Thomas J. Fisher

Contact Information

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Citizenship: United States

Education

Ph.D. in Mathematical Sciences, Clemson University   *December 2009*
Dissertation: On the Testing and Estimation of High-Dimensional Covariance Matrices
Principal Advisor: Xiaoqian Sun (University of Missouri-Columbia)

M.S. in Mathematical Sciences, Clemson University   *May 2006*
MS Project: Simulation Study for Single-Index Models
Principal Advisor: K.B. Kulasekera (University of Nebraska-Lincoln)

B.S. in Computer Science, University of Maryland Baltimore County   *December 2003*
Senior Project: Simulating the Pick-up Stones Game: A Dynamic Approach

A.S. in Computer Science, Anne Arundel Community College   *May 2001*

Employment

Assistant Professor, University of Missouri-Kansas City   *August 2010 to Present*
Department of Mathematics and Statistics

Visiting Assistant Professor, Clemson University   *January 2010 to May 2010*
Department of Mathematical Sciences

Graduate Teaching Assistant, Clemson University   *August 2004 to December 2009*
Department of Mathematical Sciences

Software Administrator, Clemson University   *January 2008 to December 2009*
Center for Advanced Engineering Fibers and Films (CAEFF)
- CAEFF is an NSF Engineering Research Centers Program, Award EEC-9731680.

Graduate Assistant, Clemson University   *August 2006 to December 2006*
Academic Success Center, Supervisor of SI Leaders

Graduate Research Assistant, Clemson University   *May 2006 to August 2006*
Department of Mathematical Sciences, NSF Award 0304407

CMVP Lab Manager, COACT, Inc.   *December 2003 to August 2004*
COACT, Inc. of Columbia, MD 21046
- Manager of Cryptographic Module Validation Program (CMVP) Laboratory
- ISO 9001:2000 Registered and NVLAP Accredited

Security Technician, COACT, Inc.   *November 2001 to December 2003*
COACT, Inc. of Columbia, MD 21046

Published Articles

Refereed Published/Accepted

5. **Fisher, T. J.** and Gallagher, Colin M., "New Weighted Portmanteau Statistics for Time Series Goodness-of-Fit Testing.", *Journal of the American Statistical Association* 107 (498), 777-787, June 2012. (`doi:10.1080/01621459.2012.688465`)

4. **Fisher, T. J.**, "On Testing for an Identity Covariance Matrix when the Dimensionality Equals or Exceeds the Sample Size.", *Journal of Statistical Planning and Inference* 142 (1), 312–326, January 2012. (`doi:10.1016/j.jspi.2011.07.019`)

3. Piccirillo, Sarah, Wang, Hsiao-Lin, **Fisher, T. J.** and Honigberg, Saul M., "GAL1-SceI directed site-specific genomic (gsSSG) mutagenesis: a method for precisely targeting point mutations in S. cerevisiae.", *BMC Biotechnology* 11:120, 5 December 2011. (`doi:10.1186/1472-6750-11-120`)

2. **Fisher, T. J.** and Sun, Xiaoqian, "Improved Stein-Type Shrinkage Estimators for the High-dimensional Multivariate Normal Covariance Matrix.", *Computational Statistics and Data Analysis* 55 (5), 1909–1918, May 2011. (`doi:10.1016/j.csda.2010.12.006`)

1. **Fisher, T. J.**, Sun, Xiaoqian and Gallagher, Colin M., "A New Test for Sphericity of the Covariance Matrix for High Dimensional Data.", *Journal of Multivariate Analysis* 101 (10), 2554–2570, November 2010. (`doi:10.1016/j.jmva.2010.07.004`)

Book Reviews

1. **Fisher, T. J.**, A Review of: "Practical Multivariate Analysis, Fifth Edition, by A. Afifi, S. May, and V. A. Clark." *Journal of Biopharmaceutical Statistics* 22 (6), 1280–1283, October 2012. (`doi:10.1080/10543406.2012.713289`)

Current work

- *Diagnostics for noncausal time series with infinite variance* with Yunwei Cui and Rongning Wu.
- *General Weighted Time Series Portmanteau test* with Colin M. Gallagher.
- *Multivariate Time Series Modeling and Diagnostics* with Michael W. Robbins.
- *Sporulation rates of mutagensis of S. cerevisiae* with Saul M. Honigberg.
- *A cauchy test for autocorrelations* with Colin M. Gallagher and Jie Shen.

