Byran J. Smucker

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Citizenship USA

Research Interests The design and analysis of experiments, including optimal design, model-robust design, supersaturated experiments, mixture experiments, response surface methods, and regularized regression; applications of experimental design; subsampling to analyze large datasets; applied predictive modeling

Academic Appointments

Miami University, Oxford, OH USA

Associate Professor **July 2016 to present**

Sattler College, Boston, MA USA

Adjunct Professor (non-resident) **August 2018 to present**

Center for Visual Sciences at Miami University

Member **October 2019 to present**

Miami University, Oxford, OH USA

Assistant Professor **August 2010 to June 2016**

The Pennsylvania State University, State College, PA USA

Research Assistant, Statistical Consulting Center **August 2007 to July 2009**

Instructor **Summer 2006, 2007**

Teaching Assistant **2005-2006, 2006-2007 academic years**

Oregon State University, Corvallis, OR USA

Education

The Pennsylvania State University, State College, PA USA

Ph.D., Statistics and Operations Research, August 2010

- Dissertation Topic: Model-Robust and Multiresponse Experimental Design
- Advisor: Enrique del Castillo
- Committee Chair: James Rosenberger

M.S., Statistics and Operations Research, December 2007

- Thesis Topic: Calculating Cell Bounds in Contingency Tables Based on Conditional Frequencies
- Advisor: Aleksandra Slavković
- Area of Study: Statistical Disclosure Limitation

Oregon State University, Corvallis, OR USA

B.S., Industrial Engineering, March 2005

- *Summa cum Laude*

Submitted / In Revision / In Process

Smucker, B.J., Stevens, N.T., Asscher, J., and Goos, P. (2023+). Profiles in the Teaching of Experimental Design and Analysis. Resubmitted.

Peer-reviewed Articles

Tsissios, G., Theodoroudis-Rapp, G., Chen, W., Sallese, A., Smucker, B., Ernst, L., Chen, J., Xu, Y., Ratvasky, S., Wang, H., and Del Rio-Tsonis, K. (2023+). Characterizing the lens regeneration process in *Pleurodeles waltl*. Accepted to *Differentiation*.

Tangeman, J.A., Perez-Estrada, J.R., Van Zeeland, E., Liu, L., Danciutiu, A., Grajales-Esquivel, E., Smucker, B., Lian, C., and Del Rio-Tsonis, K. (2022). A stage-specific OTX2 regulatory network and maturation-associated gene programs are inherent barriers to RPE neural competency. *Frontiers in Cell and Developmental Biology, section Molecular and Cellular Pathology*, 10.3389/fcell.2022.875155.

Zhang, J., Kong, Y., Bailer, A.J., Zhu, Z., and Smucker, B.J. (2022). Incorporating Historical Data when Determining Sample Size Requirements for Aquatic Toxicity Experiments. *Journal of Agricultural, Biological, and Environmental Statistics*, 27:544-561.

Snyder[1], M. and Smucker, B.J. (2022). Metamodel Optimization of a Complex, Rural-Urban Emergency Medical Services System. *Simulation Modelling Practice and Theory*, 148, 10.1016/j.simpat.2022.102526.

Weese, M.L., Stallrich, J.W., Smucker, B.J., and Edwards, D.J. (2021). Strategies for Supersaturated Screening: Group Orthogonal and Var(s+) Designs. *Technometrics*, 63:4, 443-455, DOI: 10.1080/00401706.2020.1850529.

Chen, W., Tsissios, G., Sallese, A., Smucker, B., Nguyen, A.-T., Chen, J., Wang, H., and Del Rio-Tsonis, K. (2021). In vivo imaging of newt lens regeneration: Novel insights into the regeneration process. *Translational Vision Science & Technology*, 10:10, DOI: https://doi.org/10.1167/tvst.10.10.4.

