Maria L. Weese

Contact Information

800 E. High Street
Farmer School of Business (Office: 2012)
Oxford, OH 45056

Voice: (513) 529-0591
Email: weeseml@miamioh.edu
Google Scholar: `https://goo.gl/92aQAn`

Research Interests

Analysis based Design, Data Stream Monitoring, Screening Design, Optimal Supersaturated Design

Education

University of Tennessee, Knoxville, TN

Ph.D., Statistics, May 2010

M.S., Statistics, May 2006

Virginia Tech, Blacksburg, VA

B.S., Chemical Engineering, Minor: Chemistry, May, 2001

Academic Experience

Miami University, Department of Information Systems & Analytics

Professor **July 2026 - present**
Associate Professor **July 2020 - June 2026**
Richard T. Farmer Assistant Professor **July 2018 - June 2020**
Assistant Professor **July 2014 - June 2018**
Lecturer/Clinical Faculty **July 2012 - June 2014**
Visiting Assistant Professor **July 2010 - June 2012**

Miami University, Department of Statistics

Affiliate Faculty Member **May 2019 - present**

University of Tennessee, Department of Statistics, Operations and Management Science

Graduate Teaching Associate **Aug. 2006 - May 2010**

University of Tennessee, Statistical Consulting Center

Statistical Consultant **May 2004 - July 2006**

Administrative Appointments

Miami University, Department of Information Systems & Analytics

Master of Science in Business Analytics Program Director **Jan. 2026 - present**

Professional Experience

Celanese Acetate, Celco Plant, Narrows, VA

Process Improvement Engineer II **July 2001 - May 2004**
Six Sigma Green Belt Certified

Publications

Weese, M.L., Smucker, B.J., & Edwards, D.J.. (2026) The use of cross validation in the analysis of designed experiments. *Accepted: Quality Engineering*

Smucker, B. J., Wright, S. E., Williams, I. [1], Page, R. C., Kiss, A. J., Silwal, S. B., **Weese, M.L.**, & Edwards, D. J.. (2025) Large Row-Constrained Supersaturated Designs for High-throughput Screening. *Biometrics*, *81*(4), 160. `https://doi.org/10.1093/biomtc/ujaf160`

Smucker, B.J., Edwards, D.J., & **Weese, M.L.** (2025) Supersaturated designs for main effects and two-factor interactions *Quality and Reliability Engineering International. 42*(1), 52-56. `https://doi.org/10.1002/qre.70071`

Stallrich, J. W., Young, K., **Weese, M.L.**, Smucker, B. J., & Edwards, D. J. (2025). An optimal design framework for lasso sign recovery. *Journal of the Royal Statistical Society: Series B (Statistical Methodology). 87*(5), 1457-1480. `https://doi.org/10.1093/jrsssb/qkaf026`.

Arafat, S.[1], Sun,N.[1], **Weese, M.L.**, & Martinez, W. G. (2025). Boundary peeling: An outlier detection method. *Quality Engineering*, *37*(4), 583-596. `https://doi.org/10.1080/08982112.2025.2469518`

Young, K.[1], **Weese, M.L.**, Stallrich, J.W., Smucker, B.J., & Edwards, D. J. (2024). A graphical comparison of screening designs using support recovery probabilities. *Journal of Quality Technology*, *56*(4), 355–368.

Cheng, Z, Aitha, M., Thomas, C.[1], Sturgill, A.[2], Fairweather, M.[2], Hu, A.[2], Bethel, C. Rivera, D., Dranchak, P., Thomas, P., Li, H., Feng, Q., Tao, K., Song, M., Sun, N.[2], Wang, S., Silwal, S.B., Page, R., Fast, W., Bonomo, R., **Weese, M.L.**, Martinez, Waldyn G., Inglese, J.,& Crowder, M. (2024). Machine learning models identify inhibitors of New Delhi metallo- -lactamase (NDM). *Journal of Chemical Information and Modeling*, *64*(10), 3977–3991. `https://doi.org/10.1021/acs.jcim.3c02015`

Lee, L.[1], L., **Weese, M.L.**, Martinez, W. G., & Jones-Farmer, L. A. (2022). Robustness of the one-class peeling method to the Gaussian kernel bandwidth. *Quality and Reliability Engineering International*, *38*(3), 1289–1301.

