa S*, Devine EE, Baradaran S, Patel V, **Bansal A**+ (2019). Psoriasis treatment patterns: A retrospective claims study. *Curr Med Res Opin*. 35(10):1727-1733.

33. Goulart B, Silgard ET, Baik CS, **Bansal A**, Sun Q, Durbin EB, Hands I, Kavuluru R, Shah D, Arnold SM, Ramsey SD, Schwartz S (2019). Validity of Natural Language Processing for Ascertainment of EGFR and ALK Test Results in SEER Cases of Stage IV Non-Small Cell Lung Cancer. *JCO Clinical Care Informatics*, 3: 1-15.

34. **Bansal A**, Sullivan SD, Lin V, Purdum A, Navale L, Cheng P, Ramsey SD (2019). Estimating long-term survival for patients with relapsed or refractory aggressive Non-Hodgkin Lymphoma treated with Anti-CD19 Chimeric Antigen Receptor T-cell therapy: A comparison of standard and mixture cure models. *Medical Decision Making*, 39(3): 294-298.

35. **Bansal A**, Heagerty PJ (2018). A tutorial on evaluating time-dependent discrimination accuracy for censored survival outcomes. *Medical Decision Making*, 38(8): 904-916.

36. Roth JA, Sullivan SD, Lin V, **Bansal A**, Purdum A, Navale L, Cheng P, Ramsey SD (2018). Cost-Effectiveness of Axicabtagene Ciloleucel for Adult Patients with Relapsed or Refractory Large B-Cell Lymphoma in the United States. *Journal of Medical Economics*, 21(12): 1238-1245.

37. **Bansal A**, Koepl LM, Fedorenko CR, Li C, Smith JL, Hall IJ, Penson DJ, Ramsey SD (2018). Information seeking and satisfaction with information sources among spouses of men with newly diagnosed local stage prostate cancer. *Journal of Cancer Education*, 33(2):325-331.

38. McDermott CL*, **Bansal A**, Ramsey SD, Lyman GH, Sullivan SD (2018). Depression and healthcare utilization at end-of-life among older adults with advanced non-small cell lung cancer. *Journal of Pain and Symptom Management*, 56(5): 699-708. e1.

39. Burnett-Hartman AN, Adams SV, **Bansal A**, McDougall JA, Shiovitz S, Karnopp A, Warren-Mears V, Ramsey SD (2018). Indian Health Service care system and cancer stage in American Indians and Alaska Natives. *Journal of Health Care for the Poor and Underserved*, 29(1): 245-252.

40. Canestaro WJ*, Hendrix N, **Bansal A**, Sullivan SD, Devine EB, Carlson JJ (2017). Favorable and publicly-funded studies are more likely to be published: A systematic review and meta-analysis. *Journal of Clinical Epidemiology*, 92: 58-68.

41. Yeung K*, Suh K, Basu A, Garrison LP, **Bansal A**, Carlson JJ (2017). Paying for Cures: How Can We Afford It? Managed Care Pharmacy Stakeholders' Perceptions of Policy Options to Address Affordability of Prescription Drugs. *Journal of Managed Care & Specialty Pharmacy*, 23(10): 1084-1090.

42. **Bansal A**, Sullivan SD, Lyman G, Hershman D, Barlow WE, McCune J, Ramsey SD (2017). A Stakeholder-Informed Randomized, Controlled Comparative Effectiveness Study of an Order Prescribing Intervention to Improve Colony Stimulating Factor use for Cancer Patients Receiving Myelosuppressive Chemotherapy, (SWOG S1415CD): The TrACER Study. *Journal of Comparative Effectiveness Research*, 6(5): 461-470.

43. Dardas T, Kim M, **Bansal A**, Heagerty PJ, Cheng R, Mokadam N, Pal J, Smith J, Mahr C, Levy W (2017). Agreement between risk and heart transplant priority: Effects of the geographic allocation rule and status assignment. *Journal of Heart and Lung Transplantation*, 36(6): 666-672.

44. Tung A*, Hepp Z, **Bansal A+**, Devine B+ (2017). Characterizing healthcare utilization, direct costs, and comorbidities associated with Interstitial Cystitis: A retrospective claims analysis. *Journal of Managed Care and Specialty Pharmacy*, 23(4): 474-482.

