Derek S. Young, PStat®

Updated January 25, 2018

CONTACT INFORMATION

Department of Statistics
University of Kentucky
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RESEARCH INTERESTS

(Finite) mixture models; tolerance regions; non/semiparametric methods; statistical computing; data depth; zero-inflated models; astrostatistics; applied survey data analysis

EDUCATION

The Pennsylvania State University, University Park, PA

Ph.D. in Statistics, August 2007

M.S. in Statistics, August 2005

University of Michigan, Ann Arbor, MI

B.S. in Mathematics, April 2002

- Pure Mathematics (major); Statistics (minor)

PROFESSIONAL EXPERIENCE

University of Kentucky, Lexington, KY
Department of Statistics
Assistant Professor of Statistics — **Fall 2014 - Present**

U.S. Bureau of the Census, Washington, DC
Center for Statistical Research and Methodology
Research Mathematical Statistician — **Fall 2011 - Summer 2014**

Bettis Atomic Power Laboratory, West Mifflin, PA
Irradiations & Statistics Division
Senior Statistician — **Spring 2008 - Fall 2011**

The Pennsylvania State University, University Park, PA
Department of Statistics
Lecturer of Statistics — **Spring 2008 - Fall 2013**
Research Assistant — **Summer 2005, Summer 2006 - Summer 2007**
Conference Assistant — **Summer (2005, 2006, 2007)**
Instructor — **Summer (2003, 2004), Spring 2005 - Spring 2006**
Teaching Assistant — **Fall 2002 - Fall 2004**

Ford Motor Company/Visteon, Shelby Township, MI
Utica Trim Plant
Industrial Engineer Intern — **Summer (2000, 2001, 2002)**

PROFESSIONAL APPOINTMENTS

◇ Accredited Professional Statistician™ (October 4$^{\text{th}}$, 2013 – Present)
◇ U.S. Census Bureau Special Sworn Status (Fall 2011 - Summer 2014)
◇ Department of Energy L Clearance (Spring 2008 - Fall 2011)

BOOK

D. S. Young (2017). *Handbook of Regression Methods*. Chapman and Hall/CRC Press, Boca Raton, FL, xvi + 637 pages.

BOOK CHAPTER

D. S. Young (2014). "Computing Tolerance Intervals and Regions Using `R`." In M. B. Rao and C. R. Rao, editors, *Handbook of Statistics, Volume 32: Computational Statistics with R*, 309–338. North-Holland: Amsterdam.

PEER-REVIEWED PUBLICATIONS

D. S. Young, M. Naghizadeh Qomi, and A. Kiapour (2017). "Approximate Confidence and Tolerance Limits for the Discrete Pareto Distribution for Characterizing Extremes in Count Data." *Statistica Neerlandica*, in press.

S. A. Mitelman, M. S. Buchsbaum, **D. S. Young**, M. Mehmet Haznedar, E. Hollander, L. Shihabuddin, E. A. Hazlett, and M.-C. Bralet (2017). "Increased White Matter Metabolic Rates in Autism Spectrum Disorder and Schizophrenia." *Brain Imaging and Behavior*, in press.

D. S. Young, C. Ke, and X. Zeng (2017). "The Mixturegram: A Visualization Tool for Assessing the Number of Components in Finite Mixture Models." *Journal of Computational and Graphical Statistics*, in press.

J. Weng and **D. S. Young** (2017). "Some Dimension Reduction Strategies for the Analysis of Survey Data." *Journal of Big Data*, **4**(43), 1–19.

D. S. Young, A. M. Raim, and N. R. Johnson (2017). "Zero-Inflated Modelling for Characterizing Coverage Errors of Extracts from the U.S. Census Bureau's Master Address File." *Journal of the Royal Statistical Society, Series A*, **180**(1), 73–97.

D. S. Young (2016). "Normal Tolerance Interval Procedures in the tolerance Package." *The R Journal*, **8**(2), 200–212.

D. S. Young, C. M. Gordon, S. Zhu, and B. D. Olin (2016). "Sample Size Determination Strategies for Normal Tolerance Intervals Using Historical Data." *Quality Engineering*, **28**(3), 337–351.

M. Naghizadeh Qomi, A. Kiapour, and **D. S. Young** (2016). "Approximate Tolerance Intervals for the Discrete Poisson-Lindley Distribution." *Journal of Statistical Computation and Simulation*, **86**(4), 841–854.

