

# Maria DeYoreo

RAND Corporation  
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## EDUCATION

**Ph. D., Statistics and Applied Mathematics**, September 2014  
University of California, Santa Cruz  
*Dissertation:* “A Bayesian Framework for Fully Nonparametric Ordinal Regression.”

**M.S., Statistics and Applied Mathematics**, September 2011  
University of California, Santa Cruz

**B.S., Mathematical Sciences**, High Honors, June 2009  
University of California, Santa Barbara  
College of Letters and Sciences

## PROFESSIONAL EXPERIENCE

**Co-Director, RAND Center for Causal Inference**, January 2022 – present

**Statistician**, RAND Corporation, June 2019 – present

**Associate Statistician**, RAND Corporation, July 2017 – June 2019

**Postdoctoral Researcher**, Duke University, September 2014 – June 2017

**Biostatistics Intern**, Amgen, Thousand Oaks, CA, June 2012 – September 2012

**Graduate Student Researcher**, National Marine Fisheries Service, 2010–2011

**Graduate Student Researcher**, University of California, Santa Cruz, 2009–2014

## AWARDS AND HONORS

Travel award for Advances in Neural Information Processing Systems (NIPS) “Practical Bayesian Nonparametrics” workshop, Barcelona, Spain, 2016

2016 Savage Award in Applied Methodology for outstanding Ph. D. dissertation in applied Bayesian methodology

Travel award for ISBA World Meeting, Sardinia, Italy, 2016

International Society for Bayesian Analysis Lifetime Members Junior Researcher Award, 2014

University of California Chancellor’s Dissertation Year Fellowship for academic year 2013–2014

NSF Travel Award for Workshop on Bayesian Nonparametrics, Veracruz, Mexico, 2011

**JOURNAL  
PUBLICATIONS**

1. Cantor, J.H., DeYoreo, M., Hanson, R., Kofner, A., Kravitz, D., Salas, A., Stein, B.D., Kapinos, K.A. (2022) "Patterns in Geographic Distribution of Substance Use Disorder Treatment Facilities in the US and Accepted Forms of Payment From 2010 to 2021." *JAMA Network Open*, 5(11):e2241128.
2. Kapinos, K., DeYoreo, M., Lawrence, R., Waymouth, M., Uscher-Pines, L. "COVID-19 Vaccine Uptake and Attitudes among Pregnant and Postpartum Parents." *American Journal of Obstetrics & Gynecology Maternal-Fetal Medicine*, 26;4(6):100735.
3. DeYoreo, M., Kapinos, K., Lawrence, R., Alvarado, G., Waymouth, M., Demirci, J., Uscher-Pines, L. "Changes in Breastfeeding and Lactation Support Experiences during COVID." *Journal of Women's Health*. doi: 10.1089/jwh.2022.0146.
4. DeYoreo, M., Rutter, C., Lee, S. (2022). "Two-stage modeling to identify how colorectal cancer risk changes with period and cohort." *American Journal of Epidemiology*. doi:10.1093/aje/kwac177.
5. DeYoreo, M., Anhang Price, R., Bradley, M., Schlang, Montemayor, C., Tolpadi, A., Cleary, P., D., Teno, J., Elliott, M. (2022). "Adding Telephone Follow-up Can Improve Representativeness of Surveys of Seriously Ill People." *Journal of the American Geriatrics Society*. 1–4. doi:10.1111/jgs.17711
6. DeYoreo, M., Anhang Price, R., Montemayor, C., Tolpadi, A., Bradley, M., Schlang, D., Teno, J., Cleary, P., Elliott, M. (2022). "Adjusting for Patient Characteristics to Compare Quality of Care Provided by Serious Illness Programs." *Journal of Palliative Medicine*. doi: 10.1089/jpm.2021.0423
7. Anhang Price, R., Bradley, M., Ye, F., Schlang, D., DeYoreo, M., Cleary, P., M. Elliott, M., C. Montemayor, Timmer, M., Tolpadi, T., Teno, J. (2022). "Reliable and Valid Survey-Based Measures to Assess Quality of Care in Home-Based Serious Illness Programs." *Journal of Palliative Medicine*. doi: 10.1089/jpm.2021.0424
8. DeYoreo, M., Rutter, C., Ozik, J., and Collier, N. (2022). "Sequentially Calibrating a Bayesian Microsimulation Model to Incorporate New Information and Assumptions." *BMC Medical Informatics and Decision Making*, 22:12. doi: 0.1186/s12911-021-01726-0
9. Uscher-Pines, L., Demirci, J., Waymouth M., Lawrence, R., Parks, A., Mehrotra, A., Ray, K., DeYoreo, M., Kapinos, K. (2022). "Impact of Telelactation Services on Breastfeeding Outcomes among Black and Latinx Parents: Protocol for the Tele-MILC Randomized Controlled Trial." *Trials*, 23(1):5. doi: 10.1186/s13063-021-05846-w.
10. Pedersen ER, Linnemayr S, Shadel WG, Zutshi R, DeYoreo M, Cabrerros I, Tucker JS. (2022). "Substance use and mental health outcomes from a text messaging-based intervention for smoking cessation among young people experiencing homelessness." *Nicotine and Tobacco Research*, 24(1):130-134. doi: 10.1093/ntr/ntab160.
11. Linnemayr, S., Zutshi, R., Shadel, W. G., Pedersen, E. R., DeYoreo, M., Tucker, J. S. (2021). "Text Messaging Intervention for Young Smokers Experiencing Homelessness: Lessons Learned from a Randomized Controlled Trial." *JMIR mHealth and uHealth*, 9, e23989. doi: 10.1093/ntr/ntab055.
12. Tucker, J. S., Linnemayr, S., Pedersen, E. R., Shadel, W. G., Zutshi, R., DeYoreo, M., and Cabrerros, I. (2021). "Pilot Randomized Clinical Trial of a Text Messaging-Based Intervention for Smoking Cessation Among Young People Experiencing Homelessness." *Nicotine and Tobacco Research*, 23(10):1691-1698.