Grant Activity

Awarded

- PI: **Fisher, T. J.** "New Multivariate Techniques in Time Series Analysis and Forecasting.", *University of Missouri Research Board*, **$13,000**, 1 June 2011 to 31 May 2012.

Pending

- PI: **Fisher, T. J.** "Collaborative Research: Adaptive Weighting for Statistical Methods", *National Science Foundation Division of Mathematical Sciences – Statistics*, requested **$120,585**, submitted 2 November 2012.

Teaching Experience

University of Missouri-Kansas City
Department of Mathematics & Statistics:

Course	Title	Semester	Students	Rating*
Stat 235	Elementary Statistics	Spring 2013	TBD	TBD
Stat 5572	Multivariate Analysis	Spring 2013	TBD	TBD
Stat 436	Mathematical Statistics I	Fall 2012	15	TBD
State 5551	Applied Statistical Analysis	Fall 2012	9	TBD
Stat 235	Elementary Statistics	Spring 2012	71	4.554
Stat 5572	Multivariate Analysis	Spring 2012	10	4.789
Math 300	Linear Algebra I	Fall 2011	28	4.483
Stat 5551	Applied Statistical Analysis	Fall 2011	6	4.852
Stat 235	Elementary Statistics	Spring 2011	69	4.341
Stat 5572	Multivariate Analysis	Spring 2011	8	4.778
Stat 235	Elementary Statistics	Fall 2010	40	4.520

* The above rating is the weighted average of questions #1 to #9 on student course evaluations. The weighted average provides an overall teaching evaluation on a 5 point scale, 5 being the best, 1 the worst.

Clemson University
Department of Mathematical Sciences:

Course	Title	Semester	Students	Rating**
MthSc 106	Calculus of One Variable	Spring 2010	37	4.15
MthSc 302	Engineering Statistics	Spring 2010	35	4.09
MthSc 309	Introductory Business Statistics	Fall 2009	37	4.11
MthSc 302	Engineering Statistics	Spring 2009	24	4.54
MthSc 302	Engineering Statistics	Fall 2008	45	4.42
MthSc 302	Engineering Statistics	Spring 2008	18	3.88
MthSc 309	Introductory Business Statistics	Fall 2007	29	4.11
MthSc 207	Multivariable Calculus	Spring 2007	19	4.05
MthSc 102	Intro. to Mathematical Analysis	Spring 2006	19	3.94
MthSc 102	Intro. to Mathematical Analysis	Fall 2005	38	4.18

** The above rating is the average score on question #10 on student course evaluations. The question asks the student for an overall teaching evaluation on a 5 points scale, 5 being the best, 1 the worst.

Advising

Masters Advising
 - Veena Vezhapparambu, 2012, *Masters Project*, "Modeling Daily Rainfall and Detecting Changepoints"

PhD Committees
 - Jianfeng Meng, "Gene copy number variations on asthma patients"
 - Wei Wu, "Sequential sampling scheme to estimate the reliability of computer software systems"
 - Karen Richard, "Management of highway systems prone to high accident patterns"

Conference and Workshop Presentations

5. "New Weighted Portmanteau Statistics for Time Series Goodness-of-Fit Testing." *Poster Presentation at NBER-NSF Time Series Conference*, College Station, TX, 27 October 2012.

