

CURRICULUM VITAE

LORI A. THOMBS

Associate Professor
Department of Statistics
University of Missouri
Columbia, MO 65211-6100
Office Phone: (573) 882-3844
email: thombsl@missouri.edu

EDUCATION:

B.S. (Mathematics) Baylor University, 1981
M.S. (Statistics) Southern Methodist University, 1983
Ph.D. (Statistics) Southern Methodist University, 1985

Advisor: W. R. Schucany Dissertation Title: “*Bootstrap Prediction Intervals for Autoregression*”

ACADEMIC EXPERIENCE:

Associate Professor	2003 - present	Department of Statistics, University of Missouri
Director, Social Sciences Statistics Center		
Visiting Professor	2000-2001	Department of Statistics, Rice University
Visiting Scholar	Summer 1999	Department of Economics and Statistics, Universidad de Carlos III, Spain
Visiting Scholar	Apr-Jun 1995	Department of Statistics Australian National University
Visiting Scholar	Jan 1993-Aug 1993, Jul 1994	Department of Statistics Stanford University
Associate Professor	1991 - 2003	Department of Statistics, University of South Carolina
Assistant Professor	1985-1991	Department of Statistics University of South Carolina

AWARDS AND HONORS:

Excellence in Education Awards, MU Division of Student Affairs, 2006
USC Educational Foundation Outstanding Faculty Service Award, 1998
Mortar Board Excellence in Teaching Award, USC, 1990
USC AMOCO Teacher of the Year Award, 1989
John E. Walsh Award for Outstanding Ph.D. Student, SMU, 1985
Outstanding Mathematics Senior, Baylor University, 1981

RESEARCH INTERESTS:

Resampling methods for Correlated data, Linear and Nonlinear Time Series, Social Science Statistical Methods, Predictive modeling, Multivariate classification techniques, Statistical Education, Interdisciplinary statistics

RESEARCH PUBLICATIONS:

- Litofsky N.S., Matthews J., Wolak M.L., Shah M.M., Melamed .I, Thombs L.A. (2010). “ Optimizing referral practices for patients with non-traumatic intracerebral hemorrhage,” *Missouri Medicine*, **107 (3)** 210-216.
- Kolenikov, Stanislav, Steinley, Douglas and Thombs, Lori. (2010). *Statistics in the Social Sciences: Current Methodological Developements*, Wiley, New York.
- Atkinson, Kathryn; Fine, Deborah; Thombs, Lori; Gorelick, Jeremy; Durham, Harris. (2009). “Evaluation of Pimobendan and N-Terminal Probrain Natriuretic Peptide in the Treatment of Pulmonary Hypertension Secondary to Degenerative Mitral Valve Disease in Dogs,” *Journal of Veterinary Internal Medicine*, **23 (6)**, 1190-1196.
- Cepel, Raina, Thombs, Lori A., Neal, Steven P., Ho, Dominic. (2007). “Statistical Analysis and Computer Generation of Correlated Acoustic Noise,” *Journal of Nondestructive Evaluation*, **26 (1)** 19-32.
- Thombs, Lori A. and Sampson, Charles, (2006). “ Modeling Change in Municipal Fiscal Policy using Mayoral Expenditure Data,” *ASA Proceedings of the Social Statistics Section*.
- Sayers S.P., Guralnik J.M., Thombs L.A., Fielding R.A. (2005). “Effect of Leg Muscle Contraction Velocity on Functional Performance in Older Men and Women,” *Journal of the American Geriatrics Society*, **53 (3)** 467-471.
- Li, X.-B, Donohue, J. M, Sweigart, J. R., Thombs, L. A. (2003). “Multivariate Decision Trees using Linear Discriminants and Tabu search,” *IEEE Transactions on Systems, Man and Cybernetics, Part A*.
- Li, X. B., Donohue, J. M., Sweigart, J. R., Thombs, L.A. (2001). “A Dynamic Programming Based Pruning Method for Decision Trees,” *INFORMS Journal on Computing*, **13, (4)** 332-344.
- Thombs, Lori A. (2001). [Entry on *Standard Deviation*.] Grinstein, L. S. & Lipsey, S. J. (Eds.) *Encyclopedia of Mathematics Education*, NY: Routledge Falmer.
- Spurrier, J.D., Edwards, D.G, and Thombs, L.A. (1999). *Statistics: Learning by Doing*, Whittier Press.
- Romano, Joseph P. and Thombs, Lori A. (1996). “Inference for Autocorrelations Under Weak Assumptions,” *Journal of the American Statistical Association*, **91**, 590 - 600.
- John D. Spurrier, Don Edwards, and Lori A. Thombs, (1996). “Elementary Statistics Laboratory,” *Communications in Statistics-Theory and Methods*, **25**, 2663 - 2673.
- McClenaghan, B.A.; Williams, H.; Dickerson, J. Dowda, M.; Thombs L. A. and Eleazer, Paul (1996). “Spectral Characteristics of Aging Postural Control,” *Gait and Posture*, No. 4 (2): 112-121.

