RICHARD D. De VEAUX

Department of Mathematics and Statistics
Williams College
Williamstown, MA 01267
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Education

Stanford University, 1986. Ph.D. in Statistics, Stanford, California.
Stanford University, 1980. M.A. in Education, Stanford, California.
Princeton University, 1973. B.S.E. in Civil Engineering, Summa Cum Laude, Tau Beta Pi, Princeton, New Jersey.
Princeton University, 1973. A.B. in Mathematics, Cum Laude, Phi Beta Kappa, Sigma Xi, Princeton, New Jersey.

Professional Experience

C. Carlilse and Margaret Tippit Class of '42 Professor of Statistics, Department of Mathematics and Statistics, Williams College, Williamstown, Massachusetts, July 1, 2013-present.
Professor of Statistics, Department of Mathematics and Statistics, Williams College, Williamstown, Massachusetts, July 1, 2001-June 30,2013.
Visiting Research Associate, Institut National de la Recherche Agronomique (INRA), Jouy-en-Josas, France, 2009-2010.
Kenan Invited Professor of Distinguished Teaching, Princeton University, Princeton, New Jersey, 2006-2007.
Visiting Professor, MAP5, Université Réné Descartes, Paris V, Paris, France, 2005-2006.
Associate Professor, Department of Mathematics and Statistics, Williams College, Williamstown, Massachusetts, 1997-2001.
Visiting Research Associate, Institut National de la Recherce Agronomique (INRA), Montpellier, France, 1997-1998.
Assistant Professor, Department of Mathematics, Williams College, Williamstown, Massachusetts, 1994-1997.
Senior Lecturer, Department of Civil Engineering and Operations Research, and Chairman, Committee for Statistical Studies, Princeton University, Princeton, New Jersey, 1992-1994.
Assistant Professor, Department of Civil Engineering and Operations Research, Princeton University, Princeton, New Jersey, 1986-1992.
Richard Dicker Assistant Professor of Statistics, The Wharton School, University of Pennsylvania, Philadelphia, PA 1985-86.
Lecturer, Department of Statistics, The Wharton School, University of Pennsylvania, Philadelphia, Pennsylvania, 1984.
Research Associate, Analysis Center, The Wharton School, University of Pennsylvania, Philadelphia, Pennsylvania, 1980-1983.
Statistician, University of Utah Computer Center, Salt Lake City, Utah, 1979-1980.
Statistician, Center for Advanced Studies in the Behavioral Sciences, Palo Alto, California, 1977-1978.

Honors and Awards

Elected member, International Statistical Institute, 2012.

Mosteller Statistician of the Year, 2008. Boston Chapter of the American Statistical Association.

J.S. Hunter Lecturer, Environmetrics Society, 1998.

Fellow, American Statistical Association, 1998.

Shewell Award for Best Paper and Presentation, American Society of Quality Control, 1996, 2000.

Frank Wilcoxon Prize for Best Practical Application Paper, Technometrics, 1990.

Excellence in Teaching Awards, Engineering Council, Princeton University, Spring 1989, Fall 1989, Spring 1990, Fall 1990, Spring 1991, Fall 1992.

Lifetime Achievement Award for Exceptional Dedication and Excellence in Teaching, Engineering Council, Princeton University, 1991.

Elected Chairman of the Gordon Research Conference, "Statistics in Chemisty and Chemical Engineering," 1991-1992.

Grants

"Rigorous Assessment of Neural Network and Statistical Modeling Methods", First USA Bank, January 1996 – December 1998, $145,000.

"Rigorous Assessment of Neural Network and Statistical Modeling Methods", (with L.H. Ungar), ICI Limited, January 1996 – December 1998, $243,000.

"Maximum likelihood estimation of radial basis function neural networks for process control", NSF grant #DMS-9504451, July 1995 - June 1997 $50,000.

"Spatial and temporal variability of rainfall", (with J.A. Smith) NSF grant #EAR 9204965, July 1992 - June 1995 $260,000.

"A statistical analysis of Antarctic Sea Ice", NASA grant #578-32-04-01. May 1989 - July 1994,$293,000.

