VITA

THEODORE T. ALLEN

Citizen U.S.A., Born Washington, D. C.

Department of Integrated Systems Engineering
The Ohio State University, 210 Baker Systems, 1971 Neil Avenue, Columbus, OH 43210

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EDUCATION

Ph.D.1997 **UNIVERSITY OF MICHIGAN**, Industrial and Operations Engineering.

M.S. 1992 **UNIVERSITY OF CALIFORNIA, LOS ANGELES**, Physics (Solid State).

B.A. 1991 **PRINCETON UNIVERSITY**, Engineering Physics (Honors).

RESEARCH INTERESTS

Operations analytics which is the intersection of statistics, operations research, machine learning, and engineering

SELECTED HONORS AND SERVICE

Runner-Up 2017 INFORMS Social Media Analytics Best Student Paper Competition Co-Author
Inaugural Member of MIT Election Data and Science Lab (MEDSL)
Associate Editor for Computers and Industrial Engineering: Simulation and Data Mining (I.F.=2.6, 2017-present)
Nominated for the Dean's Award for Distinguished Outreach Achievements by the ISE Department
2017-2019 President of the INFORMS Social Media Analytics Section
INFORMS Volunteer Service Award 2016
2015 Co-author on a finalist article for the INFORMS Social Media Analytics Best Student Paper Competition
Elected to The OSU Integrated Systems Engineering Departmental Chair's Advisory Committee 2015
Chair of the Departmental Prize Committee 2013, 2015, and 2016
Faculty Representative to the OSU Information Security Advisory Board 2016
2014-Present Elected Treasurer of the INFORMS Public Sector OR Section
2013-Present Associate Editor for *Quality Approaches in Education*
2013 *Quality Approaches in Education* Journal Best Paper Prize 2010-present
Fellow of The *American Society of Quality* (ASQ)
2000, 2001, 2010, 2011, and 2013 "Alpha Pi Mu Outstanding Faculty Awards"
(top teaching award by vote of the Industrial & Systems Engineering undergraduate seniors),
"Charles E. MacQuigg Student Award for Outstanding Teaching" from The Ohio State University (OSU),
2010 NAE selected as 1 of 55 "outstanding educators" from ~200 nominated to attend the FOEE Symposium
INFORMS Prize Committee Member Overseeing Nicholson and von Neumann prizes 2013-2015
2007-2010 Chair of Lloyd S. Nelson Award Chair of the ASQ (Gives a *JQT* best paper prize)
2nd Place INFORMS Section on Public Programs, Services & Needs (2011) inaugural best paper competition
Honda Fellow 2008, Voting Related Press: CNN situations room, CNN American morning
2004-2008 Associate Editor of the *Journal of Manufacturing Systems*

BOOKS

Total sales of printed books and chapter or whole book downloads exceed 131,000 as of February 2018.

1. Allen, T. T. (accepted 3rd edition in preparation), *Introduction to Engineering Statistics and Lean Sigma: Statistical Quality Control and Design of Experiments and Systems*, 2nd ed., Springer Verlag: London (TOC Preface Sample Buy http://www.springer.com/engineering/production+eng/book/978-1-84882-999-2) 64K paid chapter downloads as of February 2018 and 35K for the 1st edition (3rd edition proposal requested & pending).
2. Allen, T. T. (2011), *Introduction to Discrete Event Simulation Theory with Applications: Voting Systems, Health Care, Military, and Manufacturing*, Springer Verlag: London (http://www.springer.com/978-0-85729-138-7). 32K paid chapter downloads as of September 2017.

REFEREED JOURNAL PUBLICATIONS

Research has received a total of 2,000 google citations as of March 2018.