45. Othus M, **Bansal A**, Koepl L, Wagner S, Ramsey S (2017). Accounting for cured patients in cost-effectiveness analysis. *Value in Health*, 20(4): 705-709.

46. Bounthavong M*, Pruitt LD, Smolenski DJ, Gahm GA, **Bansal A**, Hansen RN (2016). Economic evaluation of In-Home Telehealth compared to In-Person Treatment Delivery for managing depression, pii: 1357633X16678147. [Epub ahead of print]

47. Boldenow E, Gendrin C, Ngo L, Bierle C, Vornhagen J, Merillat S, Armistead B, Whidbey C, Alishetti V, Ogle J, Gough M, Srinouanprachanh S, MacDonald JW, Bammler TK, **Bansal A**, Liggitt HD, Rajagopal L, Adams Waldorf KM (2016). Group B Streptococcus circumvents neutrophils and neutrophil extracellular traps during amniotic cavity invasion and preterm labor. *Science Immunology*, 1(4). pi: eaah4576.

48. Adams SV, Burnett-Hartman AN, Karnopp A, **Bansal A**, Cohen SA, Warren-Mears V, Ramsey SD (2016). Cancer stage in American Indians and Alaska Natives enrolled in Medicaid. *American Journal of Preventive Medicine*, 51(3): 368-372.

49. Adams SV, **Bansal A**, Burnett-Hartman AN, Cohen S, Karnopp A, Warren-Mears V, Ramsey SD (2016). Cancer treatment delays in American Indians and Alaska Natives enrolled in Medicare. *Journal of Health Care for the Poor and Underserved*, 28(1): 350-361.

50. McDougall JA*, **Bansal A**, Goulart B, Sullivan S, McCune J, Karnopp A, Fedorenko C, Valderrama A, Seal B, Ramsey SD (2016). The clinical and economic impacts of skeletal related events among Medicare enrollees with prostate cancer metastatic to bone. *The Oncologist,* 21(3): 320-326.

51. Ramsey SD, **Bansal A**, Fedorenko CR, Blough DK, Overstreet KA, Shankaran V, Newcomb P. Financial insolvency as a risk factor for early mortality among patients with cancer (2016). *Journal of Clinical Oncology,* 34(9): 980-986.

52. **Bansal A**, Radich JP (2016). Is cure for CML possible in the TKI era? *Current Opinion in Hematology*, 23(2): 115-120.

53. Berriochoa CA, Hibbard D, Morcos M, **Bansal A**, Comstock B, Pellegrini C, Shankaran V, Patel S (2015). Tumor length as a prognostic factor in esophageal cancer management. *Journal of Radiation Oncology,* 4(1): 71-77.

54. Adams Waldorf KM, Singh N, Mohan AR, Young RC, Ngo L, Das A, Tsai J, **Bansal A**, Paolella L, Herbert BR, Sooranna SR, Gough M, Astley C, Vogel K, Baldessari AE, Bammler TK, MacDonald J, Gravett MG, Rajagopal L, Johnson M (2015). Uterine overdistention induces preterm labor mediated by inflammation: Observations in pregnant women and nonhuman primates. *American Journal of Obstetrics & Gynecology*, 213(6): 830.e1-830.e19.

55. Ramsey SD, Fedorenko CR, Chouhan R, McGee R, Lyman G, Kreizenbeck K, **Bansal A** (2015). Adherence to ASCO/ABIM Choosing Wisely Initiative among cancer patients enrolled in a large regional commercial health insurer. *Journal of Oncology Practice*, 11(4): 338-43.

56. Shiovitz S, **Bansal A**, Burnett-Hartman AN, Karnopp A, Adams SV, Korenbot C, Warren-Mears V, Ramsey SD (2015). Cancer-directed therapy and hospice care for metastatic cancer in American Indians and Alaska Natives. *Cancer Epidemiology, Biomarkers & Prevention*, 24(7): 1138-1143.

57. Solorio R, **Bansal A**, Comstock B, Ulatowski K (2015). Impact of a chronic care coordinator intervention on diabetes quality of care in a community health center. *Health Services Research*, 50(3): 730-749.

58. Danielson J, Kim A, **Bansal A**, Weber S (2014). An Interprofessional education fingerprint for APPEs: Developing metrics for collaborative interactions. *AACP Experiential Education (Interprofessional Education Integration - Best Practices),* 2(1): 1.

