

# Philip S. Boonstra

## Associate Professor

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### Education

PhD, Biostatistics, University of Michigan (Ann Arbor)	2009 – 2012
MS, Biostatistics, University of Michigan (Ann Arbor)	2007 – 2009
BA, Mathematics and Political Science, Calvin College* (Grand Rapids, MI)	2002 – 2006
*Calvin University, as of 2019	

### Professional Affiliations

Associate Professor, with tenure (Dept. of Biostatistics, University of Michigan)	2020 – present
Research Associate Professor (Dept. of Biostatistics, University of Michigan)	2019 – 2020
Research Assistant Professor (Dept. of Biostatistics, University of Michigan)	2013 – 2019
Affiliated Faculty (Center for Cancer Biostatistics, University of Michigan)	2013 – present
Affiliate Member, Cancer Epidemiology and Prevention Program (University of Michigan Rogel Cancer Center)	2016 – present
Graduate Student Research Assistant (Dept. of Biostatistics, UM)	Intermittent, 2009 - 2012
Graduate Student Research Assistant (Kidney and Epidemiology Cost Center, UM) (Chronic Kidney Disease Surveillance Team, UM Group)	Summers 2008, 2009
Summer Research Assistant (Dept. of Mathematics and Statistics, Calvin College)	Summers 2004, 2006

### Teaching

Biostatistics 591 (University of Michigan; 2 credit hours) Introduction to R programming course for online MPH students (hosted on Coursera)	Spring 2020,
Biostatistics 699 (University of Michigan; 4 credit hours) Practicum for 2nd-year MS students/1st year PhD students	Winter 2019, Winter 2020, Winter 2021
Biostatistics 619 (UM; 3 credit hours)	Winter 2018
Biostatistics 619 (2 credit hours) Graduate course on the design, conduct, and analysis of clinical trials	Fall 2014; Fall 2015; Fall 2016
Big Data Summer Institute (UM) Faculty mentor for 6 week undergraduate research program	Summer 2017
Biostatistics 644 (UM; 2 credit hours) Graduate course on statistical methods for cancer research	Fall 2015

Teaching Assistant / Grader (Calvin College) 2004 - 2005  
for undergraduate courses in calculus, discrete mathematics, and linear algebra

## Honors & Fellowships

Rackham Predoctoral Fellowship (University of Michigan)	2011 - 2012
Rackham Conference Travel Grant (UM)	2010, 2011, 2012
Rackham Regents' Fellowship (UM)	2009 - 2011
NIH Predoctoral Research in the Biosciences Training Grant (UM)	2007 - 2009
1st Place, Michigan Autumn Take Home (MATH) Challenge (Calvin College)	2005
Dean's List (GPA > 3.5/4.0) (Calvin)	2002 - 2006
Presidential Scholarship (Calvin)	2002 - 2006

## Publications

1. Saran R, Hedgeman E, Plantinga L, Burrows NR, Gillespie BW, Young EW, Coresh J, Pavkov M, Williams D and Powe NR, for **the CKD Surveillance Team** (2010). "Establishing a National Chronic Kidney Disease Surveillance System for the United States." *Clinical Journal of the American Society of Nephrology* 5, 152–161.
2. **Boonstra PS**, Gruber SB, Raymond VM, Huang SC, Timshel S, Nilbert M and Mukherjee B (2010). "A review of statistical methods for testing genetic anticipation: Looking for an answer in Lynch syndrome." *Genetic Epidemiology* 34, 756–768.  
PMC 3894615
3. **Boonstra PS**, Mukherjee B, Taylor JMG, Nilbert M, Moreno V and Gruber SB (2011). "Bayesian modeling for genetic anticipation in presence of mutational heterogeneity: A case-study in hereditary non-polyposis colorectal cancer (Lynch syndrome)." *Biometrics* 67, 1627–1637.  
PMC 3176998
4. **Boonstra PS**, Taylor JMG and Mukherjee B (2013). "Incorporating auxiliary information for improved prediction in high dimensional datasets: An ensemble of shrinkage approaches." *Biostatistics* 14, 259–272.  
PMC 3590922
5. **Boonstra PS**, Mukherjee B and Taylor JMG (2013). "Bayesian shrinkage methods for partially observed data with many predictors." *The Annals of Applied Statistics*, 7, 2272–2292.  
PMC 3891514
6. **Boonstra PS\***, Bondarenko I\*, Park SK, Vokonas PS and Mukherjee B (2014). "Propensity score-based diagnostics for categorical response regression models." *Statistics in Medicine* 33, 455–469.  
PMC 3911784  
\*Equal contribution authors
7. Stenzel SL, Ahn J, **Boonstra PS**, Gruber SB, and Mukherjee B (2015). "The impact of exposure-biased sampling designs on detection of gene-environment interactions in case-control studies with potential exposure misclassification." *European Journal of Epidemiology* 30, 413–423.  
PMC 4256150
8. **Boonstra PS**, Shen JC, Taylor JMG, Braun TM, Griffith KA, Daignault S, Kalemkerian GP, Lawrence TS, and Schipper MJ (2015). "A statistical evaluation of dose expansion cohorts in phase I clinical trials." *Journal of the National Cancer Institute* 107, dju429.  
PMC 4565529
9. **Boonstra PS**, Mukherjee B and Taylor JMG (2015). "A small-sample choice of the tuning parameter in ridge regression." *Statistica Sinica* 25, 1185–1206.  
PMC 4790465