13. Timbie, J., Kranz, A., DeYoreo, M., Eshete-Roesler, B., Elliott, M., Escarce, J., Totten, M., Damberg, C. (2020). “Racial and Ethnic Disparities in Care for Health System-Affiliated Physician Organizations and Non-Affiliated Physician Organizations.” *Health Services Research*, 55(S3): 1107-1117.
14. Kranz, A., DeYoreo, M., Eshete-Roesler, B., Damberg, C., Totten, M., Escarce, J., Timbie, W. (2020). “Health System Affiliation of Physician Organizations and Quality of Care for Medicare Beneficiaries who have High Needs.” *Health Services Research*, 55(S3):1118–1128.
15. DeYoreo, M., Lansdorp-Vogelaar, I., Knudsen, A., Kuntz, K., Zauber, A., Rutter, C. (2020). “Validation of Colorectal Cancer Models on Long-term Outcomes from a Randomized Controlled Trial.” *Medical Decision Making*, 40(8):1034–1040.
16. DeYoreo, M. and Reiter, J. (2020). “Bayesian Mixture Modeling for Multivariate Conditional Distributions.” *Journal of Statistical Theory and Practice*, 14(45).
17. Tucker, J. S., Pedersen, E. R., Linnemayr, S., Shadel, W. G., DeYoreo, M., and Zutshi, R. (2020). “A Text Message Intervention for Quitting Cigarette Smoking Among Young Adults Experiencing Homelessness: Study Protocol for a Pilot Randomized Controlled Trial.” *Addiction Science and Clinical Practice*, 15(11).
18. O’Hanlon C., Kranz A., DeYoreo M., Mahmud A., Damberg C., and Timbie J. (2019). “Access, Quality, and Financial Performance of Rural Hospitals Following Health System Affiliation.” *Health Affairs*, 38(12):2095–2104.
19. Rutter C., Ozik J., DeYoreo M., and Collier, C. (2019) “Microsimulation Model Calibration using Incremental Mixture Approximate Bayesian Computation.” *Annals of Applied Statistics*, 13(4):2189–2212.
20. Schifeling T., Reiter J., and DeYoreo M. (2019). “Data fusion for correcting measurement errors.” *Journal of Survey Statistics and Methodology*, 7(2):175–200.
21. DeYoreo M. and Kottas A. (2018). “Modeling for dynamic ordinal regression relationships: An application to estimating maturity of rockfish in California.” *Journal of the American Statistical Association*, 113(531):68–80.
22. DeYoreo M. and Kottas A. (2018). “Bayesian nonparametric modeling for multivariate ordinal regression.” *Journal of Computational and Graphical Statistics*, 27(1): 71–84.
23. DeYoreo M. and Kottas A. (2017). “A Bayesian nonparametric Markovian model for nonstationary time series.” *Statistics and Computing*, 27(6):1525–1538.
24. DeYoreo M., Reiter J., and Hillygus S. (2017). “Bayesian mixture models with focused clustering for mixed ordinal and nominal data.” *Bayesian Analysis*, 12(3): 679–703.
25. Fosdick B., DeYoreo M., and Reiter J. (2016). “Categorical data fusion using auxiliary information.” *Annals of Applied Statistics*, 10(4):1907-1929.
26. DeYoreo M. and Smith B. (2016) “Reducing costs and improving fit for clinical trials that have positive valued data.” *Statistics in Biopharmaceutical Research*, 9(2): 234–242.
27. DeYoreo M. and Kottas A. (2015). “A fully nonparametric modeling approach to binary regression.” *Bayesian Analysis*, 10, 821–847.