59. Shankaran V, Mummy D, Kopel L, **Bansal A**, Mirich DK, Yu E, Morlock R, Ramsey SD (2014). Survival and lifetime costs associated with first-line bevacizumab use in older patients with metastatic colorectal cancer. *The Oncologist*, 19(8): 892-899.

60. Khandelwal N, Hough CL, **Bansal A**, Veenstra DL, Treggiari MM (2014). Long-term survival in patients with severe acute respiratory distress syndrome and rescue therapies for refractory hypoxemia. *Critical Care Medicine*, 42(7): 1610-1618.

61. Weinert C, Cudney S, Comstock B, **Bansal A** (2014). A computer-based intervention for illness self-management among rural women with chronic health conditions: A randomized parallel-group study. *Canadian Journal of Nursing Research*, 46(1): 26-43.

62. Vanderhoeven J, McAdams RM, Beyer RP, Bammler TK, Farin FM, Rajagopal L, Kapur RP, **Bansal A**, Spencer M, Deng M, Gravett MG, Rubens CE, Adams Waldorf KM (2014). Group B streptococcal infection of the choriodecidua induces dysfunction of the cytokeratin network in amniotic epithelium: A pathway to premature membrane rupture. *PLoS Pathogens*, 10(3): e1003920.

63. Novotny SC, Perusek GP, Rice AJ, Comstock BA, **Bansal A**, Cavanagh PR (2013). A harness for enhanced comfort and loading during treadmill exercise in space. *Acta Astonautica*, 89: 205-214.

64. Salk JJ, **Bansal A**, Lai LA, Crispin DA, Ussakli CH, Horwitz MS, Bronner MP, Brentnall TA, Loeb LA, Rabinovitch PS, Risques RA (2013). Clonal expansions and shortened telomeres in non-dysplastic mucosa are associated with neoplasia in early-onset, but not late-onset, ulcerative colitis. *Inflammatory Bowel Diseases*, 19(12): 2593-2602.

65. **Bansal A**, Pepe MS (2013). Estimating improvement in prediction with matched case-control designs. *Lifetime Data Analysis*, 19(2): 170-201.

66. **Bansal A**, Pepe MS (2013). When does combining markers improve classification performance and what are implications for practice? *Statistics in Medicine*, 32(11): 1877-1892. (Young Investigator Award, Section on Statistics in Epidemiology, American Statistical Association)

67. Kerr KF, **Bansal A**, Pepe MS (2012). Comment on 'Interpreting incremental value of markers added to risk prediction models'. *American Journal of Epidemiology*. 176(6): 482-487.

68. Larson-Meyer DE, Palm S, **Bansal A**, Austin KJ, Hart AM, Alexander BM (2012). Influence of running and walking on hormonal regulators of appetite in women. *Journal of Obesity,* vol. 2012, Article ID 730409.

69. Adams Waldorf KM, Gravett MG, McAdams RM, Paolella LJ, Gough GM, Carl DJ, **Bansal A**, Liggitt HD, Kapur RP, Reitz FB, Rubens CE (2011). Choriodecidual group B streptococcal inoculation induces fetal lung injury without intra-amniotic infection and preterm labor in *Macaca Nemestrina. PLoS ONE,* 6(12): e28972.

70. Weinert C, Cudney S, Comstock B, **Bansal A** (2011). Computer intervention impact on psychosocial adaptation of rural women with chronic conditions. *Nursing Research*, 60(2), 82-91.

71. Soltes G, Hust M, Ng K, **Bansal A**, Field J, Dübel S, Cha S, Wiersma EJ (2007). On the influence of vector design on antibody phage display. *Journal of Biotechnology*, 127(4), 626-37.

OTHER ARTICLES (*TRAINEE AUTHOR, +SENIOR AUTHOR)

1. Khor S*, Bansal A+ (2022). The Promise and Biases of Prediction Algorithms in Health Economics and Outcomes Research. *Value & Outcomes Spotlight magazine*. 8(1): 27-29.

2. Basu A, Hammarlund N, Khor S, Bansal A. Understanding Algorithmic Discrimination in Health Economics Through the Lens of Measurement Errors. *National Bureau of Economic Research Working Paper*, October 2021. [link](#)

BOOK CHAPTERS

1. **Bansal A**, Pepe MS (2013). Estimating improvement in prediction with matched case-control designs. In MLT Lee, M Gail, G Satten, T Cai, A Gandy, R Pfeiffer (Ed.) Risk assessment and evaluation of predictions. Springer.

