

DAREN B. H. CLINE
Professor of Statistics, Texas A&M University

CORRESPONDENCE:

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RESEARCH INTERESTS:

Stochastic networks, nonlinear time series, ergodicity, Markov chains, distribution tails, regular variation.

EDUCATION:

- 1983 Ph.D., Statistics, Colorado State University.
Thesis: Estimation and Prediction for Regression, Autoregression and ARMA with Infinite Variance Data.
Advisors: Peter J. Brockwell and Sidney I. Resnick.
- 1980 M.S., Statistics, Colorado State University.
Original work: Limit Theorems for the Shifting Level Process.
Advisor: Duane C. Boes.
- 1978 B.S., Mathematics, Harvey Mudd College, Claremont, California.

EXPERIENCE:

- 2002– Professor, Department of Statistics, Texas A&M University.
- 1990–2002 Associate Professor, Department of Statistics, Texas A&M University.
- 1990, Spring Visiting Scientist, Mathematical Sciences Institute, Cornell University.
- 1984–1990 Assistant Professor, Department of Statistics, Texas A&M University.
- 1986, Fall Visiting Research Assistant Professor, Center for Stochastic Processes, University of North Carolina.
- 1983–1984 Visiting Assistant Professor, Department of Statistics, University of British Columbia.
- 1978–1983 Research and Teaching Assistant, Department of Statistics, Colorado State University.

AWARDS AND HONORS:

- 1980 James L. Madison Award, Statistics, Colorado State University.
- 2006 The Association of Former Students Distinguished Teaching Award, College of Science, Texas A&M University.

PROFESSIONAL AFFILIATION:

American Statistical Association.
Bernoulli Society of the International Statistical Institute.
Institute of Mathematical Statistics.
INFORMS Applied Probability Society.

REFEREED PUBLICATIONS:

1. 1983 D.B.H. Cline, Limit theorems for the shifting level process, *J. Appl. Prob.* 20, 322–337.
2. 1985 D.B.H. Cline and P.J. Brockwell, Linear prediction of ARMA processes with infinite variance, *Stoch. Proc. Appl.* 19, 281–296.
3. 1986 D.B.H. Cline, Convolution tails, product tails and domains of attraction, *Prob. Theor. Rel. Fields* 72, 525–557.
4. 1986 R.R. Fay, R.R. Bidigare, D.B.H. Cline and M. Schnitzer, Observations on the utility of phytoplankton parameters in ocean disposal assessments, *Monitoring Strategies Symposium, Vol. 3, Proceedings of the Ocean '86 Conference*, Washington D.C.
5. 1987 D.B.H. Cline, Convolutions of distributions with exponential and subexponential tails, *J. Austral. Math. Soc. (Ser. A)* 43, 345–367. (Corrigendum: vol. 48, 152–153.)
6. 1988 R.J. Carroll and D.B.H. Cline, An asymptotic theory for weighted least squares with weights estimated by replication, *Biometrika* 75, 35–43.
7. 1988 D.B.H. Cline, Joint stable attraction of two sums of products, *J. Mult. Anal.* 25, 272–285.
8. 1988 D.B.H. Cline, Admissible kernel estimators of a multivariate density, *Ann. Statist.* 16, 1421–1427.
9. 1989 D.B.H. Cline, Consistency for least squares regression estimators with infinite variance data, *J. Statist. Plan. Infer.* 23, 163–179.
10. 1990 D.B.H. Cline, Optimal kernel estimation of densities, *Ann. Inst. Statist. Math.* 42, 287–303.
11. 1991 D.B.H. Cline, Abelian and Tauberian theorems relating the smoothness of an integrable function to the tail behavior of its Fourier transform, *J. Math. Anal. Appl.* 154, 55–76.
12. 1991 D.B.H. Cline and J.D. Hart, Kernel estimation of densities with discontinuities or discontinuous derivatives, *Statistics* 22, 69–84.
13. 1991 D.B.H. Cline, Regularly varying rates of decrease for moduli of continuity and Fourier transforms of functions on \mathbf{R}^d , *J. Math. Anal. Appl.* 159, 507–519.
14. 1991 D.B.H. Cline and C.H. Spiegelman, Bias correcting confidence intervals for a nearly common property, *Chemometrics and Intell. Lab. Systems* 11, 121–130.
15. 1992 D.B.H. Cline and S.I. Resnick, Multivariate subexponential distributions, *Stoch. Proc. Appl.* 42, 49–72.
16. 1994 D.B.H. Cline and G. Samorodnitsky, Subexponentiality of the product of independent random variables, *Stoch. Proc. Appl.* 49, 75–98.
17. 1994 D. Ruppert and D.B.H. Cline, Bias reduction in kernel density estimation by smoothed empirical transformations, with, *Ann. Statist.* 22, 185–210.
18. 1994 D.B.H. Cline, Intermediate regular and Π -variation, *Proc. London Math. Soc.* 68, 594–616.
19. 1995 D.B.H. Cline, R. L. Eubank and P. L. Speckman, Nonparametric estimation of regression curves with discontinuous derivatives, *J. Stat. Research* 29, 17–30.
20. 1998 D.B.H. Cline and H.H. Pu, Verifying irreducibility and continuity of a nonlinear time series, *Stat. and Prob. Letters* 40, 139–148.
21. 1999 D.B.H. Cline and H.H. Pu, Geometric ergodicity of nonlinear time series, *Statistica Sinica* 9, 1103–1118.
22. 1999 D.B.H. Cline and H.H. Pu, Stability of nonlinear AR(1) time series with delay, *Stoch. Proc. Appl.* 82, 307–333.
23. 2001 D.B.H. Cline and H.H. Pu, Geometric transience of nonlinear time series, *Statistica Sinica* 11, 273–287.