- Thombs, L. A. and Whitin, D (1995). "Use of the Spectral Signature to Discriminate Between Levels of Physical Stability," *ASA Proceedings of the Social Statistics Section*, 174–179.
- Spurrier, J.D., Edwards, D.G, and Thombs, L.A. (1995). *Elementary Statistics Laboratory Manual - Macintosh Version*, Wadsworth, Belmont, CA.
- Spurrier, J.D., Edwards, D.G, and Thombs, L.A. (1995). *Elementary Statistics Laboratory Manual - Macintosh Version*, Wadsworth, Belmont, CA.
- Spurrier, J.D., Edwards, D.G, and Thombs, L.A. (1995). *Elementary Statistics Laboratory Manual - MS-DOS Version*, Wadsworth, Belmont, CA.
- McClenaghan, B.A.; Williams, H.; Dickerson, J. and Thombs L. A. (1994). "Spectral Signature of Forces to Discriminate Perturbations in Standing Posture," *Clinical Biomechanics*, **9**, 21-27.
- Romano, J. and Thombs, L. A. (1994). "Inference for Autocorrelations by Resampling," *ASA Proceedings of the Statistical Computing Section*, 1-10.
- Spurrier, J.D.; Edwards, D.E. and Thombs, L.A. (1993). "Elementary Statistics Laboratory," *Proceedings of the American Statistical Association, Section on Statistical Education*, 23-28.
- McClenaghan, B. A., Thombs, L. A. and Milner, M. (1992). "Effects of Seat Surface Inclination of Postural Stability and Functional Use of the Upper Extremity in Children with Cerebral Palsy," *Developmental Medicine and Child Neurology*, **34**, 40-48.
- Padgett, C. S., Thombs, L. A. and Padgett, W. J. (1992). "On α -Risks for Shewhart Control Charts," *Communications in Statistics-B*, **21**,, 1125-1147.
- Thombs, L.A. and Chan, K.C. (1991). "Ridge Regression and the Bootstrap," *ASA Proceedings of the American Statistical Association, Section on Social Statistics*.
- Thombs, L.A. and Sheather, S. J. (1990). "Local Bandwidth Selection for Density Estimation," *Computing Science and Statistics: Proceedings of the Symposium on the Interface*, Springer-Verlag, 111-116.
- Thombs, L. A. and Schucany, W. R. (1990). "Bootstrap Prediction Intervals for Autoregression," *Journal of the American Statistical Association*, **85**, 486 - 492.
- Spurrier, J. D. and Thombs, L. A. (1990). "Control Charts for Detecting Cyclical Behavior," *Technometrics*, **32**, 164 - 171.
- McClenaghan, B. A., Williams, Harriet, Dickerson, John and Thombs, Lori (1990). "Use of the Spectral Signature of Postural Sway to Predict Impairments of Stability," *Proceedings of the Canadian Medical and Biological Engineering Society*, Banff, Alberta, May.
- Gardner, L. R.; Thombs, L. A.; Edwards, D. G., and Nelson, D. (1989). "Time Series Analysis of Suspended Sediment Concentration at North Inlet, S.C." *Estuaries*, **12**, (4), 211-221.
- Padgett, W. J. and Thombs, L. A. (1988). "A Smooth Nonparametric Quantile Estimator from Right Censored Data," *Statistics and Probability Letters*, **7**, 113-121.
- Thombs, L. A. (1987). "Recent Advances in Forecasting: Bootstrap Prediction Intervals for Time Series," *1987 Proceedings of the Decision Sciences Institute*, Ed. Bob Parsons and John Saber.
- Padgett, W. J. and Thombs, L. A. (1986). "Smooth Nonparametric Quantile Estimation under Censoring: Simulation and Bootstrap Methods," *Communications in Statistics - B*, **15**, 1003 -

1025.