SUBMITTED MANUSCRIPTS (*TRAINEE AUTHOR, +SENIOR AUTHOR)

1. Rodriguez P*, Goss CH, Heagerty PJ, Veenstra DL, Ramos KJ, Hee-Wai T, **Bansal A+.** Development of a prediction model for mortality in cystic fibrosis using machine-learning methods.

2. Ramsey SD, Saber W, **Bansal A**, Li L, Nakamura R, Cutler C, Scott BL, Sangaralingham LR, Thao V, Roth JA, Wright W, Steuten LMG, Pidala JA, Mishra A, Maziarz RT, Westervelt P, Mcguirk JP. Cost-Effectiveness of Reduced Intensity Allogeneic Hematopoietic Cell Transplantation for Older Patients with High-Risk Myelodysplastic Syndrome: Analysis of BMT-CTN 1102. *JCO Oncology Practice.*

3. Lyman GH, **Bansal A**, Sullivan SD, Arnold KB, Barlow WE, Hershman DL, Lad TE, Ramsey SD. Impact of Treatment Experience on Patient Knowledge of Colony Stimulating Factors Among Patients Receiving Cancer Chemotherapy: Evidence from S1415CD, A Large Pragmatic Trial.

4. Hendrix ND, **Bansal A**, Buist D, Lee CI, Veenstra DL. Health outcomes modeling to assess artificial intelligence diagnostics: An application in breast cancer screening.

5. **Bansal A**, Basu A. Trouble with the Curve: Cure fraction modeling and optimal follow-up.

GRANT & CONTRACT SUPPORT

Active

1. **Personalized Risk AdaptIve Surveillance in CancEr (PRAISE)**   **(37.5%)**
   Role: PI
   Sponsor, Type: NIH - NCI, R37   Period: 9/1/2018 – 7/31/2025

2. **Genetech Fellowship**   **(15%)**
   Role: Co-I
   Sponsor, Type: Genentech, Contract   Period**:** 7/1/2022 – 31/06/2024

Completed

1. **Community Pharmacist Intervention to Close Statin Gaps in Diabetes Care**   **(7%)**
   Role: Co-I (PIs: Odegard, Bacci, Department of Pharmacy, University of Washington)
   Sponsor, Type: NACDS   Period**:** 8/1/2018 – 7/31/2022

2. **Cost-Effectiveness Analysis of Stem Cell Transplant in Older MDS Patients**   **(7%)**
   Role: Site PI
   Sponsor, Type: NIH, R01   Period: 12/1/2014 – 3/31/2021

3. **A Pragmatic Trial to Improve Colony Stimulating Factor Use in Cancer**   **(15%)**
   Role: Co-I (PI: Ramsey, Fred Hutchinson Cancer Research Center)
   Sponsor, Type: PCORI   Period**:** 7/1/2015 – 8/31/2021

4. **Disparities in the Availability of Cancer Clinical Trials: A Multi-level Analysis**   **(10%)**
   Role: PI
   Sponsor, Type: NIH - NCI, R03   Period**:** 9/1/2017 – 8/31/2020

5. **Oncology Value-Based Pricing Project**   **(10%)**
   Role: Site Co-PI
   Sponsor, Type: Bristol Myers Squibb   Period**:** 6/1/2018 – 3/31/2020

6. **Ancillary Cost-Effectiveness Analysis**   **(7%)**
   Role: Site PI
   Sponsor, Type: NIH, R01   Period**:** 8/1/2016 – 7/31/2020

7. **Comparative effectiveness of molecular response guided sequential treatment strategies in chronic myeloid leukemia**   **(25%)**
   Role: PI
   Sponsor, Type: PhRMA Foundation, Research Starter Grant   Period**:** 7/1/2015 – 6/31/2017

8. **Hormonal Regulation of Human CYP3A** **(10%)**
   Role: Co-I (PI: Thummel, Department of Pharmaceutics, University of Washington)
   Sponsor, Type: NIH - NIGMS, R01   Period: 7/1/2014 – 6/30/2018