Smucker, B.J., Edwards, D.J., and Weese, M.L. (2021). Response Surface Models: To Reduce or Not to Reduce?, *Journal of Quality Technology*, 53:2, 197-216, DOI: 10.1080/00224065.2019.1705208.

Kristoffersen[2], P. and Smucker, B.J. (2020). Model-robust design of mixture experiments. *Quality Engineering*. 32(4):663-675.

Yousefi, A.M., Smucker, B.J., Naber, A.J., Wyrick, C.S., Shaw, C.H., Bennett, K., Szekely, S.E., and Focke, C.A. (2018). Controlling the extrudate swell in melt extrusion additive manufacturing of 3D scaffolds: a designed experiment. *Journal of Biomaterials Science, Polymer Edition*. 29(3):195-216.

Weese, M.L., Edwards, D.J., and Smucker, B.J. (2017). A Criterion for Constructing Powerful Supersaturated Designs when Effect Directions are Known. *Journal of Quality Technology*. 49(3):265-277.

Smucker, B.J., Jensen, W., Wu[1], Z., and Wang[1], B. (2017). Robustness of Classical and Optimal Designs to Missing Observations. *Computational Statistics & Data Analysis*. 113:251-260.

[1]STA graduate student, advisee
[2]Non-STA graduate student, advisee

Ockuly[1], R., Weese, M.L., Smucker, B.J., Edwards, D.J, and Chang[3], L. (2017). Response Surface Experiments: A Meta-Analysis. *Chemometrics and Intelligent Laboratory Systems*. 164:64-75.

Uth, N., Mueller, J., Smucker, B., and Yousefi, A.-M. (2017). Validation of Scaffold Design Optimization in Bone Tissue Engineering: Finite Element Modeling versus Designed Experiments. *Biofabrication*. 9(1).

Cao, Y., Smucker, B.J., and Robinson, T.J. (2016). A Hybrid Elitist Pareto-based Coordinate Exchange Algorithm for Constructing Multi-Criterion Optimal Experimental Designs. *Statistics & Computing*. 1-15.

Smucker, B.J. and Bailer, A.J. (2015). Beyond Normal: Preparing Undergraduates for the Work Force in a Statistical Consulting Capstone. *The American Statistician*. 69(4):300-306.

Zhang[1], X., Smucker, B.J., and Woffington, J. (2015). Statistics and Show Business: Shakespeare Meets Predictive Analytics. *Chance*. 28.2:4-12.

Smucker, B.J. and Drew[1], N.M. (2015). Approximate Model Spaces for Model-Robust Experimental Design. *Technometrics*. 57(1):54-63.

Cao, Y., Smucker, B.J., and Robinson, T.J. (2015). On Using the Hypervolume Indicator to Compare Pareto Fronts: Applications to Multi-Criteria Optimal Experimental Design. *Journal of Statistical Planning & Inference*. 160:60–74.

Weese, M.L., Smucker, B.J., and Edwards, D.J. (2015). Searching for Powerful Supersaturated Designs. *Journal of Quality Technology*. 47(1):66–84.

Keane, B., Parsons, S., Smucker, B.J., and Solomon, N.G. (2014). Length polymorphism at the *avpr1a* locus is correlated with male reproductive behavior in a natural population of prairie voles (Microtus ochrogaster). *Behavioral Ecology and Sociobiology*. 68(12):1951–1964.

Webb[1], J., Smucker, B.J., and Bailer, A.J. (2014). Selecting the best design for nonstandard toxicology experiments. *Environmental Toxicology and Chemistry*. 33(10):2399–2406.

Wright, S.E. and Smucker, B.J. (2014). Rapid calculation of exact cell bounds for contingency tables from conditional frequencies. *Computers and Operations Research*. 52:113–122.

Wright, S.E. and Smucker, B.J. (2014). An Intuitive Formulation and Solution of the Exact Cell-Bounding Problem for Contingency Tables of Conditional Frequencies. *Journal of Privacy and Confidentiality*. 5(2):133–156.

