# Jared C. Foster, PhD

Mathematical Statistician

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Division of Cancer Treatment and Diagnosis

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## Education

BS, Applied Mathematics, University of Wisconsin-Parkside, 2006

MS, Biostatistics, University of California, Los Angeles, 2008

PhD, Biostatistics, University of Michigan, Ann Arbor, 2013

*Advisors:* Jeremy M.G. Taylor and Bin Nan

*Dissertation:* "Subgroup Identification and Variable Selection from Randomized Clinical Trial Data"

## Research Interests

Clinical Trials; Personalized Medicine; Prediction; Subgroup Identification; Variable Selection; Surrogate Endpoint Evaluation

## Professional Experience

*Research Associate*, Section of Cancer Center Statistics, Mayo Clinic, 2015-2017

*Assistant Professor of Biostatistics*, Mayo Clinic College of Medicine, 2016-2017

*Mathematical Statistician*, Biostatistics Branch, Biometric Research Program, Division of Cancer Treatment and Diagnosis, National Cancer Institute, 2017 – present

## Other Experience and Training

*Graduate Student Research Assistant*, The Semel Institute for Neuroscience and Human Behavior, 2008

*Research Specialist*, University of Wisconsin-Milwaukee, Department of Industrial Engineering, 2008

*Trainee*, NIH Biostatistics Training in Cancer Research Grant, University of Michigan, Ann Arbor, Biostatistics Department, 2008-2011

*Graduate Student Research Assistant*, University of Michigan, Ann Arbor, Biostatistics Department, 2011-2013

*IRTA Postdoctoral Fellow*, Biostatistics and Bioinformatics Branch, Division of Intramural Population Health Research, *Eunice Kennedy Shriver* National Institute of Child Health and Human Development, 2013-2015

# Awards

Rackham Conference Travel Grant (UM) (2011, 2012, 2013)

ENAR Distinguished Student Paper Award (2013)

NCI Director's Award of Merit: Triapine Clinical Development Group (2019)

# Refereed Research Articles

1. Zhang, J, Lee, J, Urba, S, **Foster, J** and Worden, F (2010), A phase II trial evaluating weekly docetaxel and capecitabine in patients with metastatic or advanced, locally recurrent head and neck cancers, *Cancer Investigation*, 28(9):910-6

2. **Foster, JC**, Taylor, JMG and Ruberg, SJ (2011), Subgroup identification from randomized clinical trial data, *Statistics in Medicine*, 30(24):2867-2880

3. **Foster, JC**, Taylor, JMG and Nan, B (2013), Variable selection in monotone single-index models via the adaptive LASSO, *Statistics in Medicine*, 32(22):3944-54

4. Mason, H, DeRubeis, MB, **Foster, JC**, Taylor, JMG, Friese, C and Worden, FP (2013), Outcomes Evaluation of a Weekly Nurse Practitioner-Managed Symptom Management Clinic for Patients with Head and Neck Cancer Treated with Chemoradiotherapy, *Oncology Nursing Forum*, 40(6):581-6

5. Waterman, J, Nadeem, E, Paczkowski, E, **Foster, JC**, Lange, J, Belin, TR and Miranda, J (2013), Pre-Placement Risk and Longitudinal Cognitive Development for Children Adopted from Foster Care, *Child Welfare*, 92(4):9-30

6. Taylor, JMG, Cheng, W, and **Foster, JC** (2014), Reader Reaction to "A robust method for estimating optimal treatment regimes" by Zhang et al (2012), *Biometrics*, doi: 10.1111/biom.12228

7. **Foster, JC**, Taylor, JMG, Kaciroti, N and Nan, B (2014), Simple Subgroup Approximations to Optimal Treatment Regimes From Randomized Clinical Trial Data (2014), *Biostatistics*, doi: 10.1093/biostatistics/kxu049

8. **Foster, JC**, Nan, B, Shen, L, Kaciroti, N and Taylor, JMG (2015), Permutation Testing for Treatment-Covariate Interactions and Subgroup Identification, *Statistics in Biosciences*, doi: 10.1007/s12561-015-9125-9

9. **Foster, JC**, Liu, D, Albert, PS and Liu, A, Identifying Subgroups of Enhanced Predictive Accuracy From Longitudinal Biomarker Data Using Tree-Based Approaches:

Applications to Fetal Growth, *Journal of the Royal Statistical Society: Series A (Statistics in Society)*, doi: 10.1111/rssa.12182

10. Nadeem, E, Waterman, J, **Foster, J**, Paczkowski, E, Belin, TR and Miranda, J. Long-term effects of pre-placement risk factors on children's psychological symptoms and parenting stress among children adopted from foster care (accepted, *Journal of Emotional and Behavioral Disorders*)