9. **Mitochondrial Biomarkers for Early Detection of Cancer in Ulcerative Colitis** **(10%)**
   Role: Key Personnel (PI: Risques, Department of Pathology, University of Washington)
   Sponsor, Type: NIH - NCI, R01   Period: 4/1/2014 – 3/31/2018

10. **Implementing Value-Based Collaborations to Improve Immunizations** **(5%)**
    Role: Key Personnel (PI: Odegard, Department of Pharmacy, University of Washington)
    Sponsor, Type: NACDS   Period**:** 7/1/2016 – 9/30/2017

11. **Patterns of Care and Costs Associated with Regorafenib Use in Metastatic Colorectal Cancer** **(10%)**
    Role: Co-I (PI: Shankaran, Fred Hutchinson Cancer Research Center)
    Sponsor, Type: Bayer   Period: 6/1/2015 – 12/31/2017

12. **Assessing Molecular Profiling in Non-Small Cell Lung Cancer at the Population Level: A Validation Study of Natural Language Processing Algorithms for SEER** **(10%)**
    Role: Site PI (PI: Goulart, Fred Hutchinson Cancer Research Center)
    Sponsor, Type: Fred Hutchinson Cancer Research Center   Period: 9/1/2015 – 8/31/2016

TEACHING: GRADUATE COURSES, UNIVERSITY OF WASHINGTON

Course Instructor
- PHRMRA 545: Statistical Topics for Biomedical Regulatory Affairs   2021 - Present
- BIOST 512: Medical Biometry II – Introduction to Linear Regression   2017 - 2020
  Topics covered: Multiple linear regression, including assumptions, transformations, outlier detection, dummy variables, and variable selection procedures, and an introduction to one-way and two-way analyses of variance. Examples drawn from the biomedical literature with computer assignments using R.

Course Master
- HEOR (previously PHARM) 597: CHOICE Graduate Seminar   Winter 2016, Spring 2017, 2018-Present

Guest Lecturer
- PHARM 451/551: Introduction to Drug Development   2021 - 2023
- PHRMCY 580: Discoveries Seminar   2021
- PHARM 579: Current Topics in Pharmacy   2018
- Pharmacy Residents: Basic Statistical Analysis   2015, 2016
- PHARM 592: Pharmacy Practice IV: Design and Analysis of Medical Studies   2014
- BIOST 578: Statistical Methods for the Evaluation of Biomarkers and Medical Tests   2011

Teaching Assistant, Department of Biostatistics, University of Washington
- BIOST 508: Biostatistical Reasoning for the Health Sciences   2010
- BIOST 512: Medical Biometry II   2009

TEACHING: SHORT COURSES

Methods for Developing and Evaluating Prediction Models for Dynamic Decision-Making
Topics covered: Model development using joint models and partly conditional models, model evaluation using measures of discrimination accuracy that are appropriate for survival outcomes.
- Instructor, Society for Medical Decision Making Annual Meeting, Portland, OR   2019
- Co-Instructor, University of Washington Summer Institutes: Statistics for Clinical Research, Seattle   2017, 2019
- Co-Instructor, Society for Medical Decision Making Annual Meeting, Vancouver, Canada   2016

Survival Analysis
- Computer Lab Instructor, Erasmus Summer Programme, Erasmus University, Rotterdam, The Netherlands 2013

MENTORING

PhD Dissertation Committees
- Sara Khor, CHOICE Institute (**Co-Chair**) — 2022 – Present
- Samantha Clark, CHOICE Institute (**Chair**) — 2019-2021
- Tricia Rodriguez, CHOICE Institute (**Chair**) — Completed 2021
- Diana Naranjo, Department of Health Services — Completed 2021
- Scott Spencer, Institute for Public Health Genetics — Completed 2021
- Nathaniel Hendrix, CHOICE Institute — Completed 2020
- Wei-Jhih Wang, CHOICE Institute — Completed 2020
- Anu Mishra, Department of Biostatistics — Completed 2019
- William Canestaro, CHOICE Institute — Completed 2017
- Cara McDermott, CHOICE Institute — Completed 2016

Masters Thesis Committees
- Stella Koh (**Chair**) — 2022 – Present
- Spencer Cheng — 2022 – Present
- Ashley Kim, CHOICE Institute (**Chair**) — Completed 2019
- Sarah Allen, Department of Epidemiology — Completed 2019
- Sara Higa, CHOICE Institute (**Chair**) — Completed 2018
- Sheila Shapouri, CHOICE Institute — Completed 2017
- Amy Tung, CHOICE Institute — Completed 2016
- Cate Lockhart, CHOICE Institute — Completed 2016