Smucker, B.J., del Castillo, E., and Rosenberger, J.L. (2012). Model-Robust Two-Level Designs Using Coordinate Exchange Algorithms and a Maximin Criterion. *Technometrics*. 54(4):367–375.

Smucker, B.J., del Castillo, E., and Rosenberger, J.L. (2012). Model-Robust Designs for Split Plot Experiments. *Computational Statistics and Data Analysis*. 56(12):4111–4121.

[3]STA undergraduate student

Smucker, B.J., Slavković, A., and Zhu, X. (2012). Cell Bounds in k-way Tables Given Conditional Frequencies. *Journal of Official Statistics*. 28(1):121–140.

Smucker, B.J., del Castillo, E., and Rosenberger, J. L. (2011). Exchange Algorithms for Constructing Model-Robust Experimental Designs. *Journal of Quality Technology*, 43(1):28–42.

Smucker, B.J., Lorantas, R.M., and Rosenberger, J. L. (2010). Correcting Bias Introduced by Aerial Counts in Angler Effort Estimation. *North American Journal of Fisheries Management*, 30(4):1051–1061.

Logendran, R., McDonell, B., and Smucker, B. (2007). Scheduling unrelated parallel machines with sequence-dependent setups. *Computers and Operations Research*, 34(11):3420–3438.

Peer-reviewed Conference Proceedings or Presentation

Liu, C. and Smucker, B.J. (2020). Leveraging Methods for Subsampling: Towards a Realistic Evaluation. Presented at *Symposium on Statistics & Data Science*, Pittsburgh, June 3-6. Peer-reviewed abstract.

Yousefi, A.-M., Szekely, S., Shaw, C., Reichenbach, K., Naber, A., Janney, C., Focke, C., Smucker, B. (2015). Modulating the Porosity and Modulus of Tissue Engineering Scaffolds in Fused Deposition Modeling. Proceedings of *SEP-ANTEC* Conference, Orlando, FL, March 23–25.

Smucker, B. and Slavković, A. B. (2008). Cell bounds in two-way contingency tables based on conditional frequencies. In Domingo-Ferrer, J. and Saygin, Y., editors, *Privacy in Statistical Databases 2008 Lecture Notes in Computer Science*, volume 5262, pages 64–76. Springer-Verlag, Berlin Heidelberg.

Invited Columns and Discussions

Smucker, B., Krzywinski, M., and Altman, N. (2019). Points of Significance: Two-level factorial experiments. *Nature Methods*, 16:211-212.

Smucker, B., Krzywinski, M., and Altman, N. (2018). Points of Significance: Optimal experimental design. *Nature Methods*, 15(8):559-560.

Smucker, B.J. (2012). Discussion of "Optimum design of experiments for statistical inference" by Gilmour and Trinca. *Journal of the Royal Statistical Society: Series C (Applied Statistics)*. 61(3):345–401.

Invited Presentations/Panels

Panelist for Invited Session "Innovative Experimental Design Education: Active Learning, Data Science, and Computer-Generated Designs", Joint Statistical Meetings, Washington D.C. August 2022.

"The State of Supersaturated Design and Analysis", Quality and Productivity Research Conference, San Francisco State University. June 2022. Talk delivered virtually.

"Response Surface Models: To Reduce or Not to Reduce?", Quality and Productivity Research Conference. July 2021. Talk delivered virtually.

"Meta-Model Optimization of Simulated EMS Systems: A Case of Statistical Engineering", World Statistics Conference. July 2021. Talk delivered virtually.

"Experimental design ideas in data science: an overview." Joint Statistical Meetings (virtual conference). August 2020.

"An Introduction to Split-Plot Experiments with Application to Bone Tissue Engineering." American Chemical Society Central Regional Meeting, Midland, MI. June 2019.

"Model-Robust Mixture Designs." Spring Research Conference, Blacksburg, VA. May, 2019.

"The Construction of Missing-Robust Experimental Designs and their Comparison to Classical and Optimal Designs." The Design and Analysis of Experiments (DAE 2017) Conference, UCLA. October 2017.

