Robert A. Stine

CURRENT POSITION

Professor
Department of Statistics, The Wharton School
University of Pennsylvania
444 Huntsman Hall
Philadelphia, PA 19104-6340

EDUCATION

Ph. D. Statistics, 1982, Princeton University, Princeton, NJ

B. S. (summa cum laude) Mathematics, 1977, University of South Carolina, Columbia, SC

EMPLOYMENT

Associate Professor, Department of Statistics, University of Pennsylvania (1989-2003).

Visiting Faculty, Inter-University Consortium for Political and Social Research, Institute for Social Research, University of Michigan, Ann Arbor, MI; 1979-2002.

Assistant Professor, Department of Statistics, University of Pennsylvania (1983-1989).

Lecturer, Department of Statistics, University of Pennsylvania, Philadelphia, PA; 1983.

Research Associate and Director of Computing, Analysis Center, The Wharton School, University of Pennsylvania (1979-1983). Research in support of federal litigation and the analysis of energy demand models.

Research Assistant, Princeton Resource Estimation Project, Department of Statistics, Princeton University, Princeton, NJ (1979). Modeling petroleum production patterns.

Intern, Office of Energy Data, Energy Information Administration, Department of Energy, Washington, DC (1978). Demand models, weather patterns, and software.

Research Assistant, Center for Environmental Studies, Princeton University, Princeton, NJ (1977-1978). Twin Rivers energy conservation and consumption project.

Statistical Consultant, Social and Behavioral Sciences Laboratory, University of South Carolina, Columbia, SC (1974-1977). Statistical computing consultant.

PROFESSIONAL SOCIETIES AND ACTIVITIES

American Statistical Association
- Committee on Energy Statistics (1984-1990)
- Chair, Section on Risk Analysis (2007)

Institute of Mathematical Statistics
- Committee to Select Editors (1999-2001)

Guest Editor, *Sociological Methods & Research*

Associate Editor, *Structural Equation Modeling* (1992-1996)

TEACHING AWARDS AND RESEARCH RECOGNITION

David W. Hauck Award for Outstanding Teaching, Wharton Undergraduate Program, 2001.

Wharton Undergraduate Excellence in Teaching Award, 1995, 2001, 2004.

Miller-Sherrerd Wharton MBA Core Teaching Award
1994, 1995, 1999, 2003, 2006, 2007

MBA Core Curriculum Cluster Award, 1996, 1999.

NSF Research Grant (with D. P. Foster), 1998-1999.

Stanley S. Schor Visiting Scholar, Merck Inc, West Point PA; 1997-1998.

DOCTORAL STUDENTS

[redacted] 1995.

[redacted] " 1998.

REFEREED PUBLICATIONS

R. A. Stine (1980). An exploratory data analysis package. *The American Statistician*, 34, 187-188.

R. A. Stine (1985). Bootstrap prediction intervals for regression. *Journal of the American Statistical Association*, 80, 1026-1031.

J. deCani and R. A. Stine (1986). A note on deriving the information matrix for the logistic distribution. *The American Statistician*, 40, 220-222.

M. Hediger and R. A. Stine (1987). Age at menarche based on recall information. *Annals of Human Biology*, 14, 133-142.

W. B. Cutler, W. M. Schleidt, E. Friedman, R. A. Stine and G. Preti. (1987). Lunar influences on the reproductive cycle in women. *Human Biology*, 59, 959-972.

R. A. Gurtler, R. A. Stine, and J. S. Torg (1987). Lachman test evaluated: quantification of a clinical observation," with *Clinical Orthopedics and Related Research*, 216, 141-150.

R. A. Stine (1987). Estimating properties of autoregressive forecasts. *Journal of the American Statistical Association,* 82, 1072-1078.

P. Shaman and R. A. Stine (1988). The bias of autoregressive coefficient estimators. *Journal of the American Statistical Association*, 83, 842-848.

R. A. Stine (1989). An introduction to bootstrap methods. *Sociological Methods & Research*, 18, 243-291.

R. A. Stine and P. Shaman (1989). A fixed-point characterization for bias of autoregressive estimators. *Annals of Statistics*, 17, 1275-1284.