Research Assistantships / Independent Research Projects
- Ronald Dickerson, CHOICE Institute — April 2023 – Present
- Felipe Montano-Campos, CHOICE Institute — April 2022 – Present
- Sara Khor, CHOICE Institute — 2020 – Present
- Woojung Lee, CHOICE Institute — 2021 – 2022
- Yilin Chen, CHOICE Institute — 2020 – 2021
- Samantha Clark, CHOICE Institute — 2018 – 2021
- Zizi Elsisi, CHOICE Institute — 2021
- Tricia Rodriguez, CHOICE Institute — 2021
- Wei-Jhih Wang, CHOICE Institute — 2017 – 2020
- Naomi Schwartz, CHOICE Institute — 2019
- Tricia Rodriguez, CHOICE Institute — 2018 – 2019
- Kangho Suh, CHOICE Institute — 2016 – 2019
- Blythe Adamson, CHOICE Institute — 2016 – 2017
- Xinyuan Dong, Department of Biostatistics — 2015 – 2016
- Richard Kim, CHOICE Institute — 2014
- Leigh Fisher, Department of Biostatistics — 2014

Teaching Assistantships
- Nikhita Damaraju, Institute for Public Health Genetics — 2023
- Kristin Miller, Department of Epidemiology — 2022
- Austin Schumacher, Department of Biostatistics — 2021
- Esther Gu, Department of Biostatistics — 2020
- Yuan Tian, Department of Biostatistics — 2020
- Parker Xie, Department of Biostatistics — 2020

- Andrew Humbert, Department of Biostatistics   2018, 2019
- Maria Valdez, Department of Biostatistics   2019
- Zora Yang, Department of Biostatistics   2019
- Xiudi Li, Department of Biostatistics   2018
- Steven Wang, Department of Biostatistics   2018
- David Clausen, Department of Statistics   2017
- Asad Haris, Department of Biostatistics   2017
- Jun Hwang, Department of Biostatistics   2017
- Austin Schumacher, Department of Biostatistics   2017

Academic Advising
- Samantha Clark, CHOICE Institute   2017 – 2021
- Naomi Schwartz, CHOICE Institute   2018 – 2020
- Karen Guo, CHOICE Institute   2017 – 2019

ORAL PRESENTATIONS

Invited Presentations

1. Bristol Myers Squibb US HEOR All-Hands Keynote Presentation, Virtual Format   2021
   Title: Health Equity & HEOR Methods: Addressing Algorithmic Bias

2. International Conference on Health Policy Statistics, American Statistical Association, San Diego, CA   2020
   Title: A value of information framework for personalizing the timing of biomarker collection

3. Lifetime Data Science Conference, American Statistical Association, Pittsburgh, PA   2019
   Title: Evaluating the time-varying prediction accuracy of survival models used in dynamic decision-making

4. 3rd Seattle Symposium in Health Care Data Analytics, Seattle, WA   2018
   Title: Statistical methods for developing prediction models for dynamic decision-making

5. Toronto Health Economics and Technology Assessment (THETA) Collaborative, Toronto, Ontario   2018
   Title: Value of information methods for optimal timing of biomarker collection

6. Joint Statistical Meetings, American Statistical Association, Baltimore, MD   2017
   Session: Statistical Methods for Health Economics and Applied Econometrics in Health Policy
   Title: Statistical methods for developing cost-effective biomarker combinations for disease diagnosis and prognosis

7. International Biometric Society (Western North American Region) Annual Meeting, Santa Fe, NM   2017
   Title: Value of information methods for optimal timing of biomarker collection

8. School of Pharmacy All-School Faculty Meeting, University of Washington   2014
   Title: A statistically significant year

9. Cystic Fibrosis Biostatistics & Epidemiology Workshop, University of Washington   2014
   Title: Evaluating the value of updating markers over time for risk prediction of Cystic Fibrosis

10. Department of Pharmacy, University of Washington   2013
    Title: Using incident cases to evaluate prognostic markers with time-varying performance

11. Center for Devices and Radiological Health, Food and Drug Administration, Silver Spring, MD   2011
    Title: When Does Combining Markers Improve Classification Performance?