D. S. Young, G. F. Johnson, M. Chow, and J. L. Rosenberger (2015). "The Challenges in Developing an Online Applied Statistics Program: Lessons Learned at Penn State University." *The American Statistician*, **69**(3), 213–220.

D. S. Young (2015). "Tolerance Intervals for Hypergeometric and Negative Hypergeometric Variables." *Sankhyā: The Indian Journal of Statistics, Series B*, **77**(1), 114–140.

D. S. Young and D. R. Hunter (2015). "Random Effects Regression Mixtures for Analyzing Infant Habituation." *Journal of Applied Statistics*, **42**(7), 1421–1441.

D. S. Young and T. Mathew (2015). "Ratio Edits Based on Statistical Tolerance Intervals." *Journal of Official Statistics*, **31**(1), 77–100.

D. S. Young and T. M. Mills (2014). "Choosing a Coverage Probability for Forecasting the Incidence of Cancer." *Statistics in Medicine*, **33**(23), 4104–4115.

D. S. Young and T. Mathew (2014). "Improved Nonparametric Tolerance Intervals Based on Interpolated and Extrapolated Order Statistics." *Journal of Nonparametric Statistics*, **26**(3), 415–432.

D. S. Young (2014). "*Bond. James Bond.* A Statistical Look at Cinema's Most Famous Spy." *CHANCE*, **27**(2), 21–27.

D. S. Young (2014). "Mixtures of Regressions with Changepoints." *Statistics and Computing*, **24**(2), 265–281.

D. S. Young (2014). "A Procedure for Approximate Negative Binomial Tolerance Intervals." *Journal of Statistical Computation and Simulation*, **84**(2), 438–450.

D. S. Young (2013). "Regression Tolerance Intervals." *Communications in Statistics - Simulation and Computation*, **42**(9), 2040–2055.

T. Mathew and **D. S. Young** (2013). "Fiducial-Based Tolerance Intervals for Some Discrete Distributions." *Computational Statistics and Data Analysis*, **61**, 38–49.

D. S. Young (2013). "Approximate Tolerance Limits for Zipf-Mandelbrot Distributions." *Physica A: Statistical Mechanics and its Applications*, **392**(7), 1702–1711.

D. R. Hunter and **D. S. Young** (2012). "Semiparametric Mixtures of Regressions." *Journal of Nonparametric Statistics*, **24**(1), 19–38.

D. S. Young (2010). "tolerance: An R Package for Estimating Tolerance Intervals." *Journal of Statistical Software*, **36**(5), 1–39.

D. S. Young and D. R. Hunter (2010). "Mixtures of Regressions with Predictor-Dependent Mixing Proportions." *Computational Statistics and Data Analysis*, **54**(10), 2253–2266.

T. Benaglia, D. Chauveau, D. R. Hunter, and **D. S. Young** (2009). "mixtools: An R Package for Analyzing Mixture Models." *Journal of Statistical Software*, **32**(6), 1–29.

Invited Editorial

D. S. Young, L. Feng, and R. J. Charnigo (2015). "Some Flexible Modeling Paradigms for Analyzing Big Data." *Journal of Biometrics and Biostatistics*, S12-e001, 1–4.

Manuscripts Under Revision or Submitted

D. Musgrove, **D. S. Young**, J. Hughes, and L. E. Eberly (2018). "A Sparse Areal Mixed Model for Multivariate Outcomes, with an Application to Zero-Inflated Census Data." Submitted.

D. S. Young and E. S. Roemmele (2017+). "Zero-Inflated Count Regression Models: A Review and Contemporary Perspective." Submitted.

D. S. Young and T. Mathew (2017+). "Nonparametric Hyperrectangular Tolerance and Prediction Regions for Setting Multivariate Reference Regions in Laboratory Medicine." Submitted.

Manuscripts in Preparation

D. S. Young, X. Chen, D. C. Hewage, and R. N. Poyanco (2018). "Finite Mixture-of-Gamma Distributions: Estimation, Inference, and Model-Based Clustering."

D. S. Young (2018). "Bayesian Credible Regions Using Data Depth."

D. S. Young (2018). "Semiparametric Regression Tolerance Intervals."

K. Cheng and **D. S. Young** (2018). "Pointwise Tolerance Intervals for Autoregressive Models."

D. S. Young (2018). "Mixtures of Regressions with Measurement Errors."

D. S. Young (2018). "An ECM Algorithm with an Adaptive Barrier for a Mixture-of-Regressions Model Applied to Gamma Ray Burst Data."