24. 2001 D.B.H. Cline and H.H. Pu, Stability of nonlinear time series: What does noise have to do with it?, *Selected Proceedings of the Symposium on Inference for Stochastic Processes* (IMS Lecture Notes – Monograph Series, Volume 37), I. V. Basawa, C. C. Heyde and R. L. Taylor, ed., 151–170.
25. 2002 D.B.H. Cline and H.H. Pu, A note on a simple Markov bilinear stochastic process, *Stat. Probab. Letters* 56, 283–288.
26. 2004 G. Yang, D.B.H. Cline, R.L. Lytton and D.N. Little, Ternary and multivariate quality control charts of aggregate gradation for hot mix asphalt, *Journal of Materials in Civil Engineering* 16, 28–34.
27. 2004 M.D. Hueste, P. Chompreda, D. Trejo, D.B.H. Cline and P.B. Keating, Mechanical properties of high strength concrete for prestressed members, *ACI Structural Journal* 101, 457–465.
28. 2004 D.B.H. Cline and H.H. Pu, Stability and the Lyapounov exponent of threshold AR-ARCH models, *Ann. Appl. Probab.* 14, 1920–1949.
29. 2007 D.B.H. Cline, Evaluating the Lyapounov exponent and existence of moments for threshold AR-ARCH models, *J. Time Series Analysis* 28, 241–260.
30. 2007 T.R. Boucher and D.B.H. Cline, Stability of cyclic threshold and threshold-like autoregressive time series models, *Statistica Sinica* 17, 43–62.
31. 2007 D.B.H. Cline, Regular variation of order 1 nonlinear AR-ARCH models, *Stoch. Proc. Appl.* 117, 840–861.
32. 2007 D.B.H. Cline, Stability of nonlinear stochastic recursions with application to nonlinear AR-GARCH models, *Adv. Appl. Probab.* 39, 462–491. (Correction: vol 39, 115–116.)
33. 2007 D. Trejo, F. Moutassem, M.B.D. Hueste, C. Halmen and D.B.H. Cline, Influence of environmental exposure conditions on mechanical properties of high strength concrete, *ACI Materials Journal* 104, 653–661.
34. 2009 D.B.H. Cline, Thoughts on the connections between threshold time series models and dynamical systems. *Exploration of a Nonlinear World: An Appreciation of Howell Tong's Contributions to Statistics*, K.-S. Chan, ed., World Scientific, 165–181.
35. 2009 T.R. Boucher and D.B.H. Cline, Piggybacking threshold processes with a finite state Markov chain, *Stochastics & Dynamics* 9, 187–204.
36. 2010 Y.H. Kim, M.B.D. Hueste, D. Trejo, and D.B.H. Cline, Shear characteristics and design for high-strength self-consolidating concrete, *ASCE Structural Journal* 136, 989–1000.
37. 2010 Z. Yao, D.B.H. Cline, and D. Loguinov, In-Degree Dynamics of Large-Scale P2P Systems, *ACM HotMetrics 2010*.
38. 2011 D.B.H. Cline, Irreducibility and continuity assumptions for positive operators with application to threshold GARCH models, *Adv. Appl. Probab.* 43, 49–76.
39. 2011 V. Bisadi, M. Head and D.B.H. Cline, Seismic effects of elevating bridges with steel pedestals in the southeastern United States, to appear in *Engineering Structures*.