Professional Affiliations

Institute of Mathematics Statistics (IMS).

American Statistical Association (ASA).

The Royal Statistical Society (RSS).

Bernoulli Society.

American Society for Quality Control (ASQC).

The International Environmetrics Society (TIES).

Professional Service

Board of Directors (Elected), American Statistical Association (ASA), 2012-2016.

Chair(Elected) , Section on Statistical Learning and Data Science, ASA, 2015-2017.

Council of Sections Representative, Section on Statistical Learning and Data Mining, ASA, 2011-2014.

Treasurer and co-founder, Section on Statistical Learning and Data Mining, ASA, 2008-2010.

Chairman, Program Committee, American Statistical Association, 2000-2001.

Chairman, General Methodology, American Statistical Association, 1998-1999.

Chairman, General Methodology, American Statistical Association, 1996-1997.

Member, NSF Screening Panel, 1995.

Program Chair, Section on Statistics in the Physical and Engineering Sciences, American Statistical Association, 1994-1995.

Member, National Research Council Panel on "Statistics and Oceanography" 1992.

Vice President, Northern NJ Chapter, American Statistical Association, 1991-1992.

Associate Editor for *Technometrics*, 1992-2004.

Associate Editor for *Environmetrics*, 1997-.

Associate Editor for *Journal of Environmental Statistics*, 1992-.

Member, Committee on Symposia and Conferences, American Statistical Association Section on Statistics and the Environment, 1991-1993.

Member, Board of Directors, Conference on Quality and Productivity, 1990-1993.

Member-at-Large, Northern NJ Chapter, American Statistical Association, 1988-1989.

Chairman, General Methodology, American Statistical Association, 1987-1988.

Member, Program Committee, Northern NJ Chapter, American Statistical Association, 1987-1988.

Consulting Clients

Cardinal Health, Chicago, Illinois.
Abbott Laboratories, Chicago, Illinois.
Medtronic Corporation, Minneapolis, Minnesota.
Sanofi-Pasteur, Lyon, France.
Equinox Partners, New York.
P&G (Proctor and Gamble), Cincinnati, Ohio.
American Express, New York, New York.
Ernst and Young, New York, New York.
Freddie Mac, McLean, Virginia.
AMS Inc., Fairfax, Virginia.
Bank One, Columbus, Ohio.
Merck Laboratories, Rahway, New Jersey.
Unilever Research Laboratories, Vlaardingen, Netherlands.
First USA Bank, Wilmington, Delaware.
Pillsbury Company, Minneapolis, Minnesota.
Chemical Bank, New York, New York.
Hewlett-Packard Co., Wilmington, Delaware.
Rohm and Haas Co., Springhouse, Pennsylvania.
Rhône-Poulenc Co., Cranbury, New Jersey.
Henkel Corporation, Springhouse, Pennsylvania.
General Electric Co., Milwaukee, Wisconsin.
OSIP Pharmaceuticals, Manhasset, New York.
CDC Inc., Oxford, Connecticut.
Bell Communications Research, Piscataway, New Jersey.
Alcoa Corporation, Alcoa Center, Pennsylvania.

Personal

Residence:
28 Southworth Street
Williamstown, MA 01267
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Born December 27, 1951
Married, four children.

Publications

Books

1. *Intro Stats*, (with Paul Velleman), Pearson, Boston, 2003
   (5th edition 2018)
2. *Stats: Modeling the World*, (with David Bock and Paul Velleman), Pearson, Boston, 2003
   (4rd edition 2014)
3. *Stats: Data and Models*, (with Paul Velleman and David Bock), Pearson, Boston, 2004.
   (4th edition 2015)
4. *Business Statistics*, (with Paul Velleman and Norean Sharpe), Pearson, Boston, 2008.
   (4rd edition 2018)
5. *Business Statistics: A First Course*, (with Paul Velleman and Norean Sharpe), Pearson, Boston, 2008. (3rd edition 2016)