K. F. Sellers, **D. S. Young**, and S. M. Lockwood (2018). "Zero-Inflated Sum of Conway-Maxwell-Poissons (ZIsCMP) Regression with Application to Shark Distributions."

D. S. Young (2018). "An Approach for Specifying Winsorization Cutoffs."

Book Reviews

D. S. Young (2012). *Optimal Experimental Design with R* by D. Rasch, J. Pilz, R. Verdooren, and A. Gebhardt. *Journal of Applied Statistics*, **39**(8), 1848–1849.

D. S. Young (2010). *Statistical Tolerance Regions: Theory, Applications, and Computation* by K. Krishnamoorthy and T. Mathew. *Technometrics*, **52**(1), 143–144.

R Packages

(See respective CRAN webpage for archive of previous sources.)

D. S. Young (2017). `HoRM`*: Supplemental Functions and Datasets for "Handbook of Regression Methods"*. R Package, Version 0.1.0. (Current Version: 0.1.1, 2017).

D. S. Young (2009). `tolerance`*: Statistical Tolerance Intervals and Regions*. R Package, Version 0.1.0. (Current Version: 1.3.0, 2017).

D. S. Young, T. Benaglia, D. Chauveau, D. R. Hunter, R. T. Elmore, F. Xuan, T. P. Hettmansperger, and H. Thomas (2006). `mixtools`*: Tools for Analyzing Finite Mixture Models*. R Package, Version 0.1.0. (Current Version: 1.1.0, 2017).

Shiny App

K. Cheng, J. Lambert, Y. Cui, and **D. S. Young** (2017). *Handbook of Regression Methods*. https://horm.as.uky.edu.

Short Courses and Tutorials Delivered

Astrostatistics R Tutorials. 2016 Summer School in Statistics for Astronomers XII, University Park, PA. May 31st - June 4th, 2016.

How to Obtain and Use Census, Panel Study of Income Dynamics, and National Longitudinal Survey Data. Quantitative Initiative for Policy and Social Research (QIPSR), University of Kentucky, Lexington, KY. September 25th, 2015 (With T. Janoski).

Astrostatistics R Tutorials. 2015 Summer School in Statistics for Astronomers XI, University Park, PA. June 1st - 5th, 2015.

Astrostatistics R Tutorials. 2014 Summer School in Statistics for Astronomers X, University Park, PA. June 2nd - 6th, 2014.

Introduction to Regression Using NCSS. Knolls Atomic Power Laboratory, Schenectady, NY. February 22nd - 24th, 2010.

Introduction to Regression Using NCSS. Bettis Atomic Power Laboratory, West Mifflin, PA. March 18th, 25th, and April 1st, 2009.

Introduction to Regression Using NCSS. Bettis Atomic Power Laboratory, West Mifflin, PA. October 1st, 8th, and 15th, 2008.

Astrostatistics R Tutorials. 2008 Summer School in Statistics for Astronomers IV, University Park, PA. June 9th - 14th, 2008 (Written by D. R. Hunter; Revised and Presented by D. S. Young).

Seminars and Colloquia

Hyperrectangular Tolerance and Prediction Regions for Setting Multivariate Reference Regions in Laboratory Medicine. University of Louisiana at Lafayette - Department of Mathematics, Lafayette, LA. November 2nd, 2017.

Hyperrectangular Tolerance and Prediction Regions for Setting Multivariate Reference Regions in Laboratory Medicine. University of Maryland, Baltimore County - Department of Mathematics and Statistics, Baltimore County, MD. October 20th, 2017.

Parametric and Semiparametric Mixtures of Regressions. University of Kentucky - Department of Statistics, Lexington, KY. February 18th, 2013.

Parametric and Semiparametric Mixtures of Regressions. Clemson University - Department of Mathematical Sciences, Clemson, SC. February 15th, 2013.

Parametric and Semiparametric Mixtures of Regressions. University of Florida - Department of Statistics, Gainesville, FL. January 31st, 2013.

Parametric and Semiparametric Mixtures of Regressions. Western Michigan University - Department of Statistics, Kalamazoo, MI. December 3rd, 2012.