10. **Boonstra PS**, Taylor JMG and Mukherjee B (2015). "Adaptive shrinkage via the hyperpenalized EM algorithm." *Statistics in Biosciences* 7, 417–431.  
PMC 4728141
11. **Boonstra PS**, Mukherjee B, Gruber SB, Ahn J, Schmit SL, and Chatterjee N (2016). "Tests for gene-environment interactions and joint effects with exposure misclassification" *American Journal of Epidemiology* 183, 237–247.  
PMC 4724093
12. **Boonstra PS**, Taylor JMG, Smolska-Ciszewska B, Behrendt K, Dworzecki T, Gawkowska-Suwinska M, Bialas B, and Suwinski R (2016). " $\alpha/\beta$  ratio for prostate cancer derived from external beam radiotherapy and brachytherapy boost." *The British Journal of Radiology* 89, 20150957.  
PMC 4985475
13. Krauss JC, **Boonstra PS**, Vantsevich A, Friedman CP (2016) "Is the problem list in the eye of the beholder?: An exploration of consistency across physicians." *Journal of the American Medical Informatics Association* 23, 859–865.  
PMC 4997039
14. Barbaro RP, **Boonstra PS**, Paden ML, Folaoluwa OO, Roberts LA, Annich GM, Bartlett RH, Moler FW, Davis MM (2016). "Development and validation of pediatric risk estimate score for children using extracorporeal respiratory support (Ped-RESCUERS)." *Intensive Care Medicine* 42, 879–888.
15. **Boonstra PS**, Taylor JMG and Mukherjee B (2016). "Increasing efficiency for estimating treatment-biomarker interactions with historical data." *Statistical Methods in Medical Research* 25, 2959–2971.  
PMC 5450810
16. Polk A, Lu Y, Wang T, Seymour E, Bailey NG, Singer JW, **Boonstra PS**, Lim MS, Malek S, and Wilcox RA (2016). "Colony-stimulating Factor-1 Receptor is required for nurse-like cell survival in chronic lymphocytic leukemia." *Clinical Cancer Research* 22, 6118–6128.  
PMC 5161678
17. **Boonstra PS**, Braun TM, Taylor JMG, Kidwell KM, Bellile EL, Daignault S, Zhao L, Griffith KA, Lawrence TS, Kalemkerian GP, and Schipper MJ (2017). "Statistical controversies in cancer research: Building the bridge to phase II: Efficacy estimation in dose-expansion cohorts." *Annals of Oncology* 28, 1427–1435.  
PMC 5834117
18. Soni PD\*, **Boonstra PS\***, Schipper MJ, Bazzi L, Dess RT, Matuszak MM, Kong FM, Hayman JA, Ten Haken RK, Lawrence TS, Kalemkerian GP, and Jolly S (2017) "Lower incidence of esophagitis in the elderly undergoing definitive radiation therapy for lung cancer." *Journal of Thoracic Oncology* 12, 539–546.  
PMC 5318286  
\*Equal contribution authors
19. Moyer JS, Flynn S, **Boonstra PS**, Kraft C, Chinn S, Baker SR, Schwartz JL, Bichakjian, CK, Fullen D, Durham AB, Lowe L, Johnson TM (2017). "Efficacy of staged excision with permanent section margin control for cutaneous head and neck melanoma." *JAMA Dermatology* 153, 282–288.
20. DaSilva AF, Nascimento TD, Jassar H, Heffernan J, Toback RL, Lucas S, DosSantos MF, Bellile EL, **Boonstra PS**, Taylor JMG, Casey KL, Koeppe RA, Smith YR, and Zubieta JK (2017) "Dopamine D2/D3 imbalance during migraine attack and allodynia in vivo." *Neurology* 88, 1634–1641.  
PMC 5405765
21. Barbaro RP, **Boonstra PS**, Moler FW, Paden ML, Davis MM, Prosser LA (2017). "Hospital-level variation in inpatient costs among children receiving extracorporeal membrane oxygenation." *Perfusion* 153, 282–288.
22. Hawkins PG\*, **Boonstra PS\***, Ten Haken RK, Matuszak MM, Kong FM, Hearn JM, Lawrence TS, Schipper MJ, and Jolly S (2017). "Radiation-induced lung toxicity in non-small-cell lung cancer: Understanding the interactions of clinical factors and cytokines with the dose-toxicity relationship." *Radiotherapy and Oncology* 125, 66–72.  
PMC 5645039  
\*Equal contribution authors
23. von Salomé J, **Boonstra PS**, Karimi M, Aravidis C, Silander G, Stenmark-Askmal M, Nilbert M, Lindblom A, and Lagerstedt-Robinson K (2017). "Genetic anticipation in Swedish Lynch syndrome families." *PLOS*

*Genetics* 13, e1007012.