12. Center for Drug Evaluation and Research, Food and Drug Administration, Silver Spring, MD   2011
    Title: When Does Combining Markers Improve Classification Performance?

13. Department of Biostatistics, University of Washington   2010
    Title: Improvement in Performance by Combining Biomarkers in Diagnostic Medicine

Conference Podium Presentations (* upcoming)

14. International Society for Pharmacoeconomic and Outcomes Research Annual Meeting, Boston, MA   2023
    Title: Bias in, Bias out? Implications of Using Real-World Data with Differentially Measured Outcomes to Generate Prediction Models When Race Is a Predictor
    [Presented by first author/trainee Sara Khor; Senior author Aasthaa Bansal]

15. International Society for Pharmacoeconomic and Outcomes Research Annual Meeting, Boston, MA   2023
    Title: Using Biomarker Change and Treatment Adherence to Predict Risk of Relapse Among Chronic Myeloid Leukemia Patients Who Are in Remission
    [Presented by first author/trainee Felipe Montano-Campos; Senior author Aasthaa Bansal]

16. Western Pharmacoeconomics Conference, Los Angeles, CA   2023
    Title: Using Biomarker Change and Treatment Adherence to Predict Risk of Relapse Among Chronic Myeloid Leukemia Patients Who Are in Remission
    [Presented by first author/trainee Felipe Montano-Campos; Senior author Aasthaa Bansal]

17. Society for Medical Decision Making, Seattle WA   2022
    Title: Addressing challenges in the development of clinical risk prediction algorithms due to intermittent patient follow-up in electronic health record data

18. International Society for Pharmacoeconomic and Outcomes Research Annual Meeting, Virtual Format   2021
    Title: The impact of including race and ethnicity in risk prediction models on racial bias
    [Presented by first author/trainee Sara Khor; Senior author Aasthaa Bansal]
    [Winner of Best Student Research Podium Presentation]

19. AHRQ NRSA Trainees Research Conference   2021
    Title: The impact of including race and ethnicity in risk prediction models on racial bias
    [Presented by first author/trainee Sara Khor; Senior author Aasthaa Bansal]

20. International Society for Pharmacoeconomic and Outcomes Research Annual Meeting, Virtual Format   2020
    Title: A machine learning approach to predicting mortality in cystic fibrosis
    [Presented by first author/trainee Patricia Rodriguez; Senior author Aasthaa Bansal]

21. Society for Medical Decision Making, Pittsburgh, PA   2017
    Title: Trouble with the curve: Economic implications for modeling and extrapolating survival curves with unusual bend
    [Top-Rated Methods Abstracts Session]

22. Society for Medical Decision Making, Pittsburgh, PA   2017
    Title: An approach for developing microsimulation models that incorporate longitudinal biomarker trajectories and dynamic
    decision making [Presentation given by trainee Blythe Adamson]

23. Society for Medical Decision Making, Vancouver, Canada   2016
    Title: Value of information methods for optimal timing of biomarker collection

24. Joint Statistical Meetings, American Statistical Association, Seattle, WA   2015
    Title: Dynamic Placement Values: A Basis for Evaluating Prognostic Potential

25. American Society of Clinical Oncology Annual Meeting, Chicago, IL   2015
    Title: Financial insolvency as a risk factor for early mortality among patients with cancer

26. International Society for Pharmacoeconomic and Outcomes Research Annual Meeting, Philadelphia, PA   2015
    Title: Cure Models: Accounting for cured patients in economic evaluation
    [Winner of New Investigator Podium Presentation Award]

27. Joint Statistical Meetings, American Statistical Association, Boston, MA   2014
    Title: Coupling model selection with evaluation in prognostic model development

28. Joint Statistical Meetings, American Statistical Association, Montreal, QC   2013
    Title: Using incident cases to evaluate prognostic markers with time-varying performance

29. Joint Statistical Meetings, American Statistical Association, Vancouver, BC   2010
    Title: Estimating the Improvement in Performance by Combining Biomarkers in a Two-Stage Study Design

30. International Biometric Society (Western North American Region) Annual Meeting, Seattle, WA   2010
  Title: When Does Combining Markers Improve Classification Performance?
  [Student Oral Presentation 2nd Place Winner]

31. Joint Statistical Meetings, American Statistical Association, Washington DC   2009
  Title: Improvement in Performance by Combining Biomarkers in Diagnostic Medicine