Articles in Refereed Journal and Conference Proceedings

1. "ACE guided transformation method for estimation of the coefficient of soil water diffusivity" (with J.M. Steele), *Technometrics* **31**: 1 (1989), 91-99.
2. "Mixtures of linear regressions." *Computational Statistics and Data Analysis* **8** (1989), 227-245.
3. "Finding transformations for linear regression using the ACE algorithm" *Sociological Methods and Research* **18**: 2 & 3 (1989), 328-359.
4. "Optimizing automatic splitless injection parameters for gas chromatographic environmental analysis" (with M. Szelewski), *Journal of Chromatographic Science* **27**: 9 (1989), 513-518.
5. "An application of factorial design to the development of fused silica capillary columns" (with K.J. Hyver), *Journal of High Resolution Chromatography* **12** (1989), 208-212.
6. "Multivariate time series modelling of strong motion accelerograms recorded in Mexico and Taiwan" (with G.W. Ellis and A.S. Cakmak), *Soil Dynamics and Earthquake Engineering* **9**: 5, (1990), 218-227.
7. "Robust estimation of a normal mixture" (with A.M. Krieger), *Statistics and Probability Letters* **10** (1990), 1-7.
8. "Non-parametric system identification: A comparison of MARS and Neural Networks" (with D.C. Psichogios and L.H. Ungar), *American Control Conference Proceedings* **TA4** (1992), 1436-1440.
9. "The temporal and spatial variability of rainfall power" (with J.A. Smith), *Environmetrics* **3**:(1) (1992), 29-53.
10. "A comparison of two nonparametric estimation schemes: MARS and Neural Networks" (with D.C. Psichogios and L.H. Ungar), *Computers in Chemical Engineering* **17**:(8) (1993), 819-837.

11. "A statistical analysis of Antarctic sea ice using multivariate adaptive regression splines" (with A. Gordon, J. Comiso and N. Bacherer), *Journal of Geophysical Research*, **98**:(C11) (1993), 20,307-20,320.

12. "Multicollinearity: A Tale of two Non-parametric Regressions ", (with L.H. Ungar). In *Selecting Models from Data: AI and Statistics IV*, (ed P.Cheeseman and R.W. Oldford), pp.293-302. Springer-Verlag, (1994).

13. Comment on "Neural Networks and Related Methods for Classification" (with C.J. Darken and L.H. Ungar), *Journal of the Royal Statistical Society, Series B*, 56 (3), 446-447, (1994).

14. "Resizing Triathlons for Fairness", (with H. Wainer), *Chance*,7 (1), 20-25,(1994).

15. "A Stochastic Model Relating Rainfall Intensity to Raindrop Processes" (with J.A. Smith), *Water Resources Research*, 30(3), 651-664, (1994).

16. "Radial Basis Function Neural Networks for Process Control" (with L.H. Ungar, and T. Johnson) *CIMPRO Proceeding*, p.357-364, (1994).

17. "Statistical Approaches to Fault Analysis in Multivariate Process Control" (with L.H. Ungar and J.M. Vinson), *American Control Conference Proceedings* (1994).

18. "Making triathlons fair: The ultimate triathlon" (with H. Wainer), *Swim Magazine*, 10(6), 18-21 (1994).

19. "A Statistical Basis for Using Radial Basis Functions for Process Control" (with L.H. Ungar), *American Control Conference Proceedings* (1995).

20. "Neural Networks in Practice", (with L.H. Ungar), Discussion of paper by H. Stern, *Technometrics*,**38**:3, 215-218 (1996).

21. Book review of *Neural Networks for Pattern Recognition* and *Pattern Recognition and Neural Networks*, *International Journal of Neural Systems*, 8,2, p.249-250 (1997).

22. "A 7-Minute Neurocognitive Screening Battery Highly Sensitive to Alzheimer Disease", with P.R. Solomon, A. Hirschoff, B. Kelley, M. Relin, M. Bruxh and W. W. Pendlebury, *Archives of Neurology*, **55**, 349-355 (1998).

23. "Prediction Intervals for Neural Networks", with L.H.Ungar, J.Schumi, J. Schweinsberg, *Technometrics*, **40**:4, 273-282, (1998).