11. Freedman RA, **Foster JC**, Seisler DK, Lafky JM, Muss HB, Cohen HJ, Mandelblatt J, Winer EP, Hudis CA, Partridge AH, Carey LA, Cirrincione C, Moreno-Aspitia A, Kimmick G, Jatoi A, Hurria A. (2016), Accrual of Older Breast Cancer Patients to Alliance Systemic Therapy Trials over Time: Protocol A151527. *Journal of Clinical Oncology*

12. Freedman RA, Seisler DK, **Foster JC**, Lafky JM, Kimmick G, Hurria A, Cohen HJ, Winer EP, Hudis CA, and Muss HB (2016), Risk of Acute Myeloid Leukemia and Myelodysplastic Syndrome Among Older Women Receiving Anthracycline-Based Adjuvant Chemotherapy for Breast Cancer on Modern Cooperative Group Trials (Alliance A151511). *Breast Cancer Research and Treatment* (Accepted). 2016

13. Himelstein A, **Foster JC**, Khatcheressian JL, Roberts JD, Seisler DK, Novotny PJ, Qin R, Go RS, Grubbs SS, O.Connor T, Velasco MR, Weckstein D, O.Mara A, Loprinzi CL, and Shapiro CL (2017), Effect of longer interval dosing vs. standard dosing of zoledronic acid on skeletal events among patients with bone metastasis: a randomized clinical trial. *Journal of the American Medical Association*, 317(1):48–58. doi:10.1001/jama.2016.19425

14. **Foster JC**, Le-Rademacher JG, Feliciano JL, Gajra A, Seisler DK, DeMatteo R, Lafky JM, Hurria A, Muss HB, Cohen HJ and Jatoi A (2017), Comparative "nocebo effects" in older patients enrolled in cancer therapeutic trials: Observations from a 446–patient cohort, *Cancer*, 123: 4193–4198. doi:10.1002/cncr.30867

15. Shapiro CL, Moriarty JP, Dusetzina S, Himelstein AL, **Foster JC**, Grubbs SS, Novotny PJ, and Borah BJ (2017), Cost-Effectiveness Analysis of Monthly Zoledronic Acid, Zoledronic Acid Every 3 Months, and Monthly Denosumab in Women With Breast Cancer and Skeletal Metastases: CALGB 70604 (Alliance), *Journal of Clinical Oncology* 35:35, 3949–3955

16. Tallarico M, **Foster JC**, Seisler D, Lafky JM, Hurria A, Jatoi A, Cohen HJ, Muss HB, Bartlett N, Cheson BD, Jung SH, Leonard JP, Byrd JC, and Nabhan C, Frequency and Impact of Grade 3/4 Toxicities of Biologics on Outcomes of Elderly Patients with Chronic Lymphocytic Leukemia and Non-Hodgkin Lymphoma (Alliance A151611), *Journal of Geriatric Oncology* 2018 9(4):321-328, 2018

17. **Foster JC**, Freidlin B, Kunos CA, Korn EL: Single-Arm Phase II Trials of Combination Therapies: A Review of the CTEP Experience 2008–2017, *Journal of the National Cancer Institute*, djz193, https://doi.org/10.1093/jnci/djz193, 2019

18. **Foster JC**, Freidlin B, Korn EL, Smith MA, An Evaluation of the Contribution of Randomized Cancer Clinical Trials Evaluating Agents without Documented Single Agent Activity (Accepted by *ESMO Open*, 2020)

19. Reuss JE, Stern D, **Foster J**, Ramaswami R, Lurain K, Chen H, Streicher H, Kem R, Little RF, Sharon E, Inclusion of people living with HIV in anti-PD(L)1 clinical trials: Results of an NCI-driven initiative to broaden eligibility in cancer clinical trial development (Accepted by *JAMA Network Open*, 2020)

20. Chen AP, Kummar S, Moore N, Rubinstein LV, Zhao Y, Williams PM, Palmisano A, Sims D, O'Sullivan Coyne G, Rosenberger CL, Simpson M, Raghav KPS, Meric-Bernstam F, Leong S, Waqar S, **Foster JC**, Konate MM, Biswajit D, Karlovich C, Lih CJ, Polley E, Simon R, Li MC, Piekarz R and Doroshow JH, Molecular Profiling-Based Assignment of Cancer Therapy (NCI-MPACT): A Randomized Multicenter Phase 2 Trial (Accepted by *JCO Precision Oncology*, 2020)

21. Tolaney SM, Garrett-Mayer E, White J, Blinder VS, **Foster JC**, Kordestani LA, Hwang ES, Bliss JM, Rakovitch E, Perlmutter J, Spears PA, Frank E, Tung NM, Elias AD, Cameron D, Denduluri N, Best AF, DiLeo A, Baizer L, Butler LP, Schwartz E, Winer EP and Korde LA, Updated standardized definitions for efficacy endpoints in adjuvant breast cancer clinical trials: STEEP Version 2.0 (Under second review; revisions invited by *Journal of Clinical Oncology*)