Semiparametric Mixtures of Regressions and the `mixtools` Package. U.S. Census Bureau - Center for Statistical Research and Methodology, Washington, DC. June 24th, 2011.

Semiparametric Mixtures of Regressions. Mississippi State University - Department of Mathematics and Statistics, Mississippi State, MS. February 11th, 2011.

Semiparametric Mixtures of Regressions. University of Wyoming - Department of Statistics, Laramie, WY. February 4th, 2011.

A Study of Mixtures of Regressions. U.S. Census Bureau - Statistical Research Division, Washington, DC. August 21st, 2007.

Invited Presentations

**Presented by Coauthor*

Multivariate Reference Regions in Laboratory Medicine. International Conference on Statistics and Its Applications (ICSA) with an Emphasis on Clinical and Official Statistics, Pala, Kerala, India. January 4th, 2018 (With T. Mathew*).

Zero-Inflated Count Regression Models. Workshop on Estimation of Count Models, University of Kentucky Department of Statistics and Department of Economics, Lexington, KY. February 27th, 2017 (Workshop Organized with C. Lamarche).

Multivariate Hyperrectangular Tolerance Regions Based on Data Depth. 3rd Conference of the International Society for Nonparametric Statistics, Avignon, France. June 12th, 2016 (With T. Mathew).

Modeling Coverage Errors of the Master Address File. U.S. Census Bureau - Center for Statistical Research and Methodology, Washington, DC. March 26th, 2013.

Semiparametric Mixtures of Regressions. International Workshop on Mixture Models and Their Applications, Pau, France. June 23rd, 2008 (With D. R. Hunter*, D. Chauveau, P. Vandekerkhove, and L. Bordes).

Mixtures of Regressions. 2007 C. R. & Bhargavi Rao Prize Award Ceremony, University Park, PA. May 24th, 2007.

Building R Packages. Department of Statistics Student Organized Seminar - The Pennsylvania State University, University Park, PA. April 13th, 2007.

Presentations

Multivariate Hyperrectangular Tolerance Regions for Determining Reference Regions in Laboratory Medicine. JSM 2017, Baltimore, MD. August 3rd, 2017 (With T. Mathew).

A Flexible Zero-Inflated Count Regression Model. 30th Annual Eastern Kentucky University Symposium in the Mathematical, Statistical, and Computer Sciences. Eastern Kentucky University, Richmond, KY. April 21st, 2017 (With E. S. Roemmele*). Winner: Best Student Presentation.

Operating Characteristic Curves for k-Factors of Normal Tolerance Intervals. JSM 2016, Chicago, IL. August 2nd, 2016.

A Visualization Tool for Assessing the Number of Components in Finite Mixture Models. JSM 2015, Seattle, WA. August 10th, 2015.

Pointwise Tolerance Intervals for Non-Stationary Generalized Extreme Value Regression Models. 9th International Extreme Value Analysis Conference. University of Michigan, Ann Arbor, MI. June 19th, 2015.

Zero-Inflated Regression Modeling for Coverage Errors of the Master Address File. JSM 2014, Boston, MA. August 7th, 2014 (With A. M. Raim*).

Ratio Edits Based on Tolerance Intervals. JSM 2013, Montréal, Québec, Canada. August 7th, 2013 (With T. Mathew).

Semiparametric Mixtures of Regressions. JSM 2012, San Diego, CA. August 2nd, 2012 (With D. R. Hunter*).

Statistical Data Analysis Using Excel's Analysis ToolPak. Bettis Atomic Power Laboratory, West Mifflin, PA. June 4th, 2008.

Mixtures of Regressions and Covariate-Dependent Mixing Proportions. JSM 2006, Seattle, WA. August 7th, 2006 (With D. R. Hunter).

Poster Presentations

A Mixture-of-Regressions Model with Measurement Error in the Response. JSM 2017 SPEED Session, Baltimore, MD. August 1st, 2017 (With X. Fang*).

Invited Conferences and Workshops

3rd Conference of the International Society for Nonparametric Statistics, Avignon, France. June 11th - 16th, 2016 (Invited Speaker).

Geospatial Methods for Federal Surveys. Bureau of Labor Statistics, Washington, DC. September 16th - 17th, 2013 (Invited Attendee).

7th Annual Probability & Statistics Day at UMBC. University of Maryland, Baltimore County, Baltimore, MD. April 26th - 27th, 2013 (Invited Attendee and Poster Judge).