PMC 5681299

24. Grivas PD, Devata S, Khoriaty R, **Boonstra PS**, Ruch J, McDonnell K, Hernandez LA, Wilfong J, Smerage J, Ison MG, Eisenberg JNS, Silveira M, Cooney KA, and Worden FP (2017). "Low-cost intervention to increase influenza vaccination rates at a comprehensive cancer center." *Journal of Cancer Education* 32, 871–877.
25. **Boonstra PS\***, Polk A\*, Brown B, Hristov AC, Bailey NG, Lu Y, Kaminski MS, Phillips T, Devata S, Mayer T, and Wilcox RA (2017). "A single center phase II study of ixazomib in patients with relapsed or refractory cutaneous or peripheral T-cell lymphomas." *American Journal of Hematology* 92, 1287–1294.  
\*Equal contribution authors  
PMC 6116510
26. Hawkins PG\*, **Boonstra PS\***, Hobson ST, Hayman JA, Ten Haken RK, Matuszak MM, Stanton P, Kalemkerian GP, Lawrence TS, Schipper MJ, and Jolly S (2018). "Prediction of radiation esophagitis in non-small cell lung cancer using clinical factors, dosimetric parameters, and pretreatment cytokine levels." *Translational Oncology* 11, 102–108.  
\*Equal contribution authors  
PMC 6002355
27. Ma VT, **Boonstra PS**, Menghrajani K, Perkins C, Gowin KL, Mesa RA, Gotlib JR, and Talpaz, M (2018). "Treatment with JAK inhibitors in myelofibrosis patients nullifies the prognostic impact of unfavorable cytogenetics." *Clinical Lymphoma, Myeloma, and Leukemia* 18, e201–e210.  
PMC 5927833
28. Owen DR, **Boonstra PS**, Viglianti BL, Balter JM, Schipper MJ, Jackson W, El Naqa I, Jolly S, Ten Haken RK, and Matuszak MM (2018). "Modeling patient-specific dose-function response using SPECT/CT to personalize prediction of radiation-induced lung toxicity." *International Journal of Radiation Oncology · Biology · Physics* 102, 1265–1275 <https://doi.org/10.1016/j.ijrobp.2018.05.049>  
PMC 6202237
29. Barbaro RP, **Boonstra PS**, Kuo KW, Selewski DT, Bailly DK, Stone CL, Chow J, Annich GM, Moler FW, and Paden ML (2019). "Evaluating mortality risk adjustment among children receiving extracorporeal support for respiratory failure." *ASAIO Journal* 65, 277–284 <https://doi.org/10.1097/mat.0000000000000813>
30. **Boonstra PS**, Barbaro RP, and Sen A (2019). "Default priors for the intercept in logistic regressions" *Computational Statistics & Data Analysis* 133, 245–256 <https://doi.org/10.1016/j.csda.2018.10.014>  
PMC 6748335
31. Menghrajani K\*, **Boonstra PS\***, Perkins C, Gowin KL, Mesa RA, Gotlib JR, Wang L, Singer JW, and Talpaz, M (2019). "Predictive models for splenic response to JAK2 inhibitor therapy in patients with myelofibrosis" *Leukemia & Lymphoma* 60, 1036–1042 <https://doi.org/10.1080/10428194.2018.1509315>  
\*Equal contribution authors  
PMC 6426689
32. Geer M\*, Roberts E\*#, Shango M, Till B, Smith S, Abbas H, Hill B, Kaplan J, Barr PM, Caimi PF, Stephens DM, Lin E, Herrera AF, Rosenbaum E, Amengual K, **Boonstra PS**, Devata S, Wilcox RA, Kaminski M, and Phillips T (2019). "Multicenter retrospective study of intravascular DLBCL treated at academic institutions within the United States" *British Journal of Haematology* 186, 255–262 <https://doi.org/10.1111/bjh.15923>  
\*Equal contribution authors  
#Biostatistics graduate student mentee
33. Chase EC# and **Boonstra PS** (2019) "Accounting for established predictors with the multi-step elastic net" *Statistics in Medicine* 38, 4534–4544  
#Biostatistics graduate student mentee  
PMC 6736688
34. Andridge R, West BT, Little RJA, **Boonstra PS**, and Alvarado-Leiton F (2019) "Indices of non-ignorable selection bias for proportions estimated from non-probability samples" *Journal of the Royal Statistical Society: Series C* 68, 1465–1483 <https://doi.org/10.1111/rssc.12371>  
PMC 7724611

35. Ahmed A, Merrill SA, Alsawah F, Bockenstedt P, Campagnaro E, Devata S, Gitlin SD, Kaminski M, Cusick A, Phillips T, Sood S, Talpaz M, Quiery A, **Boonstra PS**, and Wilcox RA (2019) "Ruxolitinib as a targeted therapy in adult patients with secondary HLH" *Lancet Haematology* 6, e630–e637 [https://doi.org/10.1016/S2352-3026\(19\)30156-5](https://doi.org/10.1016/S2352-3026(19)30156-5)  
PMC 8054981
36. **Boonstra PS** and Barbaro RP (2020) "Incorporating historical models with adaptive Bayesian updates" *Biostatistics* 21, e47–e64 <https://doi.org/10.1093/biostatistics/kxy053>  
PMC 7868052
37. Hanks JE, Kovatch KJ, Ali SA, Roberts E#, Durham AB, Smith JD, Bradford CR, Malloy KM, **Boonstra PS**, and McLean SA (2020) "Long-term outcomes, prognostic value, and accuracy of sentinel lymph node biopsy in head and neck melanoma" *Otolaryngology-Head and Neck Surgery* 162, 520–529 <https://doi.org/10.1177/0194599819899934>  
#Biostatistics graduate student mentee  
PMC 8012010
38. Bankhead A, McMaster T, **Boonstra PS**, and Palmboos PL (2020) "Isoform-specific TP63 expression is linked with distinct clinical outcomes in bladder cancer" *EBioMedicine* 51, 102561 <https://dx.doi.org/10.1016%2Fj.ebiom.2019.11.022>  
PMC 6953644
39. Baker LH, **Boonstra PS**, Reinke D, Peregrine Antalis E, Zebrack B, and Weinberg RL "Burden of chronic diseases among sarcoma survivors treated with anthracycline chemotherapy: Results from an observational study" (2020) *Journal of Cancer Metastasis and Treatment* 6, 24 <https://doi.org/10.20517/2394-4722.2020.36>
40. **Boonstra PS** and Krauss JC (2020) "Inferring a consensus problem list using penalized multistage models for ordered data" *Annals of Applied Statistics* 14, 1557–1580 <https://doi.org/10.1214/20-AOAS1361>  
PMC 8345315
41. Barbaro RP\*, MacLaren G\*, **Boonstra PS**, Iwashyna TJ, Slutsky AS, Fan E, Paden ML, Ogino MT, Bartlett RH, Tonna J, Hyslop R, Fanning JJ, Rycus PT, Hyer S, Anders M, Agerstrand C, Hryniewicz K, Diaz R, Lorusso R, Combes A, Brodie D, for the Extracorporeal Life Support Organization (2020) "Extracorporeal membrane oxygenation support in COVID-19: The registry report from the Extracorporeal Life Support Organization" *The Lancet* 396, 1071–1078 [https://doi.org/10.1016/S0140-6736\(20\)32008-0](https://doi.org/10.1016/S0140-6736(20)32008-0)  
\*Equal contribution authors
42. Little RJA, West BT, **Boonstra PS**, and Hu J (2020) "Measures of the degree of departure from ignorable sample selection" *Journal of Survey Statistics and Methodology* 8, 932–964 <https://doi.org/10.1093/jssam/smz023>
43. **Boonstra PS**, Ahmed A, Merrill SA, and Wilcox RA (2021) "Ruxolitinib in adult patients with secondary hemophagocytic lymphohistiocytosis" *American Journal of Hematology* 96: E103–E105 <https://doi.org/10.1002/ajh.26091>
44. Owen DR, Sun Y, **Boonstra PS**, McFarlane M, Viglianti BL, Balter JM, El Naqa I, Schipper MJ, Schonewolf CA, Ten Haken RK, Kong FM, Jolly S, and Matuszak MM (2021) "Investigating the SPECT dose-function metrics associated with radiation-induced lung toxicity risk in non-small cell lung cancer patients undergoing radiation therapy" *Advances in Radiation Oncology* 6, 100666 <https://doi.org/10.1016/j.adro.2021.100666>  
PMC8010578
45. Salami SS\*, Tosoian JJ\*, Srinivas N, Jones, Jr TA, Brockman S, Elkhoury FF, Bazzi S, Plouffe KR, Sumida L, Siddiqui J, Liu CJ, Kunju LP, Morgan TM, Natarajan S, **Boonstra PS**, Sumida L, Tomlins SA, Udager AM, Sisk, Jr AE, Marks LS, and Palapattu GS (2021) "Serial molecular profiling of low-grade prostate cancer to assess tumor upgrading: A longitudinal cohort study" *European Urology* 79, 456–465 <https://doi.org/10.1016/j.eururo.2020.06.041>  
\*Equal contribution authors  
PMC 7779657
46. **Boonstra PS**, Braun TM, and Chase EC (2021) "A modular framework for seamless oncology trials" *Clinical Trials* 18, 303–313 <https://doi.org/10.1177/1740774520981939>  
PMC 8382494