"Evaluating and Constructing Designs for Robustness to Unusable Observations." IFPAC-2017, North Bethesda, MD. March 2017.

"Model-Robust Mixture Experiments." International Conference on Design of Experiments, Memphis, TN. May 2016.

"Generating and Comparing Pareto Fronts of Experiment Designs to Simultaneously Account for Multiple Experimental Objectives." Designed Experiments: Recent Advances in Methods and Applications (DEMA 2015), Sydney, Australia. December 2015.

"Generating and Comparing Pareto Fronts of Experiment Designs to Simultaneously Account for Multiple Experimental Objectives." INFORMS Annual Meeting, Philadelphia. November 2015.

"Approximate Model Spaces for Model-Robust Experiment Design." Fall Technical Conference, Richmond, VA (*Technometrics* invited session). October 2014.

"Approximate Model Spaces for Model-Robust Experiment Design." European Network of Business and Industrial Statistics, 2014 (ENBIS-14), Johannes Kepler Universität, Linz, Austria. September 2014.

"Approximate Model Spaces for Model-Robust Experiment Design." Design and Analysis of Experiments 2012, University of Georgia. October 2012.

"Algorithms and Model Spaces for Model-Robust Experiment Design." Spring Research Conference, Harvard (*Journal of Quality Technology* Invited Session). June 2012.

Department or Organization Presentations

"Using Statistics to Predict: Politics, Sports, Shakespeare, and ... Business!" BASF, Florham Park, NJ. March 2016.

"Powerful Supersaturated Designs when Effect Directions are Known." BERD Seminar, Cincinnati Children's Center for Clinical & Transitional Science & Training. February 2016.

"Approximate Model Spaces for Model-Robust Experiment Design." Department of Statistics and Operations Research. Virginia Commonwealth University. March 2014.

"Candidate-List-Free Exchange Algorithms for Exact, Model-Robust Designs." Proctor & Gamble, Mason, OH. January 2011.

"Model-Robust Experimental Design: Beyond Completely Randomized Experiments" U.S. Census Bureau. May 2010.

"A Maximin Model-Robust Exchange Algorithm and its Generalization." Alumni Workshop, Penn State University. March 2010.

"Exchange Algorithms for Model-Robust, Exact Experimental Designs." Miami University at Oxford, OH. March 2010.

Contributed Presentations

"Predictive Response Surface Models: To Reduce or Not to Reduce?" Fall Technical Conference, West Palm Beach. October 2018.

"Predictive Response Surface Models: To Reduce or Not to Reduce?" Joint Statistical Meetings, Vancouver. August 2018.

"A Meta Analysis of Response Surface Experiments." Fall Technical Conference, Minneapolis. October 2016.

"A Meta Analysis of Response Surface Experiments." Joint Statistical Meetings, Chicago. August 2016.

"Generating and Comparing Pareto Fronts of Experiment Designs to Simultaneously Account for Multiple Experimental Objectives." Joint Statistical Meetings, Seattle. August 2015.

"Approximate Model Spaces for Model-Robust Experiment Design." Fall Technical Conference, San Antonio. October 2013.

"Fast Calculation of Exact Contingency Table Cell Bounds Given Conditional Frequencies." Joint Statistical Meetings, Montreal. August, 2013.

"Powerful Supersaturated Designs." Joint Statistical Meetings, San Diego. July 2012. Topic-contributed.

"Candidate-List-Free Exchange Algorithms for Two-Level Model-Robust Designs." Fall Technical Conference, Kansas City. October 2011.

"Candidate-List-Free Exchange Algorithms for Exact, Model-Robust Designs." International Conference on Design of Experiments, Memphis, TN. May 2011.

"Correcting Bias Introduced by Aerial Counts in Angler Effort Estimation." American Fisheries Society Annual Meeting, Pittsburgh. Finalist (out of 19) for Best Student Paper. September 2010.

