Thomas J. Fisher

Curriculum Vitæ

December 22, 2014

Contact Information

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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, Miami University ***August 2013 to Present***
Department of Statistics

Assistant Professor, University of Missouri-Kansas City ***August 2010 to August 2013***
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)

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

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

Scholarship

Refereed Published/Accepted Articles

9. Robbins, Michael W., **Fisher, T. J.**, "Cross-Correlation Matrices for Tests of Independence and Causality between Two Multivariate Time Series," *Journal of Business and Economic Statistics*, in press. (doi:10.1080/07350015.2014.962699)
8. Gallagher, Colin M., **Fisher, T. J.**, "On Weighted Portmanteau Tests for Times Series Goodness-of-fit," *Journal of Time Series Analysis*, in press. (doi:10.1111/jtsa.12093)
7. Gallagher, Colin M., **Fisher, T. J.** and Shen, Jie, "A Cauchy Estimator Test for Autocorrelation," *Journal of Statistical Computation and Simulation*, in press. (doi:10.1080/00949655.2013.874424)
6. Cui, Yunwei, **Fisher, T. J.** and Wu, Rongning, "Diagnostic Tests for Non-causal Time Series with Infinite Variance," *Journal of Statistical Planning and Inference* 147, 117-131, April 2014. (doi:10.1016/j.jspi.2013.10.010)
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)

Technical Reports and Others

3. Gallagher, Colin and **Fisher, T. J.**, "A comparison of Various Weighted Portmanteau Tests for Time Series Goodness-of-fit," *Clemson University Technical Report*, 2013. (http://www.clemson.edu/ces/math/technical_reports/gallagher.TR2013.pdf)
2. **Fisher, T. J.** "Weighted Portmanteau Tests Revisited: Detecting Heteroscedasticity, Fitting Nonlinear and Multivariate Time Series," *Invited Paper to the 2012 SAS Global Forum*. (http://support.sas.com/resources/papers/proceedings12/338-2012.pdf)
1. **Fisher, T. J.** "Testing the Adequacy of ARMA Models using a Weighted Portmanteau Test on Residual Autocorrelations," *Contributed Paper to the 2011 SAS Global Forum*. (http://support.sas.com/resources/papers/proceedings11/327-2011.pdf)

Current work

- *Multivariate Time Series Modeling and Diagnostics* with Michael W. Robbins.
- *Analysis of Lake Acton Ecology* with Mike Vanni, Maria Gonzalez and Bill Renwick.
- *Adaptive Estimation of Time Series*.

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.
- PI: **Fisher, T. J.** "Adaptive Estimation in Time Series," *Miami University Faculty Research Grants*, **$6,500**, 19 May 2014 to 1 Aug 2014.
- PI: **Fisher, T. J.** "Adaptive Estimation in Time Series," *Miami University College of Arts & Science Faculty Funding*, **$5,000**, Summer 2015.

Conference and Workshop Presentations

7. "An Application of Stochastic Optimization to Time Series Modeling," *Presentation at 42nd Annual Mathematics Conference "Optimization"*, Oxford, OH, 19 September 2014.
6. "Weighting the Times Series Portmanteau Test," *Poster Presentation at Southern Regional Council on Statistics Summer Conference 2013*, Nashville, TN, 4 June 2013.
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.

Teaching Experience

Miami University, *Department of Statistics:*

Course	Title	Semester	Students	Rating*
Sta 401/501	Probability	Fall 2014	13	3.67
Sta 462/562	Inferential Statistics	Fall 2014	25	3.70
Sta 261	Statistics	Spring 2014	80	3.17
Sta 483/583	Analysis of Forecasting Systems	Spring 2014	42	3.57
Sta 301	Applied Statistics	Winter 2014	15	3.67
Sta 462/562	Inferential Statistics	Fall 2013	27	3.64
Sta 667	Multivariate Statistical Analysis	Fall 2013	8	3.50

* The above rating is the average score on question #5 on student course evaluations. The question asks for an overall evaluation of the effectiveness of the instructor on a 4 points scale, 4 being the best, 0 the worst.

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

Course	Title	Semester	Students	Rating**
Stat 235	Elementary Statistics	Spring 2013	72	4.505
Stat 5572	Multivariate Analysis	Spring 2013	4	4.963
Stat 436	Mathematical Statistics I	Fall 2012	15	4.316
Stat 5551	Applied Statistical Analysis	Fall 2012	9	4.741
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

- Bo Wang, 2014, *Master Thesis, Dept. of Economics*, "Detecting Shift in Mean and Variance for Both Uncorrelated and Correlated Series Using Several Popular Tests."
- Veena Vezhapparambu, 2012, *Masters Project*, "Modeling Daily Rainfall and Detecting Changepoints."

Masters Committees

- Alexander Martishius, Steve Kiplagat, Michael Tekavec, Jefei Zhang, Michael LaTour, Lin Dai

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."

Service

Professional

- Reviewer for Journals:
    - *The American Statistician* (09/14-11/14), *Hacettepe Journal of Mathematics and Statistics* (09/14-11/14), *Environmetrics* (05/14-06/14), *Metrika* (06/14-07/14, 05/13-06/13), *Far East Journal of Theoretical Statistics* (02/14-05/14), *Journal of Business and Economic Statistics* (01/14-09/14), *Journal of Multivariate Analysis* (06/13-02/14, 07/13-12/13), *Bernoulli Journal* (01/12-08/13), *Portuguese Statistical Society* (12/11-02/12).
- Grant Review:
    - Ohio Water Resources *State Water Resources Research Institute 104(b) Grant Program* (12/14)

Miami Department Service

- Undergraduate Curriculum Committee, August 2013 to Present.
- Analytics Graduate Certificate Development Committee, December 2013 to Present.
- Committee to create Actuarial Science co-major, Jan 2014 to Present.
- Colloquium Committee, August 2013 to Present.
- Statistical Consulting Center, August 2013 to Present.
- Co-Advisor (with Byran Smucker) on establishing Actuarial Science Club, January 2014 to Present.

UMKC Department Service

- Hiring Committee (3-positions), September 2012 to April 2013.
- Graduate Teaching Assistant Supervisor, August 2012 to May 2013.
- Graduate Assessment Coordinator, January 2011 to May 2013.
- Statistics Curriculum Committee, August 2010 to May 2013.
- 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.
- 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).

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

- Cincinnati Curling Club.
- 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.