J. S. Torg, T. M. Barton, R. A. Stine and H. Pavlov (1989). Natural history of the posterior cruciate ligament-deficient knee. *Clinical Orthopedics*, 246, 208-216.

P. Shaman and R. A. Stine (1990). Bias of autoregressive spectral estimators. *Journal of the American Statistical Association*, 85, 1091-1098.

K. Bollen and R. A. Stine (1992). Bootstrapping structural equation models: goodness of fit measures. *Sociological Methods & Research,* 21, 205-229.

R. A. Stine (1995a). Graphical interpretation of variance inflation factors. *The American Statistician,* 49, 53-56.

R. A. Stine (1995b). Data analysis using *Mathematica*. *Sociological Methods & Research,* 23, 352-372.

J. Fox and R. A. Stine (1995). Editors' introduction to the special issue on computing environments. *Sociological Methods & Research,* 23, 267-281.

J. S. Torg, R. J. Naranja, H. Pavlov, B. J. Galinat, R. A. Stine and R. Warren (1996). The relationship of developmental narrowing of the cervical spinal canal to reversible and irreversible injury of the cervical spinal cord in football players. *The Journal of Bone and Joint Surgery*, 78-A, 1308-1314.

J. Pickands and R. A. Stine (1997). Estimation for an M/G/∞ queue with incomplete information. *Biometrika*, 84, 295-308.

E. Lydick, M. Melton, K. Cook, J. Turpin, M. Melton, R. A. Stine, and C. Byrnes (1998). Development and validation of a simple questionnaire to facilitate identification of women likely to have low bone density. *American Journal of Managed Care*, 4, 37-48.

D. P. Foster and R. A. Stine (1999). Local asymptotic coding. *IEEE Transactions on Information Theory*, 45, 1289-1293.

R. A. Stine and J. Heyse (2000). Nonparametric estimates of overlap. *Statistics in Medicine*, 20, 215-236.

J. Zhang and R. A. Stine (2001). Autocovariance structure of Markov regime switching models and model selection. *Journal of Time Series Analysis*, 22, 107-124.

D. P. Foster, R. A. Stine, and A. J. Wyner (2002). Universal codes for finite sequences of integers drawn from a monotone distribution. *IEEE Transactions on Information Theory*, 48, 1713-1720.

J. Fox, R. A. Stine, G. Monette, and N. Vohra (2002). Detecting clusters and nonlinearity in 3D dynamic graphs. *Journal of Computational and Graphical Statistics*, 11, 875-895.

R. A. Stine (2004). Discussion of "Least angle regression," *Annals of Statistics,* 32, 475-481.

D. P. Foster and R. A. Stine (2004). Variable selection in data mining: Building a predictive model for bankruptcy. *Journal of the American Statistical Association,* 99, 303-313.

R. A. Stine (2004). Model selection using information theory and the MDL principle. *Sociological Methods & Research,* 33, 230-260.

R. A. Stine (2006). Comment: Classifier technology and the illusion of progress. *Statistical Science*, **21**, 27–29.

D. P. Foster and R. A. Stine (2006). Honest confidence intervals for the error variance in stepwise regression. *Journal of Economic and Social Measurement*, **30**, 1–14.

J. Zhou, D. P. Foster, R Stine, and L. Ungar (2006). Streamwise feature selection. *Journal of Machine Learning Research*, **7**, 1861–1885.

C. T. Chua, D. P. Foster, K. Ramaswamy, and R. A. Stine (2006). A dynamic model for the forward curve. To appear, *Review of Financial Studies*.

BOOKS AND BOOK CHAPTERS

K. Bollen and R. A. Stine (1990). Direct and indirect effects: classical and bootstrap estimates of variability. In *Sociological Methodology, Vol. 20*, C. Clogg, Ed., 115-140. American Sociological Association, Washington, D.C.

R. A. Stine (1992). Time series models and *Mathematica*. In *Economic and Financial Modeling with Mathematica,* H. Varian, Ed., 368-406. Springer, New York.