1. Allen, T. T., Sui, Z., Parker, N.L. (2017). Timely Decision Analysis Enabled by Efficient Social Media Modeling. *Decision Analysis* Articles in Advance. 2017
2. Taslim, C., Allen, T. T., Lauria, M., & Tseng, S. H. (2017). Sequential forward-inverse design for genetic network modeling. *Journal of Industrial and Production Engineering*, 34(7), 520-528. 2017
3. Allen, T. T. and S. H. Tseng (2017). Case Study Implementation of An Intervention to Improve Instruction of Lean Six Sigma in a Statistical Quality Control Course. *Chung Yuan Management Review*. 2017
4. Roychowdhury, S., Allen, T. T., and Allen, N. B. (2017). A Genetic Algorithm with an Earliest Due Date Encoding for Scheduling Automotive Stamping Operations. *Computers & Industrial Engineering*, 105, 201–209. 2017
5. Mount-Campbell, A. F., Rayo, M. F., O'Brien, J.J., Allen, T.T., Patterson, E. S. (October 2016). Patient-Centered Handovers: Ethnographic Observations of Attending and Resident Physicians. *Journal of Quality Management in Healthcare*, 25(4), 225-230. 2016
6. Afful-Dadzie, A., and Allen, T. T. (2016). Control charting methods for autocorrelated cyber vulnerability data. *Quality Engineering*, 28(3), 313-328. 2016
7. Allen, T. T., Xiong, H., and Afful-Dadzie, A. (2016). A Directed Topic Model Applied to Call Center Improvement. *Applied Stochastic Models in Business and Industry*, 32(1), 57-73. 2016
8. Xie, C. and T. T. Allen (2015). Simulation and Experimental Design Methods for Job Shop Scheduling with Material Handling (JSSMH): A Survey. *International Journal of Advanced Manufacturing Technology*, 1-11. 2015
9. Tseng, S. H., & Allen, T. (2015). A Simple Approach for Multi-Fidelity Experimentation Applied to Financial Engineering. *Applied Stochastic Models in Business and Industry*, 31(5), 690-705. 2014
10. Yang, M., Fry, M. J., Kelton, W. D., & Allen, T. T. (2014). Improving Voting Systems through Service-Operations Management. *Production and Operations Management*, 23(7), 1083-1097. 2014
11. Afful-Dadzie, A. and T. T. Allen (2014). Data-Driven Cyber Vulnerability Maintenance Policies. *Journal of Quality Technology*, 26 (3), 1-17. 2014
12. Ferhatosmanoglu, N., T. T. Allen, and U. Catalyrek (2014). Mitigating Bias in Planning Two-Color Microarray Experiments. *Int. J. of Data Mining and Bioinformatics*. 2014
13. Allen, T. T., S. Artis, A. Afful-Dadzie, and Y. Allam (2013). Case Study Application of Blended Learning for an Engineering Simulation Course. *Quality Approaches in Higher Education*, 4(1), 1322. (http://rube.asq.org/edu/2013/07/best-practices/case-study-application-of-blended-learning-inan-engineering-simulation-course.pdf, Winner 2013 Best Paper Prize) 2013
14. Yang, M., T. T. Allen, M. Fry, and D. Kelton (2013). The Call for Equity: Simulation-Optimization Models to Minimize the Range of Waiting Times. *IIE Transactions*, 45, 1–15. 2013
15. Allen, T. T. and H. Xiong (2012). Pareto charting using multifield freestyle text data applied to Toyota Camry user reviews. *Applied Stochastic Models in Business and Industry*, 28 (2), 152-163. 2012
16. Allen, T. T. and R. Rajagopalan (2011). A Bayesian plotting method for fractional factorial data analysis. *Journal of Quality Technology*, 43, 3, 224-235. 2011
17. Allen, T. T. and S. Tseng (2011). Variance Plus Bias Optimal Response Surface Designs With Qualitative Factors Applied to STEM Choice Modeling. *Quality and Reliability Engineering International*, 27. 2011
18. Allen, T. T., S. Tseng, K. S., M. A. Megimose-McClay (2010). Improving the Hospital Discharge Process with Six Sigma Methods. *Quality Engineering*, 22, 1-8 (http://www.asq.org/pub/qe/2010/vol22-no1/). 2010

19. Ferhatosmanoglu, N., T. T. Allen, and G. Canahuate (2009). Vector Space Search Engines That Maximise Expected User Utility. *International Journal of Mathematics in Operational Research*, 1(3), 279 – 302 (http://www.cse.ohio-state.edu/~canahuat/publications/ijmor.pdf). 2009

20. Allen, T. T., N. Chantarat, and C. Taslim (2009). Fractional Factorials that Maximize the Probability of Identifying Important Factors. *International Journal of Industrial and Systems Engineering*, 4 (2), 133-150. (http://www.inderscience.com/browse/index.php?journalID=188&year=2009&vol=4&issue=2). 2009

21. Huang, D., T. T. Allen, W. Notz, R. A. Miller (2006). Sequential Kriging Optimization Using Variable Fidelity Data. *Structural & Multidisciplinary Optimization*, 32 (5) 369-382 (http://www.springerlink.com/content/74033v6312l5r49l/). 2009