OTHER PUBLICATIONS:

1. 1999 G. Yang, D.B.H. Cline, R.L. Lytton, D.N. Little and C.K. Estakhri, Hypothesis test in gradation comparison, *Proceedings of the Texas Section, American Society of Civil Engineers*, April 1999, 113–122.
2. 1999 G. Yang, D.B.H. Cline, R.L. Lytton, D.N. Little and C.K. Estakhri, Variability of hot mix asphalt produced with reclaimed asphalt pavement, *Proceedings of the Texas Section, American Society of Civil Engineers*, April 1999, 143–152.
3. 2003 M.D. Hueste, D. Trejo, D.B.H. Cline and P.B. Keating, Investigation of Flexural Design Parameters for High Strength Concrete Prestressed Bridge Girders - Project Overview, Rpt. 2104-1, Texas Transportation Institute and Texas Department of Transportation.

4. 2003 M.D. Hueste, P.Chomprea, D.Trejo, D.B.H. Cline and P.B. Keating, Mechanical Properties of High Strength Concrete Produced for Prestressed Bridge Girders." Rpt. 2104-2, Texas Transportation Institute and Texas Department of Transportation.
5. 2003 M.B.D. Hueste, F. Moutassem, D.Trejo and D.B.H. Cline, Impact of field exposure conditions on high strength concrete produce for prestressed bridge girders, Rpt. 2104-4, Texas Transportation Institute and Texas Department of Transportation.
6. 2007 D.B.H. Cline, Review of "Stochastic Processes in Science, Engineering and Finance" by F. Beichelt, *J. Amer. Stat. Assoc.* (book reviews), 1476–1477.

RECENT TECHNICAL REPORTS:

- 2011 A. Banaei, D.B.H. Cline, C. Geoghiades and S. Cai, On the random $\frac{1}{2}$ -disk routing scheme in wireless ad hoc networks, submitted to *IEEE/ACM Transactions on Networking*.
- 2011 Z. Yao, D.B.H. Cline and D. Loguinov, On superposition of heterogeneous edge processes in dynamic random graphs, submitted to *IEEE Infocom 2012*.
- 2011 Z. Yao, D.B.H. Cline and D. Loguinov, Node connectivity in churn-driven networks under uniform neighbor selection, submitted to *IEEE Infocom 2012*.

RESEARCH GRANTS:

- 1987–1989 Multivariable regular and exponential variation with application to multiple regression and to convolutions of multivariate distributions, National Science Foundation Grant DMS-8711924 (principal investigator).
- 1990 Applications of asymptotic structures for dependence, distribution tails and characteristic functions, National Science Foundation Grant DMS-9001011 (co-principal investigator with T. Hsing).
- 1991–1993 Regular variation: analytic approaches to probability and statistics, National Science Foundation Grant DMS-9101083 (principal investigator).
- 1996 Stability of nonparametric nonlinear time series, College of Science Research Enhancement Grant (principal investigator).
- 2000–2002 Allowable stresses and resistance factors for high strength concrete, Texas Department of Transportation 0-2101 (co-investigator).
- 2000–2002 Controlled low-strength material for backfill, utility bedding, void fill and bridge approaches, National Cooperative Highway Research Program 24-12(1) (co-investigator).
- 2003–2004 Warranty based specifications for construction, Texas Department of Transportation 0-4498 (faculty associate).

INVITED PRESENTATIONS:

- 1983 Department of Statistics, Texas A&M University.
- 1983 Department of Mathematics, University of Massachusetts.
- 1983 Department of Mathematics, Tufts University.
- 1983 Department of Statistics, University of British Columbia.
- 1985 Institute of Mathematical Statistics, Annual Meeting, Las Vegas, Nevada.
- 1986 Center for Stochastic Processes, University of North Carolina.
- 1986 Department of Statistics, University of North Carolina.
- 1986 Department of Statistics, North Carolina State University.
- 1987 Seminar on Time Series Analysis, Texas A&M University.
- 1988 Miniconference on Independent Random Variables: Their Sums and Extremes, Boston, Massachusetts.
- 1988 Department of Statistics, Pennsylvania State University.

- 1988 Field of Statistics, Cornell University.
- 1990 Department of Mathematics, University of Massachusetts.
- 1990 School of Operations Research and Industrial Engineering, Cornell University.
- 1990 Department of Mathematics, Boston University.
- 1990 Department of Statistics, Colorado State University.
- 1990 Workshop on Function Estimation and Statistical Applications, Mathematical Sciences Institute, Cornell University.
- 1991 Department of Statistics, University of British Columbia.
- 1991 Field of Statistics, Cornell University.
- 1995 INFORMS Applied Probability Conference, Georgia Tech.
- 1997 Brown Bag Seminar, Department of Statistics, Texas A&M University.
- 1997 Department of Statistics, Colorado State University.
- 1998 Department of Statistics, Rice University.
- 2000 Symposium on Inference for Stochastic Processes, University of Georgia.
- 2000 Department of Statistics and Actuarial Science, University of Iowa.
- 2001 Institute of Mathematical Statistics, Joint Statistical Meetings, Atlanta, Georgia.
- 2004 International Conference on Threshold Models and New Developments in Time Series, Hong Kong.
- 2006 Department of Statistics, Rice University.
- 2007 Graybill VI Conference, Colorado State University.
- 2007 Econometrics Workshop, Department of Economics, Texas A&M University
- 2008 Brown Bag Seminar, Department of Statistics, Texas A&M University.