28. Kiziltan B., Kottas A., DeYoreo M., and Thorsett S. (2013). “The neutron star mass distribution.” *The Astrophysical Journal*, 778, 66.

**PEER REVIEWED  
REPORTS  
(UNCLASSIFIED)  
AND BOOK  
CHAPTERS**

29. Kavanaugh, J., Carman, K., DeYoreo, M., Chandler, N., and Davis, L. (2021). “The drivers of trust and distrust: exploring components of trustworthiness.” Santa Monica, CA: RAND Corporation, RR-A112-7.

30. Dunigan, M., Brown, R., Cherney, S., DeYoreo, M., Hastings, C., Lewis, J., Panis, C., Payne, L., Schuille, M., and Skrabala, L. (2019). “Army Expeditionary Civilian Demand.” Santa Monica, CA: RAND Corporation, RR-2854-A.

31. Timbie, J. W., DeYoreo, M., Liu, J., Quigley, D., Slaughter, M. E., Baseman, L., Slaughter, M., Palimaru, A., and Kahn. K. (2019). “Evaluation of California’s Global Payment Program: final report.” Santa Monica, CA: RAND Corporation, RR-3080-CDHCS.

32. Ashwood, J. S., Osilla, K. C., DeYoreo, M., Breslau, J., Ringel, J. S., Montemayor, C. K., Shahidinia, N., Adamson, D. M., Chamberlin, M., and Burnham, A. M. (2019). “Review and evaluation of the substance abuse, mental health, and homelessness grant formulas.” Santa Monica, CA: RAND Corporation, RR-2454-ASPEC.

33. DeYoreo, M. and Kottas, A. (2019). “Bayesian nonparametric density regression for ordinal responses.” In J.-L. Dortet-Bernadet, Y. Fan, D. Nott and M. Smith (Editors), *Flexible Bayesian Regression Modeling*. Elsevier.

34. Timbie, J. W., Liu, J., DeYoreo, M., Quigley, D., Slaughter, M. E., Baseman, L., and Kahn. K. (2018). “Evaluation of the Global Payment Program: midpoint report.” Santa Monica, CA: RAND Corporation, RR-2509-CDHCS.

**OTHER  
PUBLICATIONS**

35. DeYoreo M. (2018) “Stratified random sampling.” *The SAGE Encyclopedia of Educational Research, Measurement, and Evaluation*, Bruce Frey (Ed.). Thousand Oaks: Sage.

36. Kottas A., DeYoreo M., and Poynor V. (2013). Contributed discussion of paper *Bayesian nonparametric inference – Why and how?* by Peter Müller and Riten Mitra. *Bayesian Analysis*, 8, 338–341.