22. Brady, J. E. and T. T. Allen (2006). Six Sigma: A Literature Review and Suggestions for Future Research" *Quality and Reliability Engineering International*, 22 (3), 335-367. (http://www3.interscience.wiley.com/cgi-bin/fulltext/112587939/PDFSTART). 2006

23. Huang, D., T. T. Allen, W. Notz, and N. Zheng (2006). Global Optimization of Stochastic Black-Box Systems via Sequential Kriging Meta-Models. *The Journal of Global Optimization*, 34 (3), 427-440 (http://www.springerlink.com/content/w8654353647525vx/). 2006

24. Chantarat, N., T. T. Allen, N. Ferhatosmanoglu, and M. Bernshteyn (2006). A Combined Array Approach to Minimize Expected Prediction Errors in Experimentation Involving Mixture and Process Variables. *The International Journal of Industrial and Systems Engineering*, 1, 129-147 (http://www.inderscience.com/storage/f210811354121679.pdf). 2006

25. Huang, D. and T. Allen (2005). Design and Analysis of Variable Fidelity Experimentation Applied to Engine Valve Heat Treatment Process Design. *Journal of the Royal Statistical Society: Series C*, 54, 2, 1-21 (http://www3.interscience.wiley.com/cgi-bin/fulltext/118689819/PDFSTART). 2005

26. Allen, T. T., and K. Maybin (2004). Using Focus Group Data to Set New Product Prices. *Journal of Product and Brand Management*, 13, 1, 15-24. (http://www.emeraldinsight.com/Insight/ViewContentServlet?contentType=Article&Filename=/published/emeraldfulltextarticle/pdf/0960130102.pdf). 2004

27. Allen, T. T., Bernshteyn, M., L. Yu, and K. Kabiri (2003). A Comparison of Alternative Methods for Constructing Meta-Models for Computer Experiments. *The Journal of Quality Technology*, 35 (3), 1-17 (http://www.asq.org/data/subscriptions/jqt_open/2003/july/qtec-35-3-264.pdf). 2003

28. Ribardo C. and Allen, T. T. (2003). An Alternative Desirability Function for Achieving 'Six Sigma' Quality. *Quality and Reliability Engineering International*, 19, 227-240. (http://www3.interscience.wiley.com/cgi-bin/fulltext/102530334/PDFSTART). 2003

29. Allen, T. T., L. Yu, J. Schmitz (2003). The Expected Integrated Mean Squared Error Experimental Design Criterion Applied to Die Casting Machine Design. *Journal of the Royal Statistical Society: Series C*, 52, 1, 1-15 (http://www3.interscience.wiley.com/cgi-bin/fulltext/118874160/PDFSTART). 2003

30. Allen, T. T. and M. Bernshteyn (2003). Supersaturated Designs that Maximize the Probability of Finding the Active Factors. *Technometrics*, 45 (1), 1-8. (http://pubs.amstat.org/doi/abs/10.1198/004017002188618734). 2003

31. Brady, J. E. and T. T. Allen (2002). Case Study Based Instruction of SPC and DOE. *The American Statistician*, 56, 4, 1-4 (http://pubs.amstat.org/doi/pdf/10.1198/000313002614). 2003

32. Allen, T. T., R. W. Richardson, D. Tagliabue, and G. Maul (2002). Statistical Process Design for Robotic GMA Welding of Sheet Metal. *The Welding Journal*, 81, 5, 69s-77s (http://files.aws.org/wj/supplement/05-2002-ALLEN-s.pdf). 2002

33. Allen, T. T., and L. Yu (2002). Low Cost Response Surface Methods From Simulation Optimization. *Quality and Reliability Engineering International*, 18, 1, 5-17. (http://www3.interscience.wiley.com/cgi-bin/fulltext/91016170/PDFSTART). 2002

34. Allen, T. T., W. Ittiwattana, R. W. Richardson, and G. Maul (2001). A Method for Robust Process Design Based on Direct Minimization of Expected Loss Applied to Arc Welding. *The Journal of Manufacturing Systems*, 20, 5, 329-348 (http://www-iwse.eng.ohiostate.edu/ISEFaculty/allen/AllenIttiwattanaRichardsonMaul2001.pdf). 2001

35. Allen, T. T., L. Yu, and M. Bernshteyn (2000). Low Cost Response Surface Methods Applied to the Design of Plastic Snap Fits. *Quality Engineering*, 12, 583-591. (http://www.informaworld.com/smpp/content~db=all~content=a779115291). 2000

36. Koc M., Allen T. T., Jiratheranat S., and Altan, T. T. (2000). The use of FEM and experimental design to investigate tube hydroforming of a simple geometry. *The International Journal of Machine* 2000

Tools and Manufacture, 40, 2249-2266 (http://journals.ohiolink.edu/ejc/pdf.cgi/Ko_Muammer.pdf?issn=08906955&issue=v40i0015&article=2249_tuofaddgfshp).

