

# Derek Bean

Department of Statistics  
University of Wisconsin-Madison  
1220 Medical Sciences Center  
1300 University Ave.  
Madison, WI 53706

Phone: (510) 410-2792  
Office: 1214 Medical Sciences Center  
Email: derekb@stat.wisc.edu  
Homepage: <http://www.stat.wisc.edu/~derekb/>

## Education

Ph.D. Statistics. University of California, Berkeley. May 2014.

B.A. Mathematics, University of Maine. May 2007.

*Summa cum laude* from the College of Liberal Arts and Sciences. 3.98 GPA.

## Research Interests

High-dimensional statistics

High-dimensional robust regression

Dimensionality reduction via non-Gaussianity

## Research

### *Publications on high-dimensional robust regression*

D. Bean, P. J. Bickel, N. El Karoui and B. Yu. Optimal M-estimation in high-dimensional regression. *Proceedings of the National Academy of Sciences of the United States of America (PNAS)*, 110 (2013) 14563–14568.

N. El Karoui, D. Bean, P. J. Bickel and B. Yu. On robust regression with high-dimensional predictors. *PNAS*, 110 (2013), 14557–14562.

D. Bean, P. J. Bickel, N. El Karoui and B. Yu. Penalized robust regression in high-dimension. Technical Report No. 813 (2012), Department of Statistics, University of California, Berkeley.

D. Bean, P. J. Bickel, N. El Karoui and B. Yu. Optimal objective function in high-dimensional regression. Technical Report No. 810 (2012), Department of Statistics, University of California, Berkeley.

N. El Karoui, D. Bean, P. J. Bickel, C. Lim and B. Yu. Robust regression with high-dimensional predictors. Technical Report No. 812 (2012), Department of Statistics, University of California, Berkeley.

N. El Karoui, D. Bean, P. J. Bickel, C. Lim and B. Yu. On robust regression with high-dimensional predictors. Technical Report No. 811 (2012), Department of Statistics, University of California, Berkeley.

### *Miscellaneous publications*

P. Grob, D. Bean, D. Typke, X. Li, E. Nogales and R. M. Glaeser. Ranking TEM cameras by their response to electron shot noise. *Ultramicroscopy*, 133 (2013), 1–7.

D. Shilane and D. Bean. Growth estimators and confidence intervals for the mean of negative binomial random variables with unknown dispersion. *Journal of Probability and Statistics*, 2013 (2013), 9 pages.

S. Subramanian and D. Bean. The missing censoring indicator model and the smoothed bootstrap. *Computational Statistics and Data Analysis*, 53 (2008) 471–476.

S. Subramanian and D. Bean. Hazard function estimation from homogeneous right censored data with missing censoring indicators. *Statistical Methodology*, 5 (2008), 515–527.

## Paper Presentations

D. Bean. High-dimensional regression: how to pick the objective function in high-dimension. In *Berkeley Statistics Annual Research Symposium (BSTARS)*, March 11, 2013, University of California, Berkeley.

D. Shilane and D. Bean. A growth estimator for the mean of negative binomial random variables with unknown dispersion. In *Advances in Testing and Estimation: 2011 Joint Statistical Meetings*, Miami, FL.

D. Bean and S. Subramanian. Smoothed bootstrap-based bandwidth estimation. In *Methodology for Survival and Censored Data: 2006 Joint Statistical Meetings*, Seattle, WA.

## Teaching

### *University of Wisconsin-Madison*

Statistics 609 Mathematical Statistics I, Instructor, Fall 2017. Introductory mathematical statistics for master's students focusing on techniques in Probability theory.

Statistics 371 Introductory Applied Statistics for the Life Sciences, Instructor, Spring 2017. Introductory statistics for undergraduate student in the biological sciences.

Statistics 301 Introduction to Statistical Methods, Instructor, Summer 2016 and Fall 2016. Introductory statistics for undergraduate students.

Statistics 571 Statistical Methods for Bioscience I, Instructor, Fall 2015. Introductory statistics for graduate students in the biological sciences.

Statistics 610 Introduction to Statistical Inference, Instructor, Spring 2015–2018. Introductory mathematical statistics for master's students.

Statistics 310 Introduction to Probability and Mathematical Statistics II, Spring 2015. Mathematical statistics for undergraduate Statistics majors.

Statistics 312 Introduction to Mathematical Statistics II, Instructor, Fall 2014. Mathematical statistics course aimed at non-statistics majors.

### *University of California, Berkeley.*

Stat 154 Modern Statistical Prediction and Machine Learning (Upper Division), Graduate Student Instructor, Spring 2014. For Nouredine El Karoui.