47. Delaney PG, Eisner ZJ, Thullah AH, Muller B, Gan J, Timbo A, Kamara S, Sandy K, **Boonstra PS**, Scott JW, Raghavendran K “Evaluating a novel Prehospital Emergency Trauma Care Assessment Tool (PETCAT) for low- and middle-income countries: Lay first responders expand prehospital care in Sierra Leone” *World Journal of Surgery* 45, 2370–2377 <https://doi.org/10.1007/s00268-021-06140-1>
48. **Boonstra PS**, Little RJA, West BT, Andridge RR, and Alvarado-Leiton F “A simulation study of diagnostics for bias in non-probability samples” *Journal of Official Statistics* 37, 751–769 <https://doi.org/10.2478/jos-2021-0033>
49. West BT, Little RJA, Andridge RR, **Boonstra PS**, Ware EB, Pandit A, and Alvarado-Leiton F “Assessing selection bias in regression coefficients estimated from nonprobability samples with applications to genetics and demographic surveys” *Annals of Applied Statistics* 15, 1556–1581 <https://doi.org/10.1214/21-A0AS1453>
50. Barbaro RP\*, MacLaren G\*, **Boonstra PS**, Combes A, Agerstrand C, Annich G, Diaz R, Fan E, Hryniewicz K, Lorusso R, Paden ML, Stead CM, Swol J, Iwashyna TJ, Slutsky AS, Brodie D, for the Extracorporeal Life Support Organization “Extracorporeal Membrane Oxygenation for COVID-19: Evolving outcomes from an international registry” In press at *The Lancet* [https://doi.org/10.1016/S0140-6736\(21\)01960-7](https://doi.org/10.1016/S0140-6736(21)01960-7)

### Submitted / under revision

- **Boonstra PS**, Owen DR, and Kang J “Shrinkage priors for isotonic probability vectors and binary data modeling”
- Li P, Taylor JMGT, **Boonstra PS**, Lawrence TS, and Schipper MJ “Utility based approach in individualized optimal dose selection using machine learning methods”
- Delaney PG, Eisner ZJ, Thullah AH, Turay P, Sandy K, Friesen J, **Boonstra PS**, and Raghavendran K “Emergency Medical Dispatch (EMD) system creation for Lay First Responder (LFR) prehospital response coordination in Sierra Leone: A Prospective, randomized, simulation-based study”
- Flynn AJ, Beck A, Boisvert P, **Boonstra PS**, Caverly T, Gittlen N, Meng G, Raths B, Taksler G, and Friedman CP “CBK model composition using paired web services and executable functions: A demonstration for individualizing preventive services”
- Kohne JG, MacLaren G, Cagino L, **Boonstra PS**, Brodie D, and Barbaro RP “Tracheostomy practices and outcomes in patients with COVID-19 supported by ECMO: An analysis of the ELSO registry”

### Software

adaptBayes: R package implementing the adaptive Bayesian priors proposed in Boonstra and Barbaro (2020). Available at <https://github.com/umich-biostatistics/adaptBayes>. Co-authored with Mike Kleinsasser

seamlessim: R package implementing a simulator for modular seamless oncology trials as proposed in Boonstra, Braun, and Chase (2021). Available at <https://github.com/elizabethchase/seamlessim>. Co-authored with Elizabeth C. Chase

### Clinical Trials

#### Completed

1. “Open-label, single-center phase II study of MLN9708 (Ixazomib) in patients with relapsed/refractory cutaneous and peripheral T-cell lymphomas” PI: R Wilcox; [clinicaltrials.gov](https://clinicaltrials.gov): NCT02158975