"Maximin Model-Robust Designs for Split-Plot Experiments." Joint Statistical Meetings, Vancouver. August 2010.

"A Maximin Model-Robust Exchange Algorithm and its Generalization." Joint Research Conference, NIST, Gaithersburg, MD. May 2010.

"Multiresponse Exchange Algorithms for Model-Robust Experimental Design." Fall Technical Conference, Indianapolis. October 2009.

"Cell bounds in two-way contingency tables based on conditional frequencies." Privacy and Statistical Databases, Istanbul. September 2008.

"Cell bounds in two-way contingency tables based on conditional frequencies." Joint Statistical Meetings, Denver. August 2008.

External Funding

National Institutes of Health, "On Determinants of Lens Regeneration", $1,083,750; 2017-2020, PI: Katia del Rio-Tsonis. Statistical personnel, providing statistical advice, design, and analysis.

U.S. Census Bureau Dissertation Fellowship, 2009-2010; $50,000.

Internal Funding and Travel Grants

Miami Global Travel Fund, $500 for trip to Stu Hunter Conference in Induno Olona, Italy. February 2019.

Miami University 2018 College of Arts and Science Dean's Scholar advisor for Yuexi Wang and Le Chang. $750 + $1,500 for the students. Funded.

Miami University Center for Analytics & Data Science 2017 Summer Research Fellowship. "Model Selection Using Approximate Leverage Methods for Big Data Regression". $2,000. Funded.

Faculty research grant, awarded for summer 2011. Miami University, Committee on Faculty Research. $6200.

Summer research grant for new tenure-track faculty, awarded for summer 2011. Miami University, College of Arts and Sciences, deferred to summer 2012. $5000.

Registration scholarship for DEMA-15 conference in Sydney, Australia; support to attend the Stu Hunter 2015 conference in Leuven, Belgium, from Miami University's Office of International Education; support to attend and present at ENBIS-14 in Linz, Austria, from Miami University's Office of International Education; support to attend and present at JSM 2013 from Miami University's Office of International Education; support to attend and present at Design and Analysis of Experiments 2012 conference, Athens, GA; Early Career Grant from the Statistics Division of the American Society of Quality to attend the 2011 Fall Technical Conference, Kansas City, MO; International Conference on Design of Experiments, Memphis, TN, May 2011; Fall Technical Conference Student Travel Grant, American Society for Quality, October 2009.

Teaching

Miami University

STA 301, Applied Statistics	Spring 2016
STA 363, Regression and Design of Experiments	Spring 2011
STA 401/501, Introduction to Probability	Fall 2010-2012, 2015, 2016; Spring 2011, 2012, 2015
STA 463/563, Regression Analysis	Fall 2013-2015, 2017; Spring 2013
STA 466/566, Experimental Design Methods	Spring 2015-2018
STA 475, Data Analysis Practicum	Spring 2012, Spring 2013
STA 660, Practicum in Data Analysis	Fall 2013, Fall 2016, Fall 2017

STA 686, Qual Control and Industrial Stats Fall 2011, 2012, 2014; Spring 2017

The Pennsylvania State University

STAT 200, Elementary Statistics. Summers 2006, 2007.

Advising

Master's advisor (STA unless otherwise noted)