Lemkus, T.[1], Gotwalt, C., Ramsey, P.R., & **Weese, M.L.** (2021). Self-validated ensemble models for design of experiments. *Chemometrics and Intelligent Laboratory Systems*, *219*, 104439.

Weese, M.L., Stallrich, J. W., Smucker, B. J., & Edwards, D. J. (2021). Strategies for supersaturated screening: Group orthogonal and constrained Var(s) designs. *Technometrics*, *63*(4), 443–455.

Smucker, B.J., Edwards, D.J., & **Weese, M.L.** (2021). Response surface models: To reduce or not to reduce? *Journal of Quality Technology*, *53*(2), 197–216.
Lloyd S. Nelson Award for the greatest immediate impact to practitioners

Martinez, M.G., **Weese, M.L.**, & Jones-Farmer, L. A. (2020). A one-class peeling method for multivariate outlier detection with application to Phase I monitoring. *Quality and Reliability Engineering International*, *36*(4), 1272–1295.

Weese, M.L., Montgomery, D.J., & Ramsey, P. J. (2018). Analyzing definitive screening designs: Screening vs. prediction. *Applied Stochastic Models in Business and Industry*, *34*(2), 244–255.

Ockuly, R. [1], A., **Weese, M.L.**, Smucker, B.J., Edwards, D.J., & Chang, L. [2], (2017). Response surface experiments: A meta-analysis. *Chemometrics and Intelligent Laboratory Systems*, *164*, 64–75.

Weese, M.L., Edwards, D.J., & Smucker, B. J. (2017). A criterion for constructing powerful supersaturated designs when effect directions are known. *Journal of Quality Technology*, *49*(3), 265–277.

[1]Graduate Student
[2]Undergraduate Student

Campbell, J.T., & **Weese, M.L.** (2017). Compositional models and organizational research: Application of a mixture model to nonexperimental data in the context of CEO pay. *Organizational Research Methods*, *20*(1), 95–120.

Weese, M.L., Martinez, W.G., & Jones-Farmer, L. A. (2017). On the selection of the bandwidth parameter for the k-chart. *Quality and Reliability Engineering International*, *33*(7), 1527–1547.

Weese, M.L., Martinez, W.J., Megahed, F.M., & Jones-Farmer, L. A. (2016). Statistical learning methods applied to process monitoring: An overview and perspective. *Journal of Quality Technology*, *48*(1), 4–27.

Weese, M.L., Smucker, B. J.,& Edwards, D. J. (2015). Searching for powerful supersaturated designs. *Journal of Quality Technology*, *47*(1), 66–84.

Edwards, D. J., **Weese, M.L.**, & Palmer, G. M.[1], (2014). Comparing methods for design follow-up: Revisiting a metal cutting case study. *Applied Stochastic Models in Business and Industry*, *30*(4), 464–478.

Weese, M.L., & Leitnaker, M. G. (2012). Sequential experimentation for mixtures. *International Journal of Design of Experiments and Process Optimisation*, *3*(1), 33–42.

Other Publications

Weese, M.L. (2020) "Screening with Supersaturated Designs". Statistics Digest, ASQ Statistics Division Newsletter, (39)3:32-34

Peer Reviewed Conference Proceedings or Presentations

Nwankpa, J., Shan, Z., Merhout, J., Benamati, J., & **Weese, M.** (2023). A Social Engineering Research Partnership in Higher Education to Improve Information Security Education, Training, & Awareness (SETA) Programs. Presented at the 2023 Americas Conference on Information Systems (AMCIS 2023), August.