## Active / Approved

2. "A phase II pilot study of metformin therapy in patients with relapsed chronic lymphocytic leukemia and untreated CLL patients with genomic deletion 11q" PI: S Malek; clinicaltrials.gov: NCT01750567
3. "A pilot study of ruxolitinib in secondary hemophagocytic syndrome" PI: R Wilcox; clinicaltrials.gov: NCT02400463
4. "Phase I dose escalation study to determine the maximum tolerated dose of the combination of ruxolitinib and bortezomib in patients with relapsed or refractory lymphoma" PI: T Phillips; clinicaltrials.gov: NCT02613598
5. "A phase I/II study of ruxolitinib in combination with nilotinib in patients with chronic phase CML who have achieved a major molecular remission but not a complete molecular remission on a tyrosine kinase inhibitor alone" PI: P Burke; clinicaltrials.gov: NCT02973711
6. "Phase I multi-site study evaluating the MTD, safety and efficacy of the combination venetoclax, lenalidomide and rituximab in patients with previously untreated mantle cell lymphoma" PI: T Phillips; clinicaltrials.gov: NCT03523975
7. "Phase I/II study of ixazomib and romidepsin in relapsed/refractory peripheral T-cell lymphoma (PTCL)" PI: S Devata; clinicaltrials.gov: NCT03547700
8. "Phase Ib, open label, single center study of pacritinib in relapsed/refractory lymphoproliferative disorders" PI: R Wilcox; clinicaltrials.gov: NCT03601819
9. "Phase II multi-center single arm study evaluating the effect of adding bortezomib to ibrutinib in ibrutinib relapsed mantle cell lymphoma" PI: T Phillips; clinicaltrials.gov: NCT03617484
10. "Phase II study of nivolumab and the antagonistic CSF-1R monoclonal antibody cabiralizumab (BMS-986227) in patients with relapsed/refractory peripheral T cell lymphoma" PI: R Wilcox; clinicaltrials.gov: NCT03927105
11. "Phase 2 study with minimal residual disease (MRD) driven adaptive strategy in treatment for newly diagnosed multiple myeloma with upfront daratumumab-based therapy" PI: C Ye; clinicaltrials.gov: NCT04140162
12. "A phase II study using a BFM regimen plus tyrosine kinase inhibitor in adult Philadelphia chromosome-positive acute lymphoblastic leukemia" PI: P Burke; clinicaltrials.gov: in progress
13. "Phase IB dose de-escalation study of the PI3k alpha/delta inhibitor, copanlisib given in combination with the immunotherapeutic agents, nivolumab and rituximab in patients with relapsed/refractory indolent lymphoma LYM17-145" PI: T Phillips; clinicaltrials.gov: in progress

## Under Review

14. "Phase II, open label, multicenter study of pacritinib in relapsed/refractory T-cell lymphoproliferative neoplasms" PI: R Wilcox

## Funding

### Current

- Clinical Trial (PI Phillips); \$307,438 03/03/20 – 12/15/24  
 Hoosier Cancer Research Network/Bristol-Myers Squibb Company  
*Phase IB dose de-escalation study of the PI3k alpha/delta inhibitor, Copanlisib given in combination with the immunotherapeutic agents, Nivolumab and Rituximab in patients with relapsed/refractory indolent lymphoma LYM17-145*  
 Role: Biostatistician
- Clinical Trial (PI Ye); \$782,241 10/22/19 – 12/01/24  
 Janssen Scientific  
*Phase 2 study with Minimal Residual Disease (MRD) driven adaptive strategy in treatment for newly diagnosed multiple myeloma (MM) with upfront daratumumab-based therapy*  
 Role: Biostatistician

1-R01CA236722, NIH/NCI (PI Wilcox); \$1,143,750 <i>Notch and GATA-3 as novel therapeutic targets in T-cell lymphomas</i> Role: Co-I	12/01/19 – 11/30/24
Clinical Trial (PI Wilcox); \$567,436 Hoosier Cancer Research Network/Bristol-Myers Squibb Foundation <i>Phase II study of nivolumab and the antagonistic CSF-1R monoclonal antibody cabiralizumab (BMS-986227) in patients with relapsed/refractory peripheral T cell lymphoma</i> Role: Biostatistician	04/16/19 – 04/08/24
1-R01CA233476, NIH/NCI (PI Wilcox); \$1,305,455 <i>The T-cell receptor's role in T-cell lymphoma pathogenesis</i> Role: Co-I	09/01/18 – 08/31/23
Clinical Trial (PI Devata); \$294,967 Hoosier Cancer Research Network/Millennium Pharmaceuticals, Inc. <i>Phase I/II study of ixazomib and romidepsin in relapsed/refractory peripheral T-cell lymphoma (PTCL)</i> Role: Biostatistician	09/24/18 – 08/26/23
2-P30CA046592, NIH/NCI (PI Fearon); \$25,866,261 <i>Comprehensive Cancer Center Core Grant II Biostatistics Core</i> Role: Co-I; Member, Biostatistics Core	06/01/12 – 05/31/23
2-T32CA083654, NIH/NCI (PI Taylor); \$192,805 (FY19) <i>Biostatistics Training In Cancer Research</i> Role: Program Associate Director	06/01/12 – 03/31/23
5-R01CA129102, NIH/NCI (PIs Taylor/Ghosh); \$1,568,291 <i>Statistical Methods for Cancer Biomarkers</i> Role: Co-I	01/01/09 – 06/30/22
Extracorporeal Life Support Organization (PI Boonstra); \$40,000 <i>ELSO Registry Contract</i> Role: PI	10/01/19 – 12/31/21
Clinical Trial (PI Phillips); \$281,854 AbbVie, Inc. <i>Phase I multi-site study evaluating the MTD, safety and efficacy of the combination venetoclax, lenalidomide and rituximab in patients with previously untreated mantle cell lymphoma</i> Role: Biostatistician	12/14/18 – 08/01/21