OTHER PRESENTATIONS:

- 1984 Department of Statistics, Texas A&M University.
- 1985 Institute of Mathematical Statistics, Central Meeting, Austin, Texas.
- 1986 Institute of Mathematical Statistics, Western Meeting, Seattle, Washington.
- 1987 Institute of Mathematical Statistics, Western Meeting, Honolulu, Hawaii.
- 1988 Institute of Mathematical Statistics, Western Meeting, Davis, California.
- 1989 Applied Probability Seminar, Texas A&M University.
- 1997 Institute of Mathematical Statistics, Joint Statistical Meetings, Anaheim, California.
- 2004 The Second Erich L. Lehmann Symposium, Houston, Texas
- 2006 Institute of Mathematical Statistics, Joint Statistical Meetings, Seattle, Washington.

CONSULTING:

- 1985 Offshore oceanographic and environmental monitoring services for the strategic petroleum reserve, vol. 6, for R. Fay, Department of Oceanography, Texas A&M University.
- 1991 Comparison of nematode control agents in banana harvests, for Appropriate Technology, Ltd.
- 1997 Heavy truck rear vision systems, for J. Chard and J. Congleton, Ergonomics Center, Texas A&M University.
- 1998–1999 Variability of hot mix asphalt, for G. Yang and D. Little, Texas Transportation Institute.
- 2000–2001 TEM analysis and corrosion testing of a steel, for MMFX Corp.

GRADUATE STUDENTS DIRECTED:

- 1990 R. Baradwaj (M.S.).
- 1995 Huay-min H. Pu (Ph.D.).
- 2002 R. Jason Reed (M.S.)

2002	Alan Bogossian (M.S.)
2002	Youyoung Won (M.S.)
2002	Xue Bai (M.S.)
2003	Yuqun Ou (M.S.)
2003	Thomas R. Boucher (Ph.D.)
2004	Bo Li (M.S.)
2004	Lian Liu (M.S.)
2006	Jessica Wickersham (M.S.)
2008	Jie Li (M.S.)

In addition, I have served on the committees for numerous graduate students, including students from industrial engineering, civil engineering, petroleum engineering, electrical engineering, oceanography, meteorology, computer science and mathematics.

COURSES TAUGHT:

Introductory Statistical Methods, Regression, Experimental Design.
 Probability and Stochastic Processes.
 Mathematical Statistics.
 Time Series Analysis.

UNIVERSITY and DEPARTMENT SERVICE:

1990–1993	Department Liaison to the Texas A&M University Sterling Evans Library.
1992–1993	Chair, Revision of the Statistics Option for the Applied Mathematics Degree.
1992–1994	Texas A&M University Faculty Senator.
1992–1994	Texas A&M University Faculty Senate Academic Affairs Committee.
1993–2000	College of Science Undergraduate Curriculum Committee.
1993–2000	Undergraduate Advisor for Applied Math majors.
1995–1996	College of Science Classroom Equipment Committee.
1995–1996	Department of Statistics Promotion and Tenure Committee.
1995–1999	Department of Statistics Graduate Curriculum Committee.
1998	Department of Statistics Promotion and Tenure Committee.
1999	Department of Statistics Self-Study, Curriculum Subcommittee.
1999	Department of Statistics Committee on Rewarding Teaching.
1999–2001	Department of Statistics Graduate Service Curriculum Committee.
1999–2010	Department of Statistics Theory Qualifying Exam Committee
2000–2008	Undergraduate Minors Committee.
2001–2002	College of Science Committee on Technology Mediated Instruction.
2001–2002	Statistics Department Head Evaluation Committee.
2001–2004	College of Science Grievance Committee.
2002–2007	Department of Statistics Colloquium Chair.
2002–2008	College of Science Faculty Advisory Council.
2002–2003	Department of Statistics Faculty Recruiting Committee.
2005–2006	Department of Statistics Graduate Program Committee
2005–2007	Department of Statistics Promotion and Tenure Committee.
2006–2007	Department of Statistics Graduate Service Committee
2007–2008	Department of Statistics Ad hoc Committee for Graduate Program Revision

NATIONAL SERVICE:

2007	National Science Foundation Workshop on Predictive Modeling, participant.
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