Campbell, T.C., Campbell, J.T., & **Weese, M.L.** (2014). The Balance of Power: Equity Ownership Structure in a Component-Mixture Model. 34th Strategic Management Society Annual International Conference: Madrid, Spain, September.

Invited Presentations

Weese, M.L., Smucker, B.J., & Edwards, D.J. (2026). *Supersaturated Designs for Main Effects and Two-Factor Interactions.* Invited Session, ASA/IMS Spring Research Conference, Clemson, S.C.

Weese, M.L., Arafat, S.[1], Sun,N.[1], & Martinez, W. G. (2025). *Boundary peeling: an outlier detection method. Quality Engineering* Invited Session, Fall Technical Conference, Houston, TX. *FTC 2025 Shwell Award*

Weese, M.L. (2024). *Cross Validation, Machine Learning and DOE.* ASA Section on Physical and Engineering Sciences Invited Session, Fall Technical Conference, Nashville, TN.

Young, K.[1], **Weese, M.L.**, Stallrich, J.W., Smucker, B.J., & Edwards, D.J. (2024). *Comparing Supersaturated Designs with Exact Screening Probabilities. Journal of Quality Technology* Invited Session, Fall Technical Conference, Nashville, TN. Presenter: Young, H.K.

Weese, M.L. (2024). Invited Attendee, Stu Hunter Research Conference, March 5–8, Roanoke, VA.

Weese, M.L., Young, K[1]., Stallrich, J.W., Smucker, B.J., & Edwards, D.J. (2023). *Comparing Supersaturated Designs with Exact Screening Probabilities.* ASA/IMS Spring Research Conference, May, Banff.

Weese, M.L., Smucker, B.J., & Edwards, D.J. (2022). *Response Surface Experiments: To Reduce or*

Not to Reduce? 15th International Conference of the ERCIM WG on Computational and Methodological Statistics, London, Hybrid.

Weese, M.L. (2022). Invited Attendee, Stu Hunter Research Conference, March 5–8, Roanoke, VA.

Weese, M.L., Edwards, D.J., Stallrich, J.W., & Smucker, B.J. (2021). *Strategies for Supersaturated Screening: Group Orthogonal and Var(s+) Designs. Technometrics*, *Journal of Quality Technology*, & *Quality Engineering* Invited Session, ENBIS, Virtual.

Weese, M.L., Smucker, B.J., & Edwards, D.J. (2020). *Response Surface Experiments: To Reduce or Not to Reduce? Journal of Quality Technology* Invited Session, INFORMS 2020, Virtual.

Weese, M.L., Smucker, B.J., Edwards, D.J., Stallrich, J.W., & Ansong, E. (2019). *Supersaturated Designs: Research-Based Best Practices and the Future.* ENBIS, Budapest, Hungary.

Weese, M.L., Smucker, B.J., Edwards, D.J., Stallrich, J.W., & Ansong, E. (2019). *Supersaturated Designs: Research-Based Best Practices and the Future.* Spring Research Conference, Blacksburg, VA.

Weese, M.L. (2018). Invited Attendee, Stu Hunter Research Conference, March 5–8, Roanoke, VA.

Weese, M.L., Smucker, B.J., & Edwards, D.J. (2017). *Analyzing Supersaturated Designs.* Section on Physical and Engineering Sciences, Fall Technical Conference, Philadelphia, PA.

Weese, M.L., Smucker, B.J., & Edwards, D.J. (2017). *Analyzing Supersaturated Designs.* Joint Statistical Meetings, Baltimore, MD.

Weese, M.L., Martinez, W.G., Megahed, F.M., & Jones-Farmer, L.A. (2017). *Statistical Learning Methods and Process Monitoring. Journal of Quality Technology* Invited Session, Fall Technical Conference, Philadelphia, PA. Presenter: Jones-Farmer, A.