SELECTED CONFERENCE POSTERS (*TRAINEE AUTHOR, +SENIOR AUTHOR)

1. Society for Medical Decision Making, Pittsburgh, PA   2017
  Wang WJ*, Devine EE, **Bansal A**, White HS, Basu A. Meta-analyzing count events over varying durations using the convoluted Poisson model: The case for post stroke seizures.
  [Lee B. Lusted Student Prize Finalist]

2. International Society for Pharmacoeconomics and Outcomes Research, Washington, DC   2016
  Bansal A, Basu A. Value of information methods for optimal timing of biomarker collection.
  [Winner of New Investigator Poster Presentation Award]

3. International Society for Pharmacoeconomics and Outcomes Research, Washington, DC   2016
  Tung A*, Hepp Z, **Bansal A**+, Devine B+. Characterizing healthcare utilization, direct costs, and comorbidities associated with Interstitial Cystitis: A retrospective claims analysis
  [Finalist for Poster Presentation Award]

PROFESSIONAL ACTIVITIES & SERVICE

International
- Scientific Co-Chair, Society for Medical Decision Making Annual Meeting   2022, 2023
- Member, International Society for Pharmacoeconomics and Outcomes Research (ISPOR) Health Sciences Policy Council   2020 – 2022
- Scientific Organizing Committee, International Conference on Health Policy Statistics 2020   2018 – 2020
- Invited Attendee, Statistical Analysis of Large Administrative Health Databases: Emerging Challenges and Strategies, Banff International Research Station for Mathematical Innovation and Discovery 5-day Workshop   2019
- Abstract Reviewer, Society for Medical Decision Making Annual Meeting   2019
- Research Presentation Judge, International Society for Pharmacoeconomics and Outcomes Research (ISPOR) Annual Meeting   2019
- Member, ISPOR Statistical Methods in Health Economics and Outcomes Research Special Interest Group   2017 – Present
- Member, Society for Medical Decision Making   2015 – Present
- Member, International Society for Pharmacoeconomics and Outcomes Research   2013 – Present
- Member, International Biometric Society – Western North American Region   2008 – Present

National
- Grant Reviewer, PhRMA Foundation   2022 – Present
- Invited Attendee, New Grantee Workshop, Division of Cancer Prevention and Population Sciences, National Cancer Institute   2019
- Member, Southwest Oncology Group (SWOG)   2015 – Present
- Member, American Statistical Association   2010 – Present

Reviewer: American Journal of Epidemiology, Biometrics, Biostatistics, BMC Medical Research Methodology, Health Economics, Health Services Research, Health Services & Outcomes Research, Journal of Clinical Oncology, Medical Decision Making, Nature Medicine, PharmacoEconomics, SpringerPlus, Statistics and Computing, Statistics in Medicine, The Oncologist, Value in Health

Local

University of Washington (UW)
- Member, UW Faculty Senate   2020 – Present
- Member, UW School of Pharmacy Dean Search Committee   2022 – 2023
- Graduate School Representative, Xinyuan Dong (Department of Biostatistics)   2019 – 2021
- Graduate School Representative, David Prince (Department of Biostatistics)   2015
- Graduate School Representative, Rui Zhang (Department of Biostatistics)   2014

The CHOICE Institute, University of Washington
- Co-Director, Machine Learning and Data Science in Health Economics and Outcomes Research   2021 – Present
- Director, PhD Preliminary Exams   2019 – Present
- Member, Admissions Committee   2017 – Present
- Member, PhD Preliminary Exams Committee   2014 – Present
- Faculty Advisor, Prediction Modeling Reading Group   2019 – 2021
- Chair, Annual Retreat Planning Committee   2017
- Member, Curriculum Committee   2016 – 2020

Department of Pharmacy, University of Washington
- Member, Search Committee for Tenure-Track Assistant Professor Position   2020, 2021
- Member, Strategic Planning Committee   2017
- Member, Merit Review Process Improvement Committee   2015

School of Pharmacy, University of Washington
- Member, School of Pharmacy Dean Search Committee   2022 – 2023
- Member, Curricular Innovation Committee   2017 – 2020
- Member, School of Pharmacy: Curricular Evaluation Committee   2018

Department of Biostatistics, University of Washington
- Organizer, Biomarker and Longitudinal Data Working Group   2012 – 2015