24. "Hybrid Neural networks for environmental Process Control", with L.H. Ungar and R. Bain, *Environmetrics*,**10**3,225-236.(1999).

25. Book review of *Applied Smoothing Techniques for Data Analysis*, *Technometrics*, **41**3,263. (1999)

26. "A correlational analysis of five commonly used measures of mental status/functional abilities in patients with Alzheimer's disease", with P.R. Solomon, F.A. Adams, J. Growdon and W.W. Pendelbury, *Alzheimer Disease and Associated Disorders***13** pp.147-150. (1999)

27. "Identifying Dementia in the Primary Care Practice", with P.R. Solomon *et al*, *International Psychogeriatrics*, **12**4 pp.483-493. (2000)

28. "Comments on *Data Mining et Statistiques* by Besse, LeGall, Rimbaud et Sarpy", *Journal de la Societé Francaise de Statistique* **142**,1,(2001).

29. "Curriculum Guidelines for Bachelor of Arts Degrees in Statistical Science", with C. Acuna, T. Tharpey and G. Cobb. *Journal of Statistical Education*, **10**,2, (2002)

30. "Ginkgo for Memory Enhancement A Randomized Controlled Trial" with Paul R. Solomon, Felicity Adams, Amanda Silver, and Jill Zimmer. *Journal of the American Medical Assocation* **288** pp.835-840 (2002)

31. "Data Mining: A View from Down in the Pit" **Stats**, **34** (2002).

32. "Bagging and Boosting", entry in *Encyclopedia of Biostatistics, Second edition*, Wiley, New York, (2004).

33. "Resizing triathlons for fairness." with H. Wainer. Reprinting in Anthology of Statistics in Sports. J. H. Albert, J. Bennett, & J. J. Cochran (Eds.) Philadelphia, PA: Society for Industrial and Applied Mathematics. (2005).

34. "How to Lie with Bad Data", with David J. Hand, *Statistical Science* 3 pp. 231-238, (2005).

35. "Reducing Junk Mail using Data Mining Techniques" , with Herb Edelstein, in *Statistics, a Guide to the Unknown*, edited by R. Peck *et al*, Thomson, Brooks/Cole, U.S., pp.307-322 (2005).

36. "Comparison of Tree Based Methods on Mammography Data", with Thu Hoang. In *Advances in Knowledge Discovery and Data Mining* Tu Boa Ho, David Cheung and Huan Liu, (Eds.), Springer, Germany, pp. 186-191. (2005).

37. "Math is Music; Statistics is Literature or Why are there no Six Year old Novelists?" with Paul Velleman, *Amstat News*, September 2008, p 54-58 (2008).

38. "Multivariate Additive Partial Least-Squares Splines" with R. Lombardo R. and J.F. Durand *Journal of Chemometrics* 23, 12, p.605-617 (2009).

39. "A Robust Boosting Algorithm for Analysis of Agro-Chemical Data" with Ville Satopää, *Current Analytical Chemistry*, **8,2** p254-265. (2012).

40. "Follow the Fundamentals: Four Data Analysis Basics Will Help You Do Big Data Projects the Right Way" , with Ron Snee and R. W. Hoerl, *Quality Progress*, January 2014, pp 24-28 (2014).

41. "Applying statistical thinking to Big Data problems", with Roger W. Hoerl, and Ron D. Snee, RD *Computational Statistics* **6,4** pp. 222-232 (2014)

42. "Teaching Statistics Algorithmically or Stochastically Misses the Point: Why not Teach Holistically?" (with Paul F. Velleman, in response to George Cobb's "Mere Renovation is Too Little Too Late: We Need to Rethink our Undergraduate Curriculum from the Ground Up"). *American Statistician*, **69,4** pp. 262-282. (2015)

43. "Big Data and the Missing Links", with Roger W. Hoerl and Ron Snee, *Statistical Analysis and Data Mining*, **9,6** pp. 411-416 (2016).