Weese, M.L. (2016). Invited Attendee, Stu Hunter Research Conference, March 6–9, Waterloo, Canada.

Weese, M.L., Smucker, B.J., Edwards, D.J., Ockuly, R.[1], & Chang, L.[2] (2016). *A Meta-Analysis Quantifying Effect Sparsity, Heredity, and Hierarchy in Second-Order Designs.* Spring Research Conference, Chicago, IL.

Weese, M.L., Martinez, W.G., Megahed, F.M., & Jones-Farmer, L.A. (2015). *Statistical Learning Methods Applied to Process Monitoring: An Overview and Perspective.* 32nd Annual Quality & Productivity Research Conference, Raleigh, NC.

Weese, M.L. (2015). *Together We Can Do So Much: Fostering Successful Collaboration among Academia, Government, and Industry.* Panel Discussant, Spring Research Conference, Cincinnati, OH.

Weese, M.L., Smucker, B.J., & Edwards, D.J. (2015). *Supersaturated Designs, Definitive Screening Designs, and the Dantzig Selector.* Colloquium, Virginia Commonwealth University, Richmond, VA.

Contributed Presentations

Weese, M.L., Sturgill, A.[2], Hu, A.[2], Fairweather, M.[2], Martinez, W.G., & Crowder, M. (2023). *Machine Learning Models Identify Inhibitors of New Delhi Metallo- -lactamase.* Joint Statistical Meetings, Toronto, Canada.

Weese, M.L., Stallrich, J.W., Edwards, D.J., & Smucker, B.J. (2020). *Stop Treating Supersaturated Designs like Other Screening Designs.* Joint Statistical Meetings, Virtual.

Weese, M.L., Martinez, W.G., & Jones-Farmer, L.A. (2018). *One Class Peeling for Outlier Detection in*

[1]Graduate student.
[2]Undergraduate student.

High Dimensions. Joint Research Conference, Santa Fe, NM.

Weese, M.L., Martinez, W.G., & Jones-Farmer, L.A. (2016). *Recommendations on the Application of the k-chart.* Fall Technical Conference, Minneapolis, MN.

Weese, M.L., Ramsey, P.J., & Montgomery, D.J. (2015). *Analysis Strategies for Definitive Screening Design.* Fall Technical Conference, Houston, TX.

Weese, M.L. (2014). *Customer Behavior Outside 4 Walls: A Business Analytics Practicum Project Using JMP.* JMP Discovery Conference, Cary, NC.

Weese, M.L., Smucker, B.J., & Edwards, D.J. (2014). *Searching for Powerful Supersaturated Designs.* Fall Technical Conference, Richmond, VA.

Department / Organization Presentations

Weese, M.L. (2025). *Strategies for Supersaturated Screening.* SAS JMP Statistically Speaking Webinar, May, *Virtual.*

Weese, M.L. (2024). *A Graphical Comparison of Screening Designs Using Support Recovery Probabilities.* Purdue University, Department of Statistics Seminar, November 22.

Weese, M.L. (2021). *Supersaturated Designs: Research-Based Best Practices and the Future.* University of Arizona, DOE Fireside Chat, October, *Virtual.*

Weese, M.L., Smucker, B.J., & Edwards, D.J. (2015). *Supersaturated Designs, Definitive Screening Designs, and the Dantzig Selector.* Colloquium, Department of Statistics and Operations Management, Virginia Commonwealth University, Richmond, VA, March.

Funding

National Science Foundation (NSF), "2026 Quality and Productivity Research Conference," Principal Investigator, Award #2622491, $26,340, 2026–2027 *For student conference travel.*

EY Cybersecruity Initiative Summer Research Grant 2023, $5,000

National Institute of Health, "Machine learning approach for finding novel metallo-β-lactamase inhibitors", Co-PI (w/ Michael Crowder, Waldyn Martinez), $433,500, 2022-2025

Farmer School of Business Summer Research Grant 2020-2021, $10,000.