J. M. Steele and R. A. Stine (1992). *Mathematica* and diffusions. In *Economic and Financial Modeling with Mathematica,* H. Varian, Ed., 192-213. Springer, New York.

R. A. Stine (1996a). *AXIS*: An Extensible User Interface for Statistics. In *Statistical Computing Environments for Social Research*, R. A. Stine and J. Fox, Ed., 175-192. Sage, Newbury Park.

R. A. Stine (1996b). Data analysis using *Mathematica*. In *Computational Economics and Finance,* H. Varian, Ed., 330-361. Springer, New York.

R. A. Stine and J. Fox, Eds. (1996). *Statistical Computing Environments for Social Research*. Sage, Newbury Park.

R. A. Stine (1997). Nonlinear time series. In *Encyclopedia of Statistical Sciences (Update Volume 1)*, S. Kotz, C. B. Read, and D. L. Banks, Ed., 430-437. Wiley, New York.

D. P. Foster, R. A. Stine, and R. Waterman (1998a). *Business Statistics: A Casebook*. Springer, New York.

D. P. Foster, R. A. Stine, and R. Waterman (1998b). *Business Analysis Using Regression: A Casebook*. Springer, New York.

D. P. Foster and R. A. Stine (2001). Discussion of "The practical implementation of Bayesian model selection." In *Model Selection*, P. Lahiri, Ed., 124-130. Institute of Mathematical Statistics, Hayward, CA.

D. P. Foster and R. A. Stine (2005). The contribution of parameters to stochastic complexity. In *Advances in Minimum Description Length*, P. D. Grunwald, I. J. Myung, and M. A. Pitt, Eds., 195-213.MIT Press, Cambridge, MA.

BOOK REVIEWS

Non-linear Time Series Analysis (H. Tong). *Journal of the American Statistical Association*, 87, 903; 1992.

Analysis of Observed Chaotic Data (H. Abarbanel). *Technometrics*, 39, 334-5; 1997.

Statistics with Mathematica (M. Abell, J. Braselton, and J. Rafter). *The American Statistician*, 54, 153; 2000.

Subsampling (D. Politis, J. Romano, and M. Wolfe) and *Bootstrap Methods and Their Application* (A. Davisson and D. Hinkley). *Sociological Methods & Research*, 29, 124-129; 2001.

PROCEEDINGS

R. A. Stine (1980). Assessing the quality of autoregressive forecasts. *Proceedings of the 3rd International Time Series Meeting*, O. D. Anderson and M. R. Perryman, Eds., 543-558. North-Holland, Amsterdam.

R. A. Stine and R. D. Small (1980). Some factors influencing estimators in motor gasoline demand model. *Proceedings of the 1980 DOE Statistical Symposium*, Oak Ridge National Laboratory, Oak Ridge, TN.

C. Jones and R. A. Stine (1987). Graph grammars for statistical users interfaces. *Computer Science and Statistics*, R. M. Heiberger, Ed., 163-168. American Statistical Association, Washington, D.C.

R. A. Stine and C. Jones (1987). Statistical modelling using a graph-based interface," with C. Jones. *Computer Science and Statistics*, R. M. Heiberger, Ed., 157-162. American Statistical Association, Washington, D.C.

R. A. Stine and T. Woteki (1989). A graphical programming environment for statistical simulations with parallel processing. *American Statistical Association: 1989 Proceedings of the Statistical Computing Section*. American Statistical Association, Washington, D.C.

R. A. Stine (1990). *Mathematica* in time series analysis. *American Statistical Association: 1990 Proceedings of the Statistical Computing Section*, 37-45. American Statistical Association, Washington, D.C.

J. M. Steele and R. A. Stine (1991). Applications of *Mathematica* to the stochastic calculus. *American Statistical Association: 1991 Proceedings of the Statistical Computing Section*, 11-19. American Statistical Association, Washington, D.C.

R. A. Stine (1992). Automated simulations. *American Statistical Association: 1992 Proceedings of the Statistical Computing Section*. American Statistical Association, Washington, D.C.

J. Fox and R. A. Stine (1998). A Lisp-Stat based system for experimentation in 3D statistical graphics. In *Computing Science and Statistics*, S. Weisberg, Ed., 477-481. Interface Foundation of North America, Fairfax Station, VA.