FUNDING (PI or Co-PI):

- NSF, “*Conference on Methodological Developments of Statistics in Social Sciences,*” (2006-2007,) with Stas Kolenikov, Doug Steinley, Steve Osterlind and Nancy Flournoy.
- NSF, “*Conference in the Mathematical Sciences on New Development of Statistical Analysis in Wildlife, Fisheries, and Ecological Research,* (2004-2005,) with Chong He, Chris Wikle, Dongchu Sun and Nancy Flournoy.
- MU Alumni Association, (2004-2005). “*Predictive Modeling to Enhance the Marketing Efforts of the MUAA.*”
- South Carolina Department of Education, (1999). “*Advanced Placement Graduate Institute in Statistics,*” with Todd Ogden.
- South Carolina Department of Education, (1998). “*Advanced Placement Graduate Institute in Statistics,*” with Todd Ogden.
- National Science Foundation, (1997-1999). “*Elementary Statistics Laboratory Workshop,*” with John D. Spurrier (PI).
- USC Research and Productive Scholarship, (1993). “*Analysis of Postural Sway Patterns Using Nonlinear Models.*”
- Center for Disease Control, (1992-1995). “*Spectral Signature as a Predictor of Falls in the Elderly,*” with Bruce McClenaghan (PI).
- National Science Foundation, (1992-1995). “*Undergraduate Course Development in Statistics,*” with John D. Spurrier and Don Edwards.
- National Science Foundation, (1990-1991). “*Time Series Modeling and the Bootstrap,*”
- USC Provost’s Instructional Innovation Grant, (1991-1992). “*Elementary Statistics Laboratory,*” with John D. Spurrier and Don Edwards.
- National Science Foundation, (1990). Funded participant in IMA Summer Program, Minneapolis, MN.
- Association for Women in Mathematics, (1990). Travel grant to attend IMS Eastern Regional Conference, Baltimore, MD.
- National Science Foundation, (1988). Funded participant in workshop *Pathways to the Future,* Ft. Collins, CO.
- USC Research and Productive Scholarship, (1986). “*Bootstrap Prediction Intervals for Autoregression.*”
- Travel Support, May 21 - June 3, 1986 (ONR and National Academy of Sciences,) “Cutting Edge Workshop on Time Series Analysis and Signal Processing,” Texas A& M, College Station, TX.

GRANT FUNDING AS STATISTICAL EXPERT/CONSULTANT:

- Quality Improvement Center for Child Protection at the University of Kentucky, “*Child Welfare Services Supervisory Training,*” (2005-2006). PIs: Mike Kelly and Paul Sundet, MU School of Social Work.

Department of Health and Human Services, (2005-2006). *“The Impact of Cash Incentives on Early Childhood Development,* PI: Sara Gable, MU Department of Human Development and Family Studies.

NIDRR/US Department of Education, (2003-2008). *“Missouri Arthritis Rehabilitation Research and Training Center,”* PI: Jerry Parker, MU Department of Physical Medicine and Rehabilitation.

Department of Health and Human Services, (2005-2006) *“Child Welfare Services Supervisory Training, Quality Improvement Center for Child Protection at the University of Kentucky,”* PIs: Mike Kelly and Paul Sundet, MU School of Social Work

OTHER FUNDING :

MU Global Scholar, *Mongolia: Empire and Democracy,* Ulaanbaatar, Mongolia, June 2008.

Funded Participant, President’s Academic Leadership Institute (PALI), Columbia, MO, 2004-2005.

Funded Participant, NSF ADVANCE Women’s Leadership Institute, Univ. of Missouri/Kansas City, 2004.