- Xinyuan Liu – in progress. Topic: Predictive Models Using Leverage-Based Subsampling Methods for Big Data Regression
- Kaitlyn Harrison – in progress. Topic: Analysis of Donor Data from Miami's Advancement Office.
- Eric Ansong – in progress. Topic: Coordinate Exchange Algorithms for Regularization-Based Supersaturated Designs.
- Stefan Nguyen – in progress. Topic: Bayesian Analysis of Police Shootings in Several American Cities Using an Informative Prior.
- Charlie Liu (Department of Mathematics) – in progress. Topic: Approximate Leveraging Algorithms for Model-Building.
- Nick Darby (2018) Title: Identifying Natural Behavioral Clusters in Heroes of the Storm.
- Chelsea Hillenburg (2017). Title: Predicting and Evaluating Emergency Response Times in Rural Minnesota.
- Mengdi Fu (co-advised with Maria Weese) (2017). Title: A Simple Enhancement to the Gauss-Dantzig Selector with Application to Supersaturated Experiments.
- Becky Ockuly (co-advising with Maria Weese; finished project in 2016). Title: Response Surface Experiments: A Meta-Analysis.
- Joe Palascak (2016). Title: Optimizing Designs for the Arbitrary Factorial Term Model Space.
- Nicholas Uth (Department of Chemical, Paper and Biomedical Engineering; co-advising with Amy Yousefi; 2016). Title: Computational Design and Optimization of Bone Tissue Engineering Scaffold Topology.
- Paul Kristoffersen (Department of Mathematics) (2015). Title: "Model-robust Mixture Designs"
- Mike LaTour (2014). Title: "Statistical Analysis of Patron Preferences and Resource Utilization at B.E.S.T. Library"
- Zichen Wu (2014). Title: "Using Coordinate Exchange Algorithm to Construct Designs Robust to Unusable Observations"
- Bo Wang (2014). Title: "Impact of Missing Data on D-efficiency and I-efficiency of Several Important Designs"
- Xinping Zhang (2013). Title: "Forecasting ticket sales for Cincinnati Shakespeare Company"
- Lisa Werwinski (co-advisor) (2013). Title: "Predicting Academic and Competitive Success in the Sports of Football and Women's Swimming and Diving at Football Bowl Subdivision (FBS) Institutions"
- Jennifer Webb (2013). Title: "Design in Toxicology for Unconventional Experiments"
- Traci Blonquist (2012). Title: "Exploring A Mixture of Regressions using regmixEM in mixtools"
- Nathan Drew (2012). Title: "On the Enhanced Stochastic Evolutionary Algorithm and the Construction of Approximate Model Spaces for Model-Robust Experimental Designs"

Undergraduate research mentor

- Le Chang (2017). Topic: Leverage-based subsampling for big data regression.
- Yuexi Wang (2017). Topic: Leverage-based subsampling for big data regression.

- Le Chang (2016). Topic: Response Surface Experiments: A Meta-Analysis.

PhD committee member

- Yongtao Cao (University of Wyoming, Department of Statistics) (2014). Title: "Multiple-criteria Optimal Experimental Design – Algorithms and Applications"

Master's committee member (STA unless otherwise noted)

- Li Ping (2017)
- Sambed Adhikari (2016)
- Travis Sellers (2016)
- Gejun Zhu (2016)
- Zheng Zhu (2016)
- Ryan Brunton (2015)
- Pamela Castricone (2015)
- Cunyang Xia (2014)
- Qing Ji (2013)
- Pradnya Patil (2012)
- Geng Chen (2011)

Service

To Miami University

Committees and Duties

- Statistics Department Schedule (2017-present)
- Search Committee, Political Science Department, Big Data / American Politics position (2017-2018)
- Mechanical and Manufacturing Engineering Department Review Committee (2017)
- Search Committee, Statistics Department (2017)
- Promotion and Tenure Committee Chair, Department of Statistics (2017)
- Promotion and Tenure Committee, Department of Statistics (2017)
- Search Committee, Miami-Middletown Statistics Position (2016-2017)
- Undergraduate Research Committee, Miami University (2015-2016)
- Petitions Sub-Committee of Graduate Council, Miami University (2013-2015)
- Search Committee, Dept. of Statistics (2012-2013; 2014-2015)
- Colloquium Committee, Dept. of Statistics (2010-2016)
- Comprehensive Exam Committee, Department of Statistics (2014-2017)

Co-director (with Doug Noe and Bob Davis) of Statistics in Sports conference at Miami, Fall 2012

To the profession

Editorial

- *Journal of Amish and Plain Anabaptist Studies*, Editorial Board member. 2020-present.
- *Quality Engineering*, Editorial Review Board member. 2019-present.
- Co-Editor of *Quality Engineering* "Open Challenges in Industrial Statistics". 2017-present. Recurring column that publishes research problems posed by practitioners as well as solutions from researchers.