Conferences, Workshops, and Short Courses Attended

(Presenters for short courses given in parentheses.)

NIH R15 AREA Grant Writing Workshop. University of Louisville Medical School, Louisville, KY. November 7th, 2015.

9th International Extreme Value Analysis Conference. University of Michigan, Ann Arbor, MI. June 15th - 19th, 2015.

Satellite Workshop on Statistical Computing for Extremes. University of Michigan, Ann Arbor, MI. June 14th, 2015 (Eric Gilleland and Mathieu Ribatet).

8th Annual Probability & Statistics Day at UMBC. University of Maryland, Baltimore County, Baltimore, MD. April 18th - 19th, 2014.

Analysis of Overdispersed Data Using SAS®. University of Maryland, Baltimore County, Baltimore, MD. April 18th, 2014 (Jorge Morel and Nagaraj Neerchal).

2013 FCSM Research Conference. Federal Committee on Statistical Methodology, Washington, DC. November 4th - 6th, 2013.

Multiple Imputation: Theory and Practice. University of Maryland, Baltimore County, Baltimore, MD. April 26th, 2013 (Jerry Reiter).

Statistics for Spatio-Temporal Data. U.S. Census Bureau, Washington, DC. April 17th, 2013 (Noel Cressie).

2012 FCSM Statistical Policy Seminar - Collaborating to Achieve Innovation and Efficiencies: Advances and Opportunities. Federal Committee on Statistical Methodology, Washington, DC. December 4th - 5th, 2012.

Record Linkage Error Estimation. U.S. Census Bureau, Washington, DC. October 4th, 2012 (William Winkler).

Editing and Imputation. U.S. Census Bureau, Washington, DC. May 17th, 2012 (William Winkler).

2012 FCSM Research Conference. Federal Committee on Statistical Methodology, Washington, DC. January 10th - 12th, 2012.

Future of Nuclear Power. JSM 2009, Washington, DC. August 5th, 2009 (Bernard Harris).

Monte Carlo and Bayesian Computation with R. JSM 2009, Washington, DC. August 4th, 2009 (Maria Rizzo and Jim Albert).

Tolerance Intervals: Theory, Applications, and Computation. JSM 2009, Washington, DC. August 2nd, 2009 (Kalimuthu Krishnamoorthy and Thomas Mathew).

Longitudinal Data Analysis: Semiparametric and Nonparametric Approaches. JSM 2009, Washington, DC. August 1st, 2009 (Annie Qu and Peter Song).

FUNDING ACTIVITY

ACTIVE

PI: Ziliak 07/01/16 - 06/30/19, $299,999
Co-PIs: Bollinger, Mays, Toma, **Young**
NSF - SES (SES - 1562503)
Project: *Research Data Centers: Kentucky Research Data Center*

PENDING

PI: **Young** 06/01/18 - 05/31/21, $341,029
Co-PIs: Lamarche, Sellers NSF - DMS
Project: *Collaborative Research: Zero-Inflated Count Regression Models: Flexible Approaches and Multivariate Extensions*

PI: **Young** 06/01/18 - 05/31/21, $164,241
NSF - SES
Project: *Establishing Data-Driven Limits via Novel Tolerance Regions Procedures for Complex Data Problems*

COMPLETED

PI: **Young** 09/09/15 - 12/31/15, $6,200
Kentucky Justice Cabinet (UKRF 201507061822)
Project: *State Justice Statistics Grant Program*

PI: **Young** 01/01/15 - 05/15/15, $10,000
Cyberonics, Inc. (UKRF 201502111631)
Project: *Using Historical Data for Sample Size Determination for Normal Tolerance Intervals*

NOT FUNDED

PI: **Young** 06/01/17 - 05/31/20, $169,794
NSF - ACI
Project: *SI2-SSE: Shiny App for "Handbook of Regression Methods"*

PI: **Young** 07/03/17 - 12/31/17, $27,226
Co-PI: Lamarche University of Kentucky Igniting Research Collaboration (IRC) Pilot Program
Project: *Zero-Inflated Quantile Regression Models for Panel Count Data*

PI: **Young** 05/01/17 - 04/30/18, $10,000
University of Kentucky Vice President for Research - Research Support Grant
Project: *Estimation Strategies and Computational Tools for Semiparametric Zero-Inflated Count Regression Models*