D. P. Foster and R. A. Stine (2000). The competitive complexity ratio. In *Proceedings of the 2000 Conference on Information Sciences and Systems, Volume I*, Princeton University, WP8 1-6.

J. Zhou, D. P. Foster, R. A. Stine, and L. H. Ungar (2005). Streaming feature selection using alpha-investing. In *KDD 2005,* 384–393.

SELECTED CONFERENCE PRESENTATIONS

Bootstrapping autoregressive forecasts for comparing and evaluating energy models (1980). NSF-CBUS Research Conference on Jackknife and Bootstrap Methods in Statistics, Bowling Green.

Some factors influencing estimators in motor gasoline demand models (1980). Invited presentation, Department of Energy Symposium, Berkeley.

Forecasting the consumption of motor gasoline (1981). 3rd International Conference on Energy Use Management, Berlin.

Evaluation of changes in the forecasts of a model (1983). 3rd Intl. Symposium on Forecasting, Philadelphia.

Prediction intervals for autoregressions (1983). 3rd Intl. Symposium on Forecasting, Philadelphia.

Implementing statistical software on a microcomputer (1984). SIAM/ASA Meeting on Computaional Statistics, Boston.

Comparison of time and frequency-domain resampling (1986). ASA National Meeting, Chicago.

Graph-based interfaces for statistical computing (1987). ASA National Meeting, San Francisco.

Structure of bias in autoregressions (1988). IMS Annual Meeting, Fort Collins.

Treatment effects in ambulatory blood pressure (1989). ASA National Meeting, Washington.

Using *Mathematica* in time series analysis (1990). ASA National Meeting, Anaheim.

Symbolic computing in the stochastic calculus (1991). ASA National Meeting, Atlanta.

Automated simulations (1992). ASA National Meeting, Boston.

Interactive bootstrap resampling (1992). 3rd Conference on Computing in the Social Sciences, Ann Arbor.

Stochastic modeling and symbolic computing (1993). Ecole Nationale des Pont et Chaussées, Paris.

Interactive wavelet analysis in *Lisp-Stat* (1995). ASA National Meeting, Orlando.

Local asymptotic coding (1996). Santa Cruz Meeting on Machine Learning, Santa Cruz.

Applications of model selection in credit models (1999). Invited session, ASA National Meeting, Baltimore.

Competitive ratios in information theory (2000). Conference on Information Sciences and Systems, Princeton.

Variable selection in credit models (2000). Invited session, ASA National Meeting, Indianapolis, IN.

Credit Modeling and Decisioning (2003). Organizer, Wharton Impact Conference, co-sponsored by the Wharton Financial Institutions Center and the Federal Reserve Bank of Philadelphia.

Variable selection in credit models (2004). Conference on Credit Modeling, sponsored by the Office of the Comptroller of the Currency, Washington DC.

Validating Credit Models (2005). Wharton Impact Conference, sponsored by the Wharton Financial Institutions Center and the Federal Reserve Bank of Philadelphia.

An overview of bootstrap resampling (2005). SPIDA colloquium, York University, Toronto, CA.

SERVICE TO THE UNIVERSITY

Wharton Faculty Committee on Computing/Technology (1985-89, 1996-97, 1998-99)

Wharton Faculty Committee on Graduate Admissions (1986-87)

Wharton Faculty Committee on the MBA Curriculum (1990-93, 2000-06)
Chairman 1993-94, 2000-01

Wharton Faculty Committee on the MBA Core Implementation (1993-97)

Wharton Core Faculty Advisory Committee (2002-2007)

Wharton Faculty Committee on Research Programs (1994-96)

Wharton Graduate Executive Board (1996-97)

Organizer, Wharton Credit Modeling and Decisioning Conference (May 2002)

University Committee on Student Affairs (1993-94)

Provost's Oversight Committee on Student Computing (1995-96)

Provost's Oversight Committee on Undergraduate Advising (1996-97)

Search Committee, Vice Provost for Information Systems and Computing (1996-97)

University Committee on Research Programs (2000-03), Chairman, 2002-03