Elected Chair, Section on the Physical and Engineering Sciences, for 2019.

2017 elected JSM Program Chair, Section on the Physical and Engineering Sciences. Served as Program Chair-Elect for 2016.

Invited session organizer, "The Extraordinary Power of Designed Experiments", JSM 2016.

Co-developed the Industrial Statistics Virtual Collaboratory, an online space to encourage collaboration between industry and academia (2016-2017).

Chair of contributed program, member of program committee, and session organizer. 2015 Spring Research Conference, Cincinnati. 2014-2015.

Continuing Education Chair for American Statistical Association's Section on Physical and Engineering Statistics (2012-2015).

Session organizer and chair of topic-contributed session, "Model-Robust Design: Why Not More Impact?", at JSM 2012 in San Diego.

Journal Reviewer: *Canadian Journal of Statistics*; *Communications in Statistics - Theory and Methods*; *Computational Statistics & Data Analysis*; *European Journal of Operational Research*; *Journal of Multivariate Analysis*; *Journal of Quality Technology*; *Journal of Statistical Computation & Simulation*; *PLOS ONE*; *Quality and Reliability Engineering International*; *Quality Engineering*; *Science of the Total Environment*; *Statistics & Computing*; *Statistical Methodology*; *Technometrics*; *TEST*.

Reviewer for internal proposal at the University of Central Oklahoma (2016).

External reviewer for Promotion & Tenure (2017).

Professional Activities

Co-organizer (with Dennis Lin) of experimental design study group/seminar at Penn State, Fall 2009

Membership in Profession Organizations

- *American Statistical Association*
- *International Statistical Institute* and the *International Society for Business and Industrial Statistics*
- *Amish and Plain Anabaptist Studies Association*

Leader of Student Advisory Committee, Penn State University, 2009

Honors

2022 Lloyd S. Nelson Award, for "Response surface models: To reduce or not to reduce?" (with David Edwards and Maria Weese), given to the paper appearing in the 2021 *Journal of Quality Technology* with the "greatest immediate impact to practitioners."

Runner-up Outstanding Presentation from the American Statistical Association's Section on Physical and Engineering Sciences for contributed talk, "Predictive Response Surface Models: To Reduce or Not to Reduce?", at the 2018 Joint Statistical Meetings.

Honorable Mention Presentation Award from the American Statistical Association's Section on Physical and Engineering Sciences for contributed talk, "A Meta-Analysis of Response Surface Studies", at the 2016 Joint Statistical Meetings.

Elected Member of the International Statistical Institute (2016).

2015 Miami University Junior Faculty Distinguished Scholar Award. September, 2015.

Honorable Mention Presentation Award from the American Statistical Association's Section on Physical and Engineering Sciences for contributed talk at the 2010 Joint

Statistical Meetings.

Finalist (one of five) for 2009 Shewell Award for best presentation at the Fall Technical Conference, for talk entitled "Multiresponse Exchange Algorithms for Model-Robust Experimental Design".

Student Paper Competition winner (one of five), 2008, for "Calculating Cell Bounds Based on Conditional Frequencies"; contest sponsored jointly by the Social Statistics, Government Statistics, and Survey Research Methods sections of the American Statistical Association; $800.

Top score, Department of Statistics Master's Qualifying Exam Applied Section, May 2006.

First Place in class of Industrial and Manufacturing Engineering students at Oregon State for Senior Project, "Grass Seed Crop Mix Optimization" with Kyle Erickson and Jenni Barnes.

C. E. Boucher Memorial Scholarship, 2004-2005 academic year.

Garrard Peters Memorial Scholarship, 2004-2005 academic year; $400.