22. Jewett M, Dutcher J, Signoretti S, Bratslavsky G, Finelli A, Kim H, Shuch B, Agrawal S, Bex A, Dignam J, **Foster J**, Halabi S, Huang E, Huang W, Kapur P, Kluetz P, Kramer B, Maskens D, McShane L, Pathak A, Pedrosa I, Reuter V, Singer EA, Smith A, Amiri AT, Tran M, Trindade C and Uzzo R, Summary and Recommendations from the NCI Clinical Trials Planning Meeting on Improving Management of Small Renal Masses and Early Stage Renal Cell Carcinoma (To be submitted)

23. O'Sullivan Coyne G, Kumar S, Do K, Hu J, Chow W, Zlott J, Juwara L, Bruns A, Meehan R, Regier Voth A, Bottaro D, Costello R, Miller B, Kinders B, Parchment RE, Rubinstein L, **Foster JC**, Wright JJ, Doroshow J and Chen AP, Phase 2 single arm trial of cabozantinib (XL-184), a dual inhibitor of MET and VEGFR, in patients with refractory soft tissue sarcomas (To be submitted)

# Book Chapters

1. **Foster JC**, Le-Rademacher J, Mandrekar SJ: Design Considerations for Phase II Oncology Clinical Trials, in Roychoudhury S, Lahiri S (ed): Statistical Approaches in Oncology Clinical Development. Boca Raton, FL, CRC Press, 2018, pp 97-114

# Invited Talks

"Identifying Subgroups in Clinical Trials Via Random Forests and Regression Trees", Conference on Multiple Comparison Procedures, Washington, DC, September 2011

"Subgroup Identification Using Random Forests and Regression Trees", Conference on Statistical Learning and Data Mining, Ann Arbor, MI, June 2012

"Subgroup identification using Virtual Twins and extensions", Novartis Biostatistics Workshop, East Hanover, NJ, June 2013

"Identifying Subgroups of Enhanced Predictive Accuracy From Longitudinal Biomarker Data Using Tree-Based Approaches: Applications to Monitoring Fetal Growth", Joint 24th ICSA Applied Statistics Symposium and 13th Graybill Conference, Fort Collins, CO, June 2015

"Dan Sargent: A Wonderful Mentor and a Great Man", ENAR, Washington, DC, March 2017

" Individualized prediction and subgroup identification from longitudinal biomarker data: applications to fetal growth", Survival, Longitudinal and Multivariate Data (SLAM) Working Group Seminar, Johns Hopkins University, Baltimore, MD, December 2017

"Data-driven methods for subgroup identification and personalized medicine" (two-part short course), Survival, Longitudinal and Multivariate Data (SLAM) Working Group Seminar, Johns Hopkins University, Baltimore, MD, March 2018

# Contributed Talks

"Finding and Validating Subgroups in Clinical Trials", ENAR (poster), New Orleans, LA, March 2010

"Finding and Validating Subgroups in Clinical Trials", Michigan Student Symposium for Interdisciplinary Statistical Sciences (poster), Ann Arbor, MI, April 2010

"Variable Selection in Monotone Single-Index Models Via the Lasso", ENAR, Miami, FL, March 2011

"Variable Selection in Monotone Single-Index Models via the Adaptive Lasso", JSM, San Diego, CA, August 2012

"Variable Selection in Monotone Single-Index Models Via the adaptive LASSO", ENAR, Orlando, FL, March 2013

"Subgroup Identification in Randomized Clinical Trial Data Using Random Forests and Regression Trees", JSM (topic contributed), Montreal, Canada, August 2013

"Simple Approximations to Optimal Treatment Regimes in Randomized Clinical Trial Data", ENAR, Baltimore, MD, March 2014

"Identifying Subgroups of Enhanced Predictive Accuracy From Longitudinal Biomarker Data Using Tree-Based Approaches: Applications to Monitoring Fetal Growth", JSM, Boston, MA, August 2014

# Memberships

American Statististical Association, 2018-present

# Journal Responsibilities

Anonymous Referee: *American Journal of Preventive Medicine*; *Biometrics*; *Biostatistics*; *Clinical Trials*; *Current Problems in Cancer*; *Journal of the American Statistical Association*; *Journal of the National Cancer Institute*; *Journal of the Royal Statistical Society: Series A*; *Nature Medicine*; *Paediatric and Perinatal Epidemiology*; *Scandinavian Journal of Statistics*; *Scientific Reports*; *Statistics in Biosciences*; *Statistics in Medicine*

# Institutional Committees

Mayo Clinic Scientific Review Committee B (Solid Tumor), 2016

Mayo Clinic Scientific Review Committee A (Hematology), 2016

NCI Genitourinary Cancer Steering Committee, 2017-present

NCI Breast Cancer Steering Committee, 2017-present

ANCHOR Data and Safety Monitoring Board (non-voting member), 2017-present

AMC Data and safety Monitoring Board (non-voting member), 2017-present

NRG Oncology Data Monitoring Committee (Panel B) (non-voting member), 2017-present

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