37. Allen, T. T., P. Afshari, K. Kabiri, and G. Herrin (1999). Robust Engineering Using Numerical Methods: Application to the Design of D-Shaped Shafts. SAE Technical Paper # 98PC-229, *1999 Society of Automotive Engineers Journal* (http://papers.sae.org/980295). 1999

SELECTED MANUSCRIPTS IN THE REVIEW PROCESS

1. Allen, T. T., and Chowdhury, R. (under review). Fast Bayesian Reinforcement Learning for Cyber Maintenance. *Computers & Industrial Engineering*.
2. Hou, C., Allen, T. T., and Hall, N. (under revision). Models of Information Flow in Project Management. anticipated submission to *Naval Research Logistics*.
3. Allen, T. T. S. Huang, and Yang, M. (under review). Determining Resource Requirements for Elections Using Ranking and Selection Methods. *EJOR*.
4. Allen, T. T. and Z. Sui (under second review). Exploratory Text Data Analysis. *Quality Engineering*.
5. Liu, E., T. T. Allen, and T. Jiang (under revision). Logistic Regression and Imputation Methods for Predicting Incident Rates and Prioritizing Vulnerabilities. *Journal of Quality Technology.*
6. Allen, T. T., Lawson, J., Mulh, B. and Balkin (under revision). A Diagrammatic Method for Content Analysis Based Technology Evaluation.

MAGAZINE OR NEWSPAPER PUBLICATIONS

1. Allen, T. T. (2018). Final Five with Theodore T. Allen. *ISE Magazine*, IISE Society, 49 (2), 66. 2018
2. Hernandez, O., T. T. Allen, and D. Samuelson (2017). Wargames Illuminate Cyber Threat Discovery. *ORMS Today* (https://www.informs.org/ORMS-Today/Private-Articles/August-Volume-44-Number4/Wargames-Illuminate-Cyber-Threat-Discovery). 2017
3. Allen, T. T. (2013), Delving into the reasons for long lines can bring solutions, Orlando Sentinel, January 8, http://articles.orlandosentinel.com/2013-01-08/news/os-ed-long-lines-voting-florida-01081320130107_1_long-lines-ballot-length-turnout.
4. Samuelson, D. A., T. T. Allen, and M. Bernshteyn (2007). The Right Not to Wait. *ORMS Today*, December (http://www.lionhrtpub.com/orms/orms-12-07/voting.html). 2007
5. Allen, T.T. and M. Bernshteyn (2006). Mitigating Voter Wait Times. *Chance Magazine*, *The American Statistical Association*, Autumn (http://www.amstat.org/publications/chance/articleIndex.cfm). 2006
6. Allen, T. T., M. Bernshteyn, and D. A. Samuelson (2006), Voting Queues Present Complicated 2006 Problems, Letters to the Editor, *OR/MS Today* (http://www.lionhrtpub.com/orms/orms-8-06/letters.html, August).

CONFERENCE PUBLICATIONS (REFEREED EXCEPT AS NOTED)

1. Sui, Z. and T. T. Allen (2017). Allen, T. T. and Z. Sui (under review). Exploratory Text Data Analysis. runner up in the *INFORMS Social Media Analytics Best Student Paper Competition*. 2017
2. Sui, Z., D. Milam, and T. T. Allen (2015). A Visual Monitoring Technique Based on Importance Score and Twitter Feeds. finalist in the *INFORMS Social Media Analytics Best Student Paper Competition*. 2015
3. Reisenthel, P. H. and T. T. Allen (2014). Application of Multifidelity Expected Improvement Algorithms to Aeroelastic Design Optimization. *10th AIAA Multidsciplinary Design Optimization Conference*, AIAA SciTech, 13-17 January, National Harbor, Maryland. 2014
4. Allen, T.T. and S.H. Tseng (2013). A Magic Number versus Trickle Down Agent-Based Model of Tax Policy. *Proceedings of the 2013 Winter Simulation Conference*, R. Pasupathy, S.-H. Kim, A. Tolk, R. Hill, and M. E. Kuhl, eds. (http://informs-sim.org/wsc13papers/includes/files/123.pdf) 2013