PI: **Young** 07/01/17 - 06/30/20, $157,965
NSF - DMS
Project: *Tolerance Regions in Complex Data Problems: Methods, Algorithms, and Computation*

PI: **Young** 09/01/17 - 08/30/22, $409,909
NSF - DMS
Project: *CAREER: Zero-Inflated Count Regression Models: Semiparametric Approaches and Multivariate Extensions*

PI: **Young** 02/01/17 - 01/31/19, $40,000
NSA - MSP Young Investigator Grant
Project: *Tolerance Sets: Nonparametric and Semiparametric Extensions*

PI: **Young** 06/01/16 - 05/30/19, $208,990
NSF - DMS
Project: *Tolerance Sets: Nonparametric and Semiparametric Extensions*

PI: **Young** 06/01/15 - 05/30/18, $184,881
NSF - DMS
Project: *Tolerance Sets: Nonparametric and Semiparametric Extensions*

PI: **Young** 01/01/15 - 12/31/15, $3,440
University of Kentucky Vice President for Research - Research Support Grant
Project: *A Visualization Tool for Assessing the Number of Components in Finite Mixture Models*

NOT INVITED FOR FULL PROPOSAL

PI: **Young** 2017
Co-PI: Yin NSF - CISE
Project: *BD Spokes: Sufficient Dimension Reduction for Strengthening Big Data Analytics Involving Complex Survey Data: Methods and Computational Tools*

PI: **Young** 2014
NSF - DMS
Project: *RAPID: Pointwise Tolerance Intervals for Non-Stationary Generalized Extreme Value Regression Models*

PI: **Young** 2014
ORAU Ralph E. Powe Junior Faculty Enhancement Award
Project: *Pointwise Tolerance Intervals for Non-Stationary Generalized Extreme Value Regression Models*

TRAVEL GRANTS

2006 JSM, Seattle, WA August 2006, $950
William Harkness Graduate Student Travel Award

Courses Taught

†*Multiple Sections*

(Final enrollment numbers given in parentheses. The course numbers and titles stated were those used when I was the instructor of record.)

University of Kentucky

STA 281: Probability and Statistics Using Interactive Computer Techniques 3.0 Credits
Spring 2018 (?)

STA 621: Nonparametric Inference 3.0 Credits
Fall 2016 (10)

STA 643: Advanced Experimental Design 3.0 Credits
Fall 2015 (11), 2017 (14)

STA 648: Regression Methods 4.0 Credits
Spring 2017 (5)

STA 649: Design of Experiments 4.0 Credits
Spring 2018 (?)

STA 695: Special Topics in Statistical Theory 1.0 Credit
Topic: Applied Mixture Modeling and Model-Based Clustering
Fall 2017 (1)

STA 715: Readings in Statistics & Probability 3.0 Credits
Topic: Novel Tools for the Analysis of Time Series Data
Spring 2018 (1)
Topic: Flexible Modeling of Zero-Inflated Data
Fall 2017 (1)
Topic: Algorithms for Estimating Mixture Models and Measurement Error Models
Spring 2017 (1)
Topic: Zero-Inflated Poisson Regression Models
Spring 2017 (1)
Topic: Mixture Models and Measurement Error
Fall 2016 (1)
Topic: Semiparametric Approaches to Statistical Inference
Fall 2015 (1)

The Pennsylvania State University

STAT 200: Elementary Statistics 4.0 Credits
Summer 2004 (46)

MATH/STAT 318: Elementary Probability 3.0 Credits
Fall 2005 (31)

MATH/STAT 319: Applied Statistics in Science 3.0 Credits
Spring 2006 (32)

MATH/STAT 418: Probability 3.0 Credits
Spring 2005 (25)

STAT 480: Introduction to Statistical Programming Packages 1.0 Credit
Summer 2003 (12), 2004 (10), 2005 (11)

STAT 501: Regression Methods 3.0 Credits
Spring 2008 (27), 2009 (27†), 2010 (57†), 2011 (31), 2012 (31), 2013 (31)
Summer 2008 (23), 2009 (24), 2012 (27)
Fall 2008 (46†), 2009 (71†), 2010 (25), 2011 (44†), 2013 (28)

COURSE DEVELOPMENT

University of Kentucky

STA 648: Regression Methods 4.0 Credits

- (First offering in Spring 2017.) This course, which I developed for the online Master of Applied Statistics program, covers topics such as simple and multiple linear regression, residual diagnostics, model selection, nonparametric regression, and regression models with categorical responses. I recorded about 25 hours of material consisting of lightboard presentations, annotated whiteboard screencasts, and computing labs demonstrating R using RStudio.