STUDENT SUPERVISION:

University of Missouri M.A. Statistics Thesis Direction:

2010	Rob Monzyk	“Comparison of Hierarchical Cluster Analysis Methods to Address Similarities in Missouri County Socioeconomic and Court Activity Data”
2009	Hanqing Lui	“Time Series Factor Analysis on US Economic Data”
2008	Zhenyu Wang	“Discriminant Analysis on Spectral Characteristics of Postural Control”
2008	Yu Lu	“Cluster Analysis of U.S. Residential Housing Market in Large Metropolitan Area”
2008	Unni Parameswaran	“Comparing Unit Root Tests and Other Measures of Persistence in Determining Persistence Properties of Time Series Data”
2007	Siwei Cheng	“Clustering Analysis of Time Series Data”
2007	Yi Zhuang	“CART Analysis of the MUAA Data”
2007	Yan Huang	“Racial Differences in Households’ Financial Asset Allocation: Evidence from 1992-2004”
2007	I-Ting Lu	“Bootstrapping Regression Models with Time Series Errors”
2006	Yuwei Wang	“Chinas Exchange Rate Policy: Depreciation or Appreciation”
2005	Nurisa Diandalu	“Combining Predictions for Time Series”
2004	Mark PowelL	“Use of Statistics to Enhance the Marketing Efforts of the MUAA”

University of South Carolina M.S. Statistics Thesis Direction:

1997	Yuan Lu	“New methods for Comparing Forecasts”
1996	Cheryl Karcher	“Classification Trees for Spectral Analysis”
1995	Kathleen Shutt	“Bootstrapping Times Series: Simulation and Estimation”
1992	Laura Gooding	Analysis of postural sway patterns using smooth spectrum estimation and testing”
1992	Pat Reynolds	“Power Studies for Shewhart Charts when with Correlated Data”
1991	Carla Padgett	“A study of α risks for Shewart control charts”
1989	Elizabeth Ely	“Bootstrap and Box-Jenkins prediction intervals for non-gaussian autoregressive models”
1988	Denise Walters	“The Detection and Effort of Outliers on Seasonal Time Series”
1988	Mayrose Pacis	“Control Charts for Correlated Data”
1987	Barbara Sniezak	“Prediction of the ARMA(p, q) process using the bootstrap method”
1986	Jan Schumann	“A Refinement of Bootstrap Prediction Interval for Autoregressive Processes”

University of South Carolina M.I.S. Statistics Thesis Direction:

2001	Lisa Branson	“Teaching Descriptive Statistics to High School Students Using Webstat”
------	--------------	---

University of South Carolina Honors College:

1994	David Whitin	“A Comparison of Multivariate Classification Techniques”
------	--------------	--

Ph.D. COMMITTEE MEMBERSHIP:**University of Missouri**

2009	Ting Yan	Political Science “From Trade to Int'l Conflict: Seeking Empirical and Theoretical Convergence”
2009	Jeremy Gorelick	Statistics “Nonparametric Treatment Comparison Based on Interval-Censored Data”
2008	Richard Morey	Psychological Sciences “Signal Detection Models with Random Participant and Item Effects”
2007	Kwang-Jin Kim	Political Science “The Logic of Decision in Militarized Disputes”

University of South Carolina:

2002	Andrea Thomas	Chemistry, Director: Scott Goode “Calibration, Optimization and Absorbtion of Metals analysis using Atomic Absorbtion and Laser Induced Breakdown Spectroscopy”
2001	Vanessa Kinton	Chemistry, Director: S. Morgan “Chemometric Techniques for Classification and Modeling of Mixture Composition of Multivariate Analytical Chemical Data,”
1999	Xiaobai Li	Management Science, Director: J. Sweigart “Multivariate Decision Trees for Data Mining, ”