4. "Time Series Goodness-of-Fit Testing using a Weighted Portmanteau Statistic." *Contributed talk to the 2012 Joint Statistical Meetings, Section on Time Series and Forecasting*, San Diego, CA, 31 July 2012.

3. "Weighted Portmanteau Tests Revisited: Detecting Heteroscedasticity, Fitting Nonlinear and Multivariate Time Series." *Invited Paper to the 2012 SAS Global Forum*, Orlando, FL, 24 April 2012.

2. "Testing on the Multivariate Normal Covariance Matrix in High-Dimensions." *Contributed Talk to the 2011 Joint Statistical Meetings, Section on Statistics in Epidemiology*, Miami, FL, 2 August 2011.

1. "Testing the Adequacy of ARMA Models using a Weighted Portmanteau Test on Residual Autocorrelations." *Contributed Paper to the 2011 SAS Global Forum*, Las Vegas, NV, 5 April 2011.

Seminar Talks

5. "Weighting the Portmanteau Test." *Department of Statistics, University of Missouri-Columbia, Department Colloquium*, 28 November 2012.

4. "Time Series Modeling and Diagnostic Testing." *Department of Mathematics and Statistics, University of Missouri-Kansas City, Graduate Seminar*, 18 November 2011.

3. "The Stein Paradox and Estimation of the Covariance Matrix." *Department of Mathematics and Statistics, University of Missouri-Kansas City, Graduate Seminar*, 24 September 2010.

2. "Improved Stein-type Estimators for the Covariance Matrix under Normality." *Department of Mathematical Sciences, Clemson University, Graduate Student Seminar*, 9 November 2009.

1. "Introduction to the R Project for Statistical Computing." *Department of Mathematical Sciences, Clemson University, Graduate Student Seminar*, 8 October 2007.

Service

Professional
 - Reviewer for the *Bernoulli Journal*
 - Reviewer for the *Journal of Biopharmaceutical Statistics*.
 - Reviewer for XVIII Annual Congress of the *Portuguese Statistical Society*.

UMKC Department Service
 - Graduate Teaching Assistant Supervisor, August 2012 to present.
 - Graduate Teaching Assistant Advisory Committee, August 2011 to present.
 - Graduate Assessment Coordinator, January 2011 to present.
 - Statistics Curriculum Committee, August 2010 to present.
 - Graduate Recruitment Committee, August 2010 to present.
 - Salary Committee, May 2011 to August 2011.
 - Committee to revise IPhD Requirements, October 2010 to January 2011.

Clemson Graduate Student Service
 - Graduate Mentor, CAEFF Research Experience for Teachers Program, June 2008 to August 2008.
 - Volunteer, Clemson Calculus Challenge, 18 April 2008.
 - Organizer, ACES Workshop, Southeast SIAM Student Chapter regional conference, 26 January 2008.
 - Vice President, Clemson University SIAM Student Chapter, August 2007 to May 2008.

Awards and Honors

- SAS Global Forum Faculty Scholarship, 2011.
- Outstanding Citizenship Award, Department of Mathematical Sciences, Clemson University, 2007-2008 Academic Year.
- Outstanding Graduate Teaching Assistant Award, Department of Mathematical Sciences, Clemson University, 2005-2006 Academic Year.

Professional Memberships and Interest

Professional Affiliations

- American Statistical Association (ASA).
- American Mathematical Society (AMS).

Professional Development/Activities

- NSF Day, University of Kansas, 5 October 2010.
- CAEFF NSF Site Visit, Clemson University, 23 September 2008.

Professional Interest

- Multivariate Analysis and its application to modern science: genetics and economics.
- Time-Series Analysis and Forecasting.
- Stochastic Processes, Probability and Kernel Smoothing.

Personal Interests

Personal Affiliations

- Maryland State Archives.
- Maryland Historical Society.
- Maryland Genealogical Society.
- USA Hockey.

Personal Interest

- Genealogy and History.
- Home-brewing.
- Recreational Softball, Hiking, Tennis and Ice-Hockey.