STA 649: Design of Experiments 4.0 Credits

- (First offering in Spring 2018.) This course, which I developed for the online Master of Applied Statistics program, covers topics such as common experimental designs, ANOVA, ANCOVA, multiple comparisons, and response surface methodology. I recorded about 22 hours of material consisting of lightboard presentations and computing labs demonstrating R using RStudio.

STA 651: Advanced Programming with R 1.0 Credit

- (First offering in Summer 2017.) This course, which I developed for the online Master of Applied Statistics program, covers programming topics in R, such as handling various facets of data structures, producing simple and advanced graphics, control structures, memory allocation, and components of simulation studies. I recorded about 10 hours of material consisting of computing labs demonstrating R using RStudio.

ADVISING AND SUPERVISION

Doctoral Students Advised/Co-Advised

- Kedai Cheng
- Eric Roemmele (Co-Advised with R. Kryscio)
- Xiaoqiong Fang (Co-Advised with M. Zhou)

Doctoral Committee Member

- Chenlu Ke (Statistics)
- Hao Zhou (Quantitative and Psychometric Methods)
- Ya Qi (Statistics)
- Liangdong Fan (Statistics)
- Sisheng Liu (Statistics, Defended: July, 2017)
- Robert Hartley (Economics, Defended: July, 2017)
- Meng Qi (Statistics, Defended: May, 2016)

Supervision of Research Assistants

- Kedai Cheng (Ph.D. Student, Statistics); Supported by: Department of Statistics (Fall 2017)
- Yue Cui (Ph.D. Student, Statistics); Supported by: Department of Statistics (Summer 2016)
- Jiaying Weng (Ph.D. Student, Statistics); Supported by: Department of Statistics (Summer 2016), SES - 1562503 (Fall 2016 - Spring 2017)
- Chenlu Ke (Ph.D. Student, Statistics); Supported by: Department of Statistics (Summer 2015)
- Xiaoxue Zeng (M.S. Student, Statistics); Supported by: Department of Statistics (Summer 2015)
- Teng Huang (M.S. Student, Statistics); Supported by: Department of Statistics (Summer 2015)
- Dainan Sang (M.S. Student, Statistics); Supported by: Department of Statistics (Summer 2015)
- Liangdong Fan (Ph.D. Students, Statistics); Supported by: Department of Statistics (Summer 2015)

- Shihong Zhu (Ph.D. Student, Statistics); Supported by: UKRF 201502111631 (Spring 2015)

Professional Activities

Reviewer for Funding Agencies

- Stage 1 Panel Reviewer for Science Foundation Ireland (SFI) Investigators Porgramme (2015)

Book Proposal Reviewer

- Chapman & Hall/CRC Press (2015)

Journal Referee

- *Advances in Research* (2016)
- *Advances in Statistical Analysis* (2010)
- *The American Statistician* (2010, 2016 (2))
- *The Annals of Applied Statistics* (2014)
- *Applied Mathematical Modelling* (2017)
- *Asian Research Journal of Mathematics* (2017)
- *Biometrical Journal* (2016)
- *Biometrics* (2013, 2015, 2016)
- *Colombian Journal of Statistics* (2016)
- *Communications in Statistics - Simulation and Computation* (2013, 2014, 2015)
- *Communications in Statistics - Theory and Methods* (2009, 2014 (2), 2015, 2017)
- *Computational Statistics* (2017)
- *Computational Statistics and Data Analysis* (2014, 2015 (2))
- *Electronic Journal of Statistics* (2013 (2))
- *Entropy* (2011, 2015, 2016)
- *Far East Journal of Applied Mathematics* (2013)
- *IBM Journal of Research and Development* (2015)
- *IEEE Transactions on Knowledge and Data Engineering* (2014)
- *ISPRS International Journal of Geo-Information* (2016)
- *Journal of Agricultural, Biological, and Environmental Statistics* (2017 (2))
- *Journal of Advances in Mathematics and Computer Science* (2017 (2))
- *Journal of Algorithms and Optimization* (2015)
- *Journal of Applied Statistics* (2012, 2013, 2015 (2))
- *Journal of Big Data* (2017)
- *Journal of Biology and Nature* (2017)
- *Journal of Biometrics and Biostatistics* (2015)
- *Journal of Business and Economic Statistics* (2013)
- *Journal of Computational and Graphical Statistics* (2015, 2016, 2017)
- *Journal of Computational Methods in Sciences and Engineering* (2016)
- *Journal of Educational and Behavioral Statistics* (2013)
- *Journal of Hydrology* (2013)
- *Journal of Nonparametric Statistics* (2012)
- *Journal of Quantitative Analysis of Sports* (2016)
- *Journal of Statistical Computation and Simulation* (2012, 2015 (2), 2016, 2017)
- *Journal of Statistical Software* (2017)
- *Materials* (2016)
- *Mathematical and Computational Applications* (2016)
- *Modern Stochastics: Theory and Applications* (2017)
- *Neural Computation* (2012)
- *Quality Engineering* (2016)
- *The R Journal* (2015, 2017)
- *Scandinavian Journal of Statistics* (2015, 2016, 2017)
- *Statistica Sinica* (2014, 2015)