**EDITORIAL  
SERVICE**

Associate Editor, *Annals of Applied Statistics*, 2018 – present

Editor, *International Society for Bayesian Analysis Bulletin*, 2018 – 2020

**REFEREEING  
SERVICE**

Referee for: *Annals of Applied Statistics*, *Bayesian Analysis*, *Biostatistics*, *Econometrics and Statistics*, *Health Services and Outcomes Research*, *Health Services Research*, *JASA*, *JRSS-A*, *JRSS-C*, *Stat*, *Statistics and Computing*, *Statistics and its Interface*, *Statistics in Medicine*, *Statistical Methods in Medical Research*

National Science Foundation proposal reviewing

**RAND SERVICE**

RAND statistics group recruiting committee, 2022-2023

RAND Center for Causal Inference Co-Director, 2022-present

RAND Center for Causal Inference Core Member

Quality Assurance review of RAND reports, ongoing

Technical Mentor, Pardee RAND Graduate School Opioid Hackathon, 2018

Led Statistical Consulting Service by addressing and triaging consulting requests

**OTHER  
PROFESSIONAL  
SERVICE**

Scientific Committee member for 2018 ISBA World Meeting

Finance Committee member, International Society for Bayesian Analysis, 2017

Section on Bayesian Statistical Science student paper competition judge, 2017

DataFest competition judge and consultant, Duke University, 2015 and 2017

Session organizer and chair for session “Modeling, Analysis, and Inference from Surveys using Bayesian Methods” at ISBA and JSM, 2016

Graduate student representative, UCSC, academic year 2013-2014

**SELECT  
PRESENTATIONS**

“Estimating treatment capacity and client counts for substance abuse treatment facilities,” presentation at AcademyHealth Annual Research Meeting, Washington, DC, June 2019.

“Impact of Health System Affiliation on Performance of Critical Access Hospitals,” presentation at Joint Statistical Meetings (JSM), Vancouver, BC, August 2018.

“Microsimulation model calibration using incremental approximate Bayesian computation,” poster presentation at 31st Conference on Neural Information Processing Systems (NIPS), Long Beach CA, 2017.

“Dynamic Ordinal Regression Modeling,” invited presentations at Colorado State University, Department of Statistics; University of Minnesota, Department of Biostatistics, December 2016-January 2017.

“Dynamic Ordinal Regression Modeling and Data Fusion,” invited presentations at University of Michigan, Department of Statistics; McCoombs School of Business, IROM Department; Ohio State University, Department of Statistics, January 2017.

“Dynamic Ordinal Regression Modeling to Study Body Characteristics of Rockfish in California,” invited presentations at University of California, Davis, Department of Statistics; The RAND Corporation, Santa Monica, CA, January 2017.

“Practical Bayesian Nonparametrics,” invited presentation at Bayesian Nonparametrics workshop at Neural Information Processing Systems, Barcelona, Spain, December 2016.

“Nonparametric Bayesian Models for Mixed Data,” invited presentation at AISC Conference, University of North Carolina at Greensboro, September 2016.

“Bayesian Nonparametric Dynamic Ordinal Regression Modeling,” invited presentation at Savage Award finalists session, ISBA World Meetings, Sardinia, Italy, June 2016.

“Combining Data from Multiple Sources,” invited presentation at Joint Statistical Meetings, Chicago, IL, August 2016.

“Modeling for Dynamic Ordinal Regression Relationships to Study Maturity of Rockfish in California,” invited presentation at University of Washington, Department of Statistics, January, 2016.

“Incorporating Conditionally Representative Auxiliary Information in Data Fusion,” invited presentation at NSF National Census Research Network Virtual Seminar, October, 2015.

“Nonparametric Bayesian Models with Focused Clustering for Mixed Ordinal and Nominal Data,” invited presentation at topic-contributed oral presentation at Joint Statistical Meetings, Seattle, WA, August 2015.

“Fully Nonparametric Modeling for Multivariate Ordinal Regression,” invited presentation at j-ISBA session, Cancun, Mexico, July 2014.

## TEACHING EXPERIENCE

**Instructor**, Duke University Spring 2016  
Taught *Regression Analysis* to 60 undergraduate statistics and non-statistic majors. The semester-long course focused on data analysis using R.

**Instructor**, UCSC Summer 2013  
Taught *Statistical methods for the biological, environmental, and health sciences* to 75 undergraduate science majors over a 5 week summer session.

**Graduate Student Instructor**, UCSC Spring 2013  
Taught a computer-based laboratory course in statistical methods for the biological, environmental, and health sciences in which students use JMP to gain hands-on experience with data analysis.

**Teaching Assistant**, UCSC 2009-2013  
TA for seven quarters, courses include introductory statistics, calculus for economics, classical and Bayesian inference (mixed undergraduate and graduate), introduction to probability theory, and biostatistics.