44. "Curriculum Guidelines for Undergraduate Programs in Data Science", with M. Agrawal ,Maia Averett,Benjamin S. Baumer,Andrew Bray,Thomas C. Bressoud, Lance Bryant,Lei Z. Cheng, Amanda Francis, Robert Gould, Albert Y. Kim, Matt Kretchmar, Qin Lu, Ann Moskol, Deborah Nolan, Roberto Pelayo, Sean Raleigh, Ricky J. Sethi, Mutiara Sondjaja, Neelesh Tiruviluamala, Paul X. Uhlig, Talitha M. Washington, Curtis L. Wesley, David White, and Ping Ye. *Annual Review of Statistics and its Application* **4** pp.15-30 (2017).

45. "Review of *Algorithms for Data Science* by Steele, Chandler and Reddy", with Nicholas R. De Veaux. *Bulletin of the American Mathematical Society*, **54,5** to appear (2018).

Unrefereed Technical Reports and Conference Proceedings

1. "Tight upper and lower bounds for correlation of bivariate distributions arising in air pollution modeling." Technical Report #5, Department of Statistics, Stanford University (1976).

2. "Evaluation of the potential for a disequilibrium model of the motor-gasoline market." Technical Report, Analysis Center, The Wharton School, University of Pennsylvania (1981).

3. "Motor gasoline demand: market characteristics and forecasting techniques" (with D.C. Murphy, L.P. Zimmerman, M.J. Bollinger, and R.A. Stine), Technical Report, Analysis Center, The Wharton School, University of Pennsylvania (1981).

4. "Energy assessment procedures: issues in analysis and design." (with L.S. Mayer and S.I. Rood-Ojalvo), Technical Report, Analysis Center, The Wharton School, University of Pennsylvania (1981).

5. "On designing a national petroleum information system: a review of the American Petroleum Institute proposal" (with L.S. Mayer, R. Sickles, and R.D. Small), Technical Report, Analysis Center, The Wharton School, University of Pennsylvania (1982).

6. "Parameter estimation for a mixture of linear regressions." Ph.D. Dissertation and Technical Report #247, Department of Statistics, Stanford University (1986).

7. "Robust estimation of a normal mixture" (with A.M. Krieger), *American Statistical Association 1987 Proceedings of the Statistical Computing Section* (1987).

8. "Data analytic tools for choosing transformations in simple linear regression" (with J.M. Steele), *American Statistical Association 1988 Proceedings of the Statistical Computing Section* (1988).

9. "An application of factorial design to the development of fused silica capillary columns" (with K.J. Hyver). *Proceedings of the Ninth International Symposium on Capillary Chromatography* (1988).

10. "Spatial Cross-Correlation of Antarctic Sea Ice and Seabed Topography", (with M.J. Phelan), Princeton University Technical Report SOR #90-05, (1990).

11. "Estimating Effect of Advertising on Market Share from Scanner Data", (with A.M Krieger, L.M. Lodish and B. Harlam), Princeton University Technical Report SOR #91-02, (1990).

12. "On choosing α and k in the Box-Meyer analysis of unreplicated factorial experiments", Princeton University Technical Report SOR #91-17, (1991).

13. "The temporal and spatial variability of rainfall power" (with J.A. Smith), Princeton University Technical Report SOR #91-28, (1991).

14. "A comparison of two nonparametric estimation schemes: MARS and Neural Networks" (with D.C. Psichogios and L.H. Ungar), Princeton University Technical Report SOR #92-01, (1992).

15. "A Guided Tour of Modern Regression Methods" *Proceedings of the Section on Statistics in the Physical and Engineering Sciences, American Statistical Assocation* (1995).

Chapters in Books

1. "Finding Transformations for Linear Regression Using the ACE Algorithm". *Modern Methods of Data Analysis* edited by J. Fox and J.S. Long. Newbury Park, CA: SAGE Publications Inc, (1990) pp.177-208.

U.S. Patents

1. "Method and apparatus for determining the distribution of constituent subpopulations within a population of particles having overlapping sub-populations" (with E.L. Carver and D.C. DeCava), U.S. patent #5,187,673 issued 2/16/1993.

2. "Method for determining the distribution of constituent subpopulations within a population of particles having overlapping subpopulations" (with E.L. Carver and D.C. DeCava), U.S. patent #5,349,538 issued 9/20/1994.