- *Statistics and Computing* (2011)
- *Statistics & Probability Letters* (2014)
- *Wiley Interdisciplinary Reviews: Computational Statistics* (2012)

Ad Hoc Reviewer
- Reviewer for 2014-2015 ASA/NSF/Census Research Fellowship Proposal
- Statistical Reviewer for Finalists of 2012 U.S. Census Return Rate Challenge on Kaggle

Committee Member
- Kentucky Research Data Center (KRDC) Advisory Board Member (2016 - Present)
- University of Kentucky Department of Statistics: M.S. Examination in Theory Committee (2016)
- University of Kentucky Department of Statistics: Computations and Technology Committee (2015 - Present)
- University of Kentucky College of Arts & Sciences: IT-Enabled Research/Scholarship Committee (2015 - Present)
- University of Kentucky Department of Statistics: Minutes Recorder (2014 - Present)
- University of Kentucky Department of Statistics: Online Master of Applied Statistics Program Committee (2014 - Present)
- Bechtel Bettis, Inc.: Technical Outreach Committee (2008 - 2010)
- Penn State Statistics Department: Peer Advisor (2004 - 2006)
- Penn State Statistics Department: Student Organized Seminars Chair (2004 - 2006)

Conference Chair
- Session Chair for "SPEED: Advances in Nonparametric Statistics," JSM 2016, Chicago, IL. August 1st, 2016.

Affiliations and Professional Memberships
- International Society for Nonparametric Statistics (2016)
- American Statistical Association (2005 - Present)
- Institute of Mathematical Statistics (2005 - Present)
- University of Michigan Mathematical Society (2001 - 2002)

Other
- Authored or co-authored nine CONFIDENTIAL reports for the Naval Nuclear Propulsion Program using the following statistical methods: acceptance sampling plans, ANOVA, extreme value analysis, gauge R & R studies, multiple comparisons, nonparametric smoothing, regression modeling, statistical process controls, and tolerance intervals. (2008-2011)
- Wrote solutions to 100 problems in the solutions manual for: J. M. Utts and R. F. Heckard (2006). *Mind on Statistics, 3rd edition*. California: Duxbury. (uncredited)

Academic Awards and Honors

Professional Level
- Wethington Award: University of Kentucky College of Arts & Sciences (2015, 2016)

Graduate Level
- Research Assistantship (Summer 2005, Summer 2006 – Summer 2007)
- Eberly College of Science Graduate Fellowship (Fall 2002 – Spring 2003, Fall 2006)
- Teaching Assistantship (Fall 2002 – Spring 2006)

Undergraduate Level
- Ford Citizens Scholarship Fund of America (Fall 1998 – Spring 2002)
- Regents Scholarship (Fall 1998 – Spring 1999)

- Kiwanis Club Academic Scholarship (Fall 1998 – Spring 1999)

COMPUTER AND LANGUAGE SKILLS

◇ Very proficient with LaTeX, Microsoft Office, Minitab, NCSS/PASS, and R/S-PLUS.
◇ Proficient with @RISK, Mathcad, SAS, SPSS, and WinBUGS.
◇ Familiarity with C, JMP, Maple, Mathematica, and MATLAB.
◇ Proficient with Macintosh, UNIX/Linux, and Windows operating systems.
◇ Minor understanding of conversational/written German and Greek.

ACADEMIC REFERENCES

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