## Completed

1-R21HD090366, NIH/NICHHD (PI West); \$275,000 <i>Indices of Selection Bias for Non-Probability Samples</i> Role: Co-I	09/23/17 – 08/31/20
MICHR Pathway Award (PI Zelner); \$50,000 <i>Integrated Studies of Vaccine Effectiveness and Failure,</i> CTSA support from grant 5-UL1TR002240, NIH/NCATS, Role: Co-I	09/01/19 – 08/31/20
2-P01CA059827, NIH/NCI (PI TenHaken); \$1,784,750 <i>Optimization of High Dose Conformal Therapy</i> Role: Co-I	05/15/14 – 04/30/19
MICHR Pilot Grant Program (PI Boonstra); \$15,000 <i>Measuring consensus in the problem list using penalized regression models for rank data,</i> CTSA support from grant 5-UL1TR002240, NIH/NCATS, Role: PI	03/01/18 – 02/28/19
5-U01DE025633, NIH/NIDCR (PI DaSilva); \$282,634 <i>Investigation and Modulation of the Mu-Opioid Mechanism in Chronic TMD (in vivo)</i>	08/01/16 – 07/31/21



Role: Biostatistician 5-R01NS094413, NIH/NINDS (PI DaSilva); \$361,417 <i>Investigation and Modulation of the Central Mu-Opioid</i> Role: Biostatistician	09/30/15 – 08/31/20
Research Agreement, CTI BioPharma Corp. (PI Talpaz); \$75,032 <i>A New Prognostic Model for Response in Myelofibrosis Patients Treated with JAK2 Inhibitors</i> Role: Co-I	12/11/15 – 12/10/17
R6503-16, Leukemia and Lymphoma Society (PI Wilcox); \$270,027 <i>Peripheral T-cell Lymphoma, not otherwise specified: The cell of origin as a predictive biomarker and therapeutic target,</i> Role: Biostatistician	10/01/15 – 09/30/17
Award letter dated 10/22/15, MCubed2.0 Executive Committee (PIs Schipper/Boonstra/Matuszak); \$60,000 <i>Identifying treatment*biomarker interactions by combining a large dose-toxicity dataset without biomarkers and a similar but smaller dataset with biomarkers</i> Role: Co-PI	10/22/15 – 04/29/17
Award letter dated 08/21/15, Prostate Cancer Foundation (PI Palapattu); \$600,000 <i>Testing Targeted NK (TaNK) cell Therapy in Prostate Cancer</i> Role: Co-I	09/01/15 – 09/01/17
Award letter dated 05/02/14, Cancer Research Committee, UMCCC (PI Boonstra); \$25,000 <i>Increasing efficiency for estimating treatment-biomarker interactions with historical data</i> Role: PI	05/01/14 – 04/30/15

## Seminars and Panels

- Invited Panel, Sept 2021** *ECMO for COVID-19: Evolving Outcomes from the ELSO Registry* 32nd Annual ELSO Conference (Virtual)
- Invited Panel, Sept 2020** *The ELSO Registry on ECMO for COVID-19* 31st Annual ELSO Conference (Virtual)
- Invited Seminar, Mar 2020** *Statistics is not an easy-bake oven* Hope College, Department of Mathematics & Statistics Colloquium Series, Holland, MI.  
Link to slides
- Invited Seminar, Jan 2020** *Some novel extensions of the horseshoe prior* University of Michigan, Dept. of Biostatistics, Ann Arbor, MI  
Link to slides
- Invited Seminar, Nov 2019** *Incorporating historical information with adaptive Bayesian updates* Workshop on Bayes, Fiducial, and Frequentist Paradigm in Data Integration, Machine Learning, and Applications, University of Michigan, Dept. of Biostatistics, Ann Arbor, MI  
Link to slides
- Invited Talk, July 2019** *Measures of the degree of departure from ignorable sample selection* Joint Statistical Meetings, Denver, CO
- Invited Seminar, Mar 2019** *A modular framework for seamless oncology trials* Columbia University, Dept. of Biostatistics, New York, NY
- Invited Seminar, Dec 2018** *A modular framework for seamless oncology trials* University of Michigan, Dept. of Radiation Oncology Biostatistics Division Seminar, Ann Arbor, MI
- Invited Speed Talk, Sep 2018** *Modeling consensus among ordered lists using variable selection penalties* Rod Little Lectureship Dinner, Ann Arbor, MI  
Link to slides
- Topic Contributed Talk, Aug 2018** *A default prior for the intercept parameter in logistic regression* Joint Statistical Meetings, Vancouver, BC