- 1997 W. Scott Street Department of Statistics, Director: Don Edwards
 “B-splines and nonlinear mixed models for environmental time series”
- 1997 Steven Yoon Epidemiology and Biostatistics, Director: W. Drane
 “A comparison of classification error rates using pseudo-continuous variates”
- 1991 Chan, Kam C. Department of Accounting, Director: E. Chewning
 “ A reexamination of the stock market and bond market reaction to LIFO adoption”
- 1994 Melinda McCann Department of Statistics, Director: D. G. Edwards
 “Classical multiple comparisons via Naiman’s inequality”
- 1995 Jonathan Kuhn Department of Statistics, Director: W.J. Padgett
 “Bandwidth selection for kernel density estimation from right censored data”
- 1994 Melinda McCann Department of Statistics, Director: D. G. Edwards
 “Classical multiple comparisons via Naiman’s inequality”
- 1991 Chan, Kam C. Department of Accounting, Director: E. Chewning
 “A reexamination of the stock market and bond market reaction to LIFO adoption”
- 1987 Yuhlong Lio Department of Statistics, Director: W. J. Padgett
 “Smooth nonparametric quantile estimation from right-censored data”
- 1989 John R. Garlick Department of Accounting, Director: C. Strobel
 “Cumulative abnormal returns: intervention analysis”
- 1990 L. Drew Rosen Management Science, Director: T. Fry
 “The Measurement and Modeling of Quality in Service Organizations”
- 1989 John R. Garlick Department of Accounting, Director: C. Strobel
 “Cumulative abnormal returns: intervention analysis”
- 1987 Yuhlong Lio Department of Statistics, Director: W. J. Padgett
 “Smooth nonparametric quantile estimation from right-censored data”

MEMBERSHIPS IN PROFESSIONAL SOCIETIES:

American Statistical Association
 Institute of Mathematical Statistics
 Association for Women in Science
 CAUCUS for Women in Statistics

SERVICE TO THE PROFESSION:

- 2010 Chair, ASA Section on Statistical Education
- 2009-2010 Appointed Member, ASA Education Workgroup
- 2008 Chair, Fisher Lecture Award Committee
- 2009 - 2011 Executive Committee, ASA Section on Statistical Education
- 2005 - 2011 ASA Representative to COPSS, Fisher Lecture Committee.
- 2004 - 2005 Executive Committee, ASA Committee on Women in Statistics
- 2004 - 2006 Race Organizer, Gertrude Cox 5K Scholarship Run/Walk
- 2000 - 2003 President, Mu Sigma Rho, National Statistics Honor Society
- 1998 - 2000 Chair, George W. Snedecor Award Committee

1996 - 1998 George W. Snedecor Award Committee
1996 - 1998 Publications Chair, ASA Section on Statistical Education
1995 - 1996 Newsletter Editor, ASA Section on Quality and Productivity
1991 - 1992 President, South Carolina Chapter of the ASA
1990 - 1991 Vice President, South Carolina Chapter of the ASA
1989 - 1990 Secretary/Treasurer, South Carolina Chapter of the ASA

EDITORIAL SERVICE TO THE PROFESSION:

Associate Editor:

The American Statistician, August 1991 - Dec 1996.

Journal of Statistical Computation and Simulation, December 1989 - 1993.

Reviewer for:

Journal of the American Statistical Association, Annals of Statistics, The American Statistician, Technometrics, International Journal of Forecasting, Journal of Statistical Planning and Inference, Journal of Statistical Computation and Simulation, Computational Statistics and Data Analysis, Communications in Statistics, Mathematical Geology, Scandinavian Journal of Statistics, Springer Verlag Textbook Series, National Science Foundation (Grant Review) and National Security Administration (Grant Review)

PANEL REVIEW :

Panel Reviewer, NSF Human and Social Dynamics Grant Program, 2004.

Invitee, Workshop to develop curriculum guidelines for Undergraduate Education in Statistics, (as part of ASA's Undergraduate Statistics Education Initiative, USEI,) Alexandria, VA, April 28-29, 2000.

Panel Reviewer, NSF Faculty Early Career Development Program, 1996.

Panel Reviewer for National Science Foundation, Statistics Program Screening Panel, 1995.

Panel Reviewer for National Science Foundation, Instrumentation and Laboratory Improvement Grants, 1991.

Panel Reviewer for USC Provost's Instructional Development Fund, 1991-1993.

PRESENTATIONS:

Seminars Given at the Research Level:

Modeling Change in Municipal Fiscal Policy using Mayoral Expenditure Data, (with C. Sampson,) presented at the Joint Meetings of the American Statistical Association, Minneapolis, August 2005.