Stat 151A Linear Modeling: Theory and Applications (Upper Division), Graduate Student Instructor, Fall 2013. For Adityanand Guntuboyina.

Stat 134 Concepts of Probability (Upper Division Probability), Graduate Student Instructor, Summer 2013. For Mike Leong.

Stat 151A, Graduate Student Instructor, Fall 2011. For David Brillinger.

Stat 135 Concepts of Statistics (Upper Division Mathematical Statistics), Graduate Student Instructor, Fall 2010. For Ching-Shui Cheng.

Stat W21 Introductory Probability and Statistics for Business, Fall 2010. For Phillip Stark.

Stat 135, Graduate Student Instructor, Fall 2009. For Ani Adhikari.

Stat 134, Graduate Student Instructor, Fall 2008. For Ani Adhikari and Nayantara Bhatnagar.

Explorations in Statistics Research, Columbia University, Summer 2011. This is a week-long Summer program for undergraduates emphasizing modern statistical techniques, computing and working with real data. I assisted students in writing R code to implement methods and create data visualizations. Orga-

nized by Professors Mark Hansen (UCLA), David Madigan (Columbia), Deborah Nolan (UC Berkeley) and Duncan Temple Lang (UC Davis).

## Academic Administration

### *University of Wisconsin, Madison*

Associate Director of Instruction, Fall 2017-present. Supervises staff in tasks related to curriculum, course scheduling and administration, and instruction.

TA and Instruction Committee member, Fall 2017-present. Supervises staff in tasks related to Teaching Assistant assignment and training and assists instructional staff in carrying out their duties.

Admissions Committee member, Fall 2015–present. Evaluate and make admissions recommendations for domestic applicants to the Statistics graduate programs.

Qualifying Exam Committee member, Spring 2016–present. Contributes questions to the Ph.D. qualifying exam and helps proctor it.

Undergraduate Committee member, Fall 2016–present (active non-member, Fall 2015–Spring 2016). Curriculum modernization, course proposals. Contributed to the Statistics Self-study in Fall 2016.

Curriculum Committee, Fall 2016–present. Assists in implementing proposals and executing various tasks under the committee’s purview: faculty overseer of Statistics assessment plan, course development and curriculum modernization, Ph.D. minor advisor. Non-voting role Fall 2016–Spring 2018. Member from Fall 2018.

Gateway Committee, Fall 2016–present. Non-voting role. Assists in development of the content of the Statistics Department’s “gateway” courses: Stat 301, 324, 371.

Assessment Committee member, Fall 2015–Spring 2016. Ad hoc committee charged with developing an assessment plan for all degree programs in Statistics.

## Industry Experience

Bytesumo. Data Scientist, July 2014 to present.

Inventory ranking based on search engine queries. Design of experiments.

## Significant Course Work

### *Ph. D. Level*

Mathematical Statistics (1 year), Applied Statistics (1 year), Measure-Theoretic Probability (1 year), Graphical Models, Statistical Learning Theory, Convex Optimization, High-Dimensional Statistics, Semiparametric Models.

### *Programming Experience*

R, some Matlab and C.

## Employment

### *University of Wisconsin-Madison*

Faculty Associate. June 2017-present.

Visiting Assistant Professor. Fall 2014 to May 2017.

*Bytesumo*

Data Scientist. July 2014 to present.

*University of California, Berkeley*

Graduate Student Instructor. Fall 2008 to Spring 2014.

Graduate Student Researcher. Fall 2007 to Spring 2012.

*University of Maine*

Research Assistant for Sundar Subramanian. Fall 2005 to Spring 2007.

Grader for the Department of Mathematics and Statistics. Graded homeworks and kept grades. Courses:

Mat 258 Introduction to Differential Equations with Linear Algebra, Spring 2007. For Sergey Lvin.

Mat 434 Introduction to Statistics, Fall 2006. For Sundar Subramanian.

Mat 258 Introduction to Differential Equations with Linear Algebra, Spring 2006. for Sergey Lvin.

Mat 232 Principles of Statistical Inference, Fall 2005.

Tutor for University of Maine's The Tutor Program. Semester-long tutoring of students in calculus. Fall 2004 to Spring 2005.

## Honors, Awards, & Fellowships

National Science Foundation VIGRE Fellowship, 2007 to 2011.

Phi Beta Kappa, 2006.

University of Maine Dept. of Mathematics and Statistics George & Hellen Weston Scholarship, 2006. \$4000.

First prize, University of Maine Dept. of Mathematics and Statistics' Third Annual Math Contest, 2006.

Golden Key International Honour Society, 2005.

University of Maine Dept. of Mathematics and Statistics George & Hellen Weston Scholarship, 2005. \$1000.