- Contributed Talk, June 2018** *Incorporating historical models with adaptive Bayesian updates* 2018 WNAR Meeting, Edmonton, AB
- Invited Panelist, May 2018** *Fifth Bayesian, Fiducial, and Frequentist (BFF5) Conference* University of Michigan, Ann Arbor, MI
- Contributed Talk, July 2017** *Combining nested risk-prediction models* 38th Annual Conference of the International Society for Clinical Biostatistics, Vigo, Spain
- Invited Talk, June 2017** *Combining Bayesian generalized linear models with map-weighting* Biomedical Statistical Modeling Conference, Ann Arbor, MI
- Contributed Talk, Mar 2017** *A default prior for the intercept in binary-data regression models* 2017 ENAR Spring Meeting, Washington, DC
- Invited Talk, Oct 2016** *Building the bridge to phase II: Efficacy estimation in dose-expansion cohorts* 5th Early Phase Adaptive Trials Workshop, Politecnico di Torino, Turin, Italy
- Invited Seminar, Oct 2015** *Efficient designs for dose-expansion in phase I oncology trials* Fred Hutchinson Cancer Research Center, Seattle, WA
- Contributed Talk, Aug 2015** *Leveraging historical data for improved estimates of treatment-biomarker interactions* 36th Annual Conference of the International Society for Clinical Biostatistics, Utrecht, The Netherlands
- Invited Seminar, Jan 2015** *Strategies for tuning parameter selection in regression problems with many covariates* Fred Hutchinson Cancer Research Center, Seattle, WA
- Invited Talk, Oct 2014** *A statistical evaluation of expansion cohorts in phase I clinical trials* 4th Early Phase Adaptive Trials Workshop, Medical University of South Carolina, Charleston, SC
- Contributed Talk, May 2014** *Increasing efficiency for estimating treatment-biomarker interactions with historical data.* 2014 Midwest Biopharmaceutical Statistics Workshop, Ball State University, Muncie, IN.
- Invited Seminar, Oct 2013** *Prediction with high-dimensional data: A brief foray into biostatistics.* Hope College, Department of Mathematics Colloquium Series, Holland, MI.
- Contributed Talk, Aug 2013** *Adaptive shrinkage via the hyperpenalized EM algorithm* 34th Annual Conference of the International Society for Clinical Biostatistics, Munich, Germany
- Invited Talk, Aug 2013** *Adaptive shrinkage via the hyperpenalized EM algorithm* Joint Statistical Meetings, Montreal, QC
- Invited Seminar, Nov 2012** *Incorporating auxiliary information for improved prediction in high dimensional datasets: An ensemble of shrinkage approaches.* Department of Biostatistics Seminar, University of Michigan, Ann Arbor, MI
- Invited Seminar, Oct 2012** *Incorporating auxiliary information for improved prediction in high dimensional datasets: An ensemble of shrinkage approaches.* Department of Statistics Student Seminar, University of Michigan, Ann Arbor, MI.
- Contributed Talk, Aug 2012** *Incorporating auxiliary information for improved prediction in high dimensional datasets: An ensemble of shrinkage approaches.* Joint Statistical Meetings, San Diego, CA.
- Contributed Talk, Apr 2012** *Incorporating auxiliary information for improved prediction in high dimensional datasets: An ensemble of shrinkage approaches.* Highlighted Student Talk, Michigan Student Symposium in Statistical Science, Ann Arbor, MI.
- Invited Seminar, Dec 2011** *Prediction with high-dimensional data: A brief foray into biostatistics.* Calvin College, Department of Mathematics & Statistics Colloquium, Grand Rapids, MI.
- Contributed Talk, Oct 2011** *Incorporating auxiliary information for improved prediction in high dimensional datasets: An ensemble of shrinkage approaches.* Conference on Risk Assessment and Evaluation of Predictions, Silver Spring, MD.
- Contributed Talk, Aug 2011** *Incorporating auxiliary information for improved prediction in high dimensional datasets: An ensemble of shrinkage approaches.* Joint Statistical Meetings, Miami Beach, FL.
- Contributed Talk, Aug 2010** *Bayesian modeling for genetic anticipation in presence of mutational heterogeneity: A case-study in Lynch Syndrome.* Joint Statistical Meetings, Vancouver, BC.

**Oct 2009, June 2010** *A review of statistical methods for testing genetic anticipation: looking for an answer in Lynch Syndrome.* Molecular Epidemiology of Colorectal Cancer Investigators' Meeting, Ann Arbor, MI.

## Workshops and Guest Lectures

**Workshop, Aug 2019** *Introduction to R* University of Michigan, MICHR Bayesian Workshop Series, Ann Arbor, MI.  
[GitHub repo](#)

**Guest Lecture, July 2019** *Introduction to R markdown* University of Michigan Big Data Summer Institute, Ann Arbor, MI.  
[GitHub repo](#)

**Guest Lecture, June 2019** *Assessment of predictive models* University of Michigan Big Data Summer Institute, Ann Arbor, MI.  
[Link to slides](#)

**Workshop, May 2019** *Expanding your biostatistics toolkit for biomedical research* University of Michigan, Global Stat-Core Workshop, Ann Arbor, MI.  
[GitHub repo](#)

**Guest Lecture, Nov 2018** *A modular framework for seamless oncology trials* University of Michigan, Dept. of Biostatistics, BIOS 803: Biostatistics in Cancer Seminar, Ann Arbor, MI.  
[Link to slides](#)

**Guest Lecture, July 2018** *Introductory clinical trials* Hematology-Oncology Fellows, Rogel Cancer Center

**Workshop, May 2018** *Expanding your biostatistics toolkit for biomedical research* University of Michigan, Global Stat-Core Workshop, Ann Arbor, MI.

**Workshop, Aug 2017** *Building your biostatistics toolbox for cancer research* Dharmais Cancer Hospital, West Jakarta, Indonesia.

**Guest Lecture, Sep 2016** *Building the bridge to phase II: Efficacy estimation in dose-expansion cohorts* University of Michigan, Dept. of Biostatistics, BIOS 803: Biostatistics in Cancer Seminar, Ann Arbor, MI.

**Workshop, Mar 2016** *Building your biostatistics toolbox: Clinical Trials* St. Pauls Hospital Medical Millennium College, Addis Ababa, Ethiopia.

**Workshop, Mar 2016** *Building your biostatistics toolbox: Clinical Trials* Kenya Medical Research Institute, Nairobi, Kenya.

**Guest Lecture, Oct 2013** *Adaptive shrinkage via the hyperpenalized EM algorithm* University of Michigan, Dept. of Biostatistics, BIOS 803: Biostatistics in Cancer Seminar, Ann Arbor, MI.

**Guest Lecture, Apr 2011** *Bayesian modeling for genetic anticipation in presence of mutational heterogeneity: A case-study in Lynch Syndrome.* University of Michigan, Dept. of Biostatistics, BIOS 682: Applied Bayesian Inference, Ann Arbor, MI.