The Intelligent Design Movement: Sound Science or Creationism Cloaked in a Cheap Tuxedo?, presented at the Sigma Xi 72nd Annual Banquet, Oklahoma State University, March 2004.

Nonlinear Time Series Model Identification and Estimation via Resampling, presented to the Department of Statistics, Oklahoma State University, March 2004.

Nonlinear Time Series Model Identification and Estimation via Resampling, (with K. Ensor, Rice Univ.) presented at Special Contributed Topic Session entitled *Nonlinear and Nonstationary Time Series Models*, (organized by S. Pantula,) Joint Statistical Meetings, New York, August 2002.

The Intelligent Design Movement: Sound Science or Creationism Cloaked in a Cheap Tuxedo?, University of South Carolina Colloquium Series, September 2001.

Bootstrapping GARCH Models, Department of Economics and Statistics, Universidad de Carlos III, Madrid, Spain, May 1999.

A Tutorial on the Bootstrap, Department of Analysis, Economics, and Quantitative Economics, Universidad Autonoma de Madrid, June 1999.

Inference for Time Series by Resampling, Rutgers University, April 1998.

Time Series Inference Using Resampling Techniques, University of New South Wales, Sydney, Australia, May 1995.

Time Series Inference Under Weak Conditions, Center for Mathematics and Its Applications, Australian National University, Canberra, Australia, April 1995.

Inference for Autocorrelation Under Weak Conditions, University of North Carolina - Charlotte Colloquium Series, March 1994.

Spectral Analysis of Postural Sway Data, Stanford University Colloquium, May 1993.

Spectral Analysis of Postural Sway Data, Rice University, April 1993.

An overview of Time Series Analysis, USC Department of Exercise Science Colloquium, October 1992.

Quality Control and Correlation, Rice University Colloquium, November 1990.

Invited Talks at Conferences:

Resampling Dependent Data: Past, Present and Future, presented at the Seminar Celebrating Bill Schucanys 40 Years in Statistical Science at SMU, September 17, 2010.

Elementary Statistics Laboratory Course, presented at the 6th Annual International Conference on Statistics, Combinatorics and Related Areas, University of South Alabama, December 18-20, 1999.

Statistics Labs: Possible Formats and Some Examples, Beyond the Formula III - Technology and Teaching Statistics, Monroe Community College, Rochester, NY, August 5-6, 1999.

Elementary Statistics Laboratory Course, Beyond the Formula III - Technology and Teaching Statistics, Monroe Community College, Rochester, NY, August 5-6, 1999.

Resampling Techniques for GARCH Modeling, Summer Research Conference in Statistics, Ozark Folk Center, Mountain View, Arkansas, June 13-17, 1999.

Inference for Time Series, Joint Meetings of the American Statistical Association, Dallas 1998.

Resampling Methods in Time Series, The Centre de recherches mathematiques, Universite de Montreal, September 1997.

Time Series Inference Under Weak Conditions, ASA Annual Meeting, Toronto, Canada, August 1994.

An Experimental Environment for Introductory Statistics Students, Conference for Texas Statisticians, Austin TX, April 1993.

Local Bandwidth Selection for Density Estimation, 1990 Interface on Computing and Statistics, E. Lansing Michigan, May 1990.

Model-Dependent Resampling Methods for Time Series, IMS Annual Meeting, Ft. Collins CO, August 1988.

Recent Advances in Forecasting: Bootstrap Prediction Intervals for Time Series, Decision Sciences Institute Annual Meeting, Boston, MA, Nov. 1987.

Bootstrapping Times Series: An Overview, UNC-Charlotte Statistics Conference, Dec 1987.

Bootstrap Prediction Intervals for Autoregressive Processes, SRCOS-ASA Summer Research Conference, Mobile AL, June 1986.

Talks Given to a General Audience:

“Statistics as a Career Choice,” presented to the Math Club at Hickman High School, April 2005.

“Exposing Students to Statistics: Some New Approaches,” presented to the MIMS (Midlands Improving Math and Science) Quantitative Literacy Group, August 1996.

“Trial by Numbers: Statistical Issues in the Courtroom,” SC Governor’s School for Science and Mathematics, March 1995.

“USC Adventures in Creativity Camp,” Faculty Presenter, July 1996.