Honors and Awards

2025 Shwell Award Winner for the Best Presentation at the 2025 Fall Technical Conference.

2025-2027 Farmer School of Business Research Fellow

2024 Miami University Creativity and Innovation Award Awarded by the Office of the President

2022 Lloyd S. Nelson Award which recognizes the paper appearing in the *Journal of Quality Technology*'s 2021 volume with the "greatest immediate impact to practitioners."

2022 Miami University Prodesse Quam Conspici Award Awarded by the Office of the President

2014, 2017 Outstanding Professor Award Nominee for the Miami University Associated Student Government, (this is a campus-wide nomination for a faculty member who made significant difference in students' lives and careers).

2015-2018, Smucker Teaching Award Nominee for Farmer School of Business.

2014 Best Presentation Honorable Mention from the Section for Physical and Engineering Sciences of the American Statistical Association, Joint Statistical Meetings, Boston, MA

2009 Outstanding Poster Presentation Award from the Section for Physical and Engineering Sciences of the American Statistical Association, Joint Statistical Meetings, Washington DC

Teaching

Miami University

ISA 650 Business Analytics Practicum
ISA 633 Prescriptive Analytics in Business
ISA 491/591 Introduction to Data Mining in Business
ISA 496 Business Analytics Practicum
ISA/STA 365 Design of Experiments and Process Monitoring
ISA 291 Regression Analysis in Business
ISA 225 Introduction to Business Analytics
ISA 205 Introduction to Business Statistics
Online ISA 205 Introduction to Business Statistics
ISA 203 Supplementary Business Statistics
Online ISA 203 Supplementary Business Statistics

University of Tennessee

STAT 201 Introduction to Business Statistics
STAT 365 Statistical Process Control

Advising

Statistics Masters Advising:

Viren Gadkari (advisor) (May 2025) Topic: A Study of Double/Debiased Machine Learning Methods for Causal Inference. *Masters Project*

Sheikh Arafat (advisor w/ Waldyn Martinez) (2023) Topic: Boundary Peeling for One Class Support Vector Machines. *Masters Project*

Na Sun (advisor), (2022) Topic: The One-Class Peeling Method for multi-modal data *Masters Project*

Jie Yin (advisor), (2021) Topic: Investigating extensions of the One-Class Peeling method. *Masters Project*

Lina Lee (advisor), (2020) Topic: Optimizing s for OCP outlier detection. *Masters Project*

Mengdi Fu (co-advised with Byran Smucker) (2017) Topic: Using the Dantzig selector to analyze supersaturated experiments. *Masters Project*

Becky Ockuly (co-advised with Byran Smucker) (2016). Topic: Response Surface Experiments: A Meta-Analysis. *Master's Project*

Ph.D. Committee Member:

Na Sun (PhD Gerontology, Miami University, *expected* Dec, 2025) "Influence of Socioeconomic status and rehabilitation setting on self-reported functional improvement and rehabilitation goal attainment amount U.S. older rehabilitation users with multimorbidity"

Trent Lempkus (PhD Statistics, University of New Hampshire, 2022), "Self-Validated Ensemble Modeling"

Master's Committee Member:

Jeremy Braggs (2024), Isaac Williams (2024), Jacob Akubire (2023), Kelvin Njuki (2021), Eric Ansong (2019)

Service

To the Profession:

Editorial:
2022-*present* Associate Editor, *Technometrics*
2024-2025 Guest Editor, *Stu Hunter Conference Special Issue, Quality Engineering*
Editorial Review Board Member, *Quality Engineering*
Editorial Review Board Member, *Quality and Reliability Engineering International*
Journal Reviewer: *American Statistician, Applied Stochastic Models in Business and Industry, Chemometrics and Intelligent Laboratory Systems, Computational Statistics and Data Analysis, Informs Transactions on Education, International Journal of Production Research, Laboratory Animals, Journal of Statistical Planning and Inference, Journal of Statistical Theory and Practice, Journal of Quality Technology, Journal of the Royal Society for Statistics-C, Technometrics, Quality Engineering*