## Graduate Student Advising

PhD Committee Member: Pedro Orozco del Pino Department of Biostatistics, UM	2023 (anticipated)
PhD Committee Co-chair: Elizabeth Chase Department of Biostatistics, UM	2023 (anticipated)
PhD Committee Member (Cognate): Ramya Narahariseti Department of Epidemiology, UM	2022 (anticipated)
PhD Committee Member: Ali Rafei Survey Methodology Program, UM	2021 (anticipated)
PhD Committee Member (Cognate): Daniel Rocky Owen Department of Nuclear Engineering & Radiological Sciences, UM	2021

PhD Committee Member: Pin Li Department of Biostatistics, UM	2020
PhD Committee Member: Zhichao Sun Department of Biostatistics, UM	2016

## Service Activities

### Internal

Member, Protocol Review Committee Rogel Cancer Center, UM	Winter 2016 – ongoing
Reviewer, MICHR Pilot Grant Program – Promoting Progress in Statistics Award Michigan Institute for Clinical and Health Research, UM	Fall 2018
Statistician, Hem-Onc Fellows' journal club Rogel Cancer Center, UM	Feb 2018, Jan 2017, Aug 2015, Feb 2015, Apr 2014, Aug 2013, Mar 2013
Organizing Committee, Biomedical Statistical Modeling Conference Department of Biostatistics, UM	June 2017
Member, Qualifying Exam Committee Department of Biostatistics, UM	Fall 2015 – Winter 2016
Chair, Seminar Committee Department of Biostatistics, UM	Fall 2014 – Winter 2015
Faculty Advisor, Student Brownbag Committee Department of Biostatistics, UM	Fall 2014 – Winter 2015
Member, Bioinformatics/Statistical Genetics Faculty Search Committee Department of Biostatistics, UM	Fall 2010 – Winter 2011

### External

Ad-hoc reviewer for

*American Journal of Clinical Nutrition* (2015)  
*Annals of Applied Statistics* (2020)  
*BMC Bioinformatics* (2016)  
*BMC Research Notes* (2020,2017)  
*BMJ Open* (2018,2017)  
*Bayesian Analysis* (2017,2015,2014)  
*Bioinformatics* (2016)  
*Biometrics* (2019,2018,2017,2016,2015,2012)  
*British Journal of Radiology* (2017)  
*Cancer* (2020)  
*Cancer Cytopathology* (2018,2017,2016)  
*Circulation: Cardiovascular Quality and Outcomes* (2019,2018)  
*Clinical Trials* (2019,2017,2016)  
*Computational Statistics & Data Analysis* (2012)  
*Contemporary Clinical Trials Communications* (2018)  
*Electronic Journal of Statistics* (2014)  
*Genetic Epidemiology* (2011)  
*Harvard Data Science Review* (2021)  
*IEEE Transactions on Cybernetics* (2014)

*Iranian Journal of Science and Technology, Transactions A: Science* (2020,2019)  
*International Journal of Medical Informatics* (2020)  
*International Journal of Radiation Oncology · Biology · Physics* (2020,2019,2018,2017,2016,2015,2014)  
*International Statistical Review* (2020,2013)  
*Journal of Agricultural, Biological, and Environmental Statistics* (2015,2014,2013)  
*Journal of the American Medical Association (JAMA)* (2014)  
*JAMA Dermatology* (2017)  
*JCI Insight* (2020)  
*Journal of Multivariate Analysis* (2018)  
*Journal of the National Cancer Institute* (2020)  
*Journal of the American Statistical Association (JASA)* (2019,2018)  
*Journal of Statistical Planning & Inference* (2017,2013)  
*Pharmaceutical Statistics* (2019)  
*PLOS One* (2019,2018,2014)  
*Scientific Reports* (2021,2020)  
*Scientific World Journal* (2014)  
*Statistica Sinica* (2013)  
*Statistical Methods in Medical Research* (2021,2020,2019)  
*Statistics in Medicine* (2021,2020,2018,2017,2014,2013)  
*The American Statistician* (2018,2017)  
*The Annals of Applied Statistics* (2020)  
*The Lancet* (2018)  
*The Lancet Psychiatry* (2021,2020,2019)  
*The Lancet Haematology* (2021,2020)

Specialist Reviewer, Department of Defense Sep 2021, Virtual  
 2021 Prostate Cancer Research Program, DoD Congressionally Directed Medical Research Programs  
 Reviewer, National Institutes of Health Feb 2020, San Diego, CA  
 Cancer Biomarkers Study Section, National Cancer Institute  
 Reviewer, AVIESAN and the French National Cancer Institute Aug 2019  
 Interdisciplinary approaches in oncogenic processes and therapeutic perspectives: Contributions of mathematics and informatics to oncology  
 Member, Data Safety Monitoring Board 2019– ongoing  
 Fibromyalgia and Morning Light Treatment study (Fibrolight)  
 (clinicaltrials.gov NCT03794908)  
 Member, Data Safety Monitoring Board 2017– ongoing  
 mHealth to Improve Blood Pressure Control in Hypertensive African Americans (MI-BP)  
 (clinicaltrials.gov NCT02955537)  
 Reviewer, National Institutes of Health Apr 2019, Bethesda, MD  
 HEAL Initiative: Justice Community Opioid Innovation Network (JCOIN) Clinical Research Centers  
 Reviewer, ASA Biometrics Section Winter 2019  
 2019 David P. Byar Young Investigator Award  
 Invited Academic Guest Editor, PLOS One Winter 2019, Fall 2018  
 Discussant, National Institutes of Health Mar 2018, Washington, DC  
 Senator Paul D. Wellstone Muscular Dystrophy Specialized Research Centers (MDSRCs)  
 JSM Contributed Session Chair 2014 Joint Statistical Meetings, Boston, MA  
 JSM Docent 2014 Joint Statistical Meetings, Boston, MA  
 JSM Invited Session Chair 2012 Joint Statistical Meetings, San Diego, CA  
 JSM Contributed Session Chair 2011 Joint Statistical Meetings, Miami Beach, FL

## Memberships

American Statistical Association	since 2010
International Biometrics Society (Eastern North American Region)	since 2011
International Society for Clinical Biostatistics	since 2013

## Outside Consulting

Extracorporeal Life Support Organization (ELSO) (Ann Arbor, MI)	2019
Design Research Engineering (Novi, MI)	2016

Last updated: September 30, 2021