Elected Positions:
2025 Past-Chair, Quality & Productivity Section, American Statistical Association, *Elected*
2024 Chair, Quality & Productivity Section, American Statistical Association, *Elected*
2023 Chair-Elect, Quality & Productivity Section, American Statistical Association, *Elected*

Appointed Positions:
2025 Gerald J. Hahn Award Committee, *Member*
2025 Quality and Productivity Research Conference Program Committee, *Member*
2024-2026, American Statistical Association Deming Lectureship Committee, *Member*
2024 Stu Hunter Conference Organizing Committee, *Member*
2024 Joint Research Conference Program Committee, *Member*
2018-2021 Youden and Wilcoxon *Technometrics* Award Committee, *Chair/Member*
2019 International Conference on Design of Experiments, *Invited Session Organizer.*
2018 Joint Research Conference, *Sponsorship Chair.*
2016-2019 Fall Technical Conference, Quality & Progress, ASA, *Publicity Chair.*
2014-2017 Fall Technical Conference, Chemical Industries & Process Division, ASQ, *Short-Course Rep*
2012-2014, Chemical Industries & Process Division, ASQ, *Secretary.*
2012 Fall Technical Conference Assistant Program Chair, Chemical Industries and Process Division, American Society for Quality.
2011-2013 Section on Physical & Engineering Sciences, American Statistical Association, *Membership Chair.*
2020, 2024, Joint Statistical Meetings *Invited Session Organizer.*

To the University:

Miami University:

University Senate, ISA and Management Department Representative, Spring 2025
University Graduate Council, Farmer School of Business Representative, *Elected* (2021-2024)
Careers in Quantitative Skills Day (2015-2020, 2022, 2023): Prepared and lead analytics session for under served high school girls

Center for Analytics and Data Science:

CADS Faculty Fellow (2021-2023)
DataFest Judging committee (2016-2019)
Faculty Project Lead *Using Machine Learning in the search for antibiotic inhibitors: Miami University Chemistry Department* (Spring 2020-ongoing)
Faculty Project Lead *Subscription payment modeling: Local Payment Processing Corporation* (Fall 2020)
Faculty Project Lead *Data Exploration: Large Local Grocery Chain* (Spring 2019)
Faculty Project Lead *Market Segmentation: Large Local Bank* (Fall 2018)
Faculty Project Lead *Modeling: Butler County Landbank Round 2* (Spring 2016)

Framer School of Business:

Farmer School of Business Research Committee Member (2023-2024)
Dean's Faculty Advisory Committee (2022-2023)
Career Services Committee, *Member*, 2021-2023
Farmer School of Business Faculty Composition Task Force member (2020-2021)
Farmer School of Business Commencement and Anderson Speaker Series committee (2017-2019)
Search Committee, Farmer School of Business, Associate Dean Position (Summer 2015)
Farmer School of Business e-Learning committee (2013-2014, 2014-2015, 2015-2016)

ISA Department:

MSBA Faculty Director (2026-current)
MSBA Admissions Committee (2023-current)
DEI Committee Member (2022-current)
ISA Curriculum Committee, *Member*, (2020-2024)
Search Committee *Chair*, Information Systems & Analytics (2021-2022)
Search Committee *Member*, Information Systems & Analytics (2018, 2019, 2020, 2021, 2023)
ISA Technology service committee (2016-2017)
ISA STAR Seminar Series committee chair (2013-2014, 2014-2015)

To Students:

Proctored SAS Professional Predictive Analytics Certification Exam for ISA 491 students (86% pass rate) (2016-2018)
"Lean-In" Group (2014-2016): Informal group for graduating female analytic students

Professional Activities

Member American Statistical Association
Member American Society for Quality