5. Li, J., T. T. Allen, and K. Akab (2013). Could Simulation Optimization Have Prevented 2012 Central Florida Election Lines. *Proceedings of the 2013 Winter Simulation Conference*, R. Pasupathy, S.-H. Kim, A. Tolk, R. Hill, and M. E. Kuhl, eds. (http://informs-sim.org/wsc13papers/includes/files/183.pdf) 2013

6. Afful-Dadzie, A. and T. T. Allen (2013). Sufficiency Model-Action Clarification for Simulation Optimization Applied to an Election System. *Proceedings of the 2013 Winter Simulation Conference*, R. Pasupathy, S.-H. Kim, A. Tolk, R. Hill, and M. E. Kuhl, eds. (http://informssim.org/wsc13papers/includes/files/094.pdf) 2013

7. Afful-Dadzie, A. and T. T. Allen (2013). Optimal Traditional Versus Online Instructional Method Selection. *ASEE Midwest Regional Conference*, R. Gustafson ed., Columbus, Ohio. 2013

8. Allen, T. T., S. M. Vinson, A. Raqab, and Y. Allam (2013). Using SMERT to Identify Actionable Topics in Student Feedback. *ASEE Midwest Regional Conference*, R. Gustafson ed., Columbus, Ohio. 2013

9. Xie, C., T. T. Allen, and A. Raqab (2013). Using Staged Control Charts for Educational Assessment. *ASEE Midwest Regional Conference*, R. Gustafson ed., Columbus, Ohio. 2013

10. Allen, T. T. and D. N. Vuckovich (2010). An Open-Source Population Indifference Zone-Based Algorithm for Simulation Optimization. *Proceedings of the 2010 Winter Simulation Conference*, B. Johansson, S. Jain, J. Montoya-Torres, J. Hugan, and E. Yücesan, eds (http://www.informssim.org/wsc10papers/021.pdf). 2010

11. Davis, N. and T. T. Allen (2010). A Simple Agent-Based Social Impact Theory Model of Student STEM Selection. *Proceedings of the 2010 Winter Simulation Conference*, B. Johansson, S. Jain, J. MontoyaTorres, J. Hugan, and E. Yücesan, eds (http://www.informs-sim.org/wsc10papers/024.pdf). 2010

12. Zheng N, Allen TT, Patterson ES, Woods DD, Ferhatosmanoglu N. (2007). Diversity Search Techniques to Broaden Exploration of Alternative Explanations in Information Analysis. *Proceedings of the Naturalistic Decision Making Conference.* (May 2007): 52-58. 2007

13. Zheng, N., T. T. Allen, and W. Ittiwattana (2007). Subset Selection and Optimization and For Selecting Binomial Systems Applied to Supersaturated Design Generation. *Proceedings of the 2007 Winter Simulation Conference*, Russell Barton editor (http://www.informs-sim.org/wsc07papers/039.pdf). 2007

14. Schenk, J. R., N. Zheng, and T. T. Allen (2005). Multiple Fidelity Simulation Optimization of Hospital Performance Under High Consequence Event Scenarios. *Proceedings of the 2005 Winter Simulation Conference*, M. E. Kuhl, N. M. Steiger, F. B. Armstrong, and J. A. Joines, eds (http://www.informssim.org/wsc05papers/110.pdf). 2005

15. Menke, J., N. Chantarat, D. Farson, T. T. Allen (2005). Statistical and numerical analysis for optimization of aluminum tube welding. *Trends in Welding Research Conference*, Pine Mountain GA, April 2005. 2005

16. Allen, T. T., N. Zheng, N. Chantarat, M. Bernshteyn (2004). New Practical Objectives, Solution Methods, and Fractional Factorials. ASQ Fall Technical Conference, Roanoke Virginia. 2004

17. Chantarat, N., N. Zheng, T. T. Allen, and D. Huang (2003). Optimal Experimental Design for Systems Involving Both Quantitative and Qualitative Factors. *Proceedings of the Winter Simulation Conference*, R. D. M. Ferrin and P. Sanchez (http://www.informs-sim.org/wsc03papers/069.pdf). 2003

18. Ribardo, C. and T. Allen (2001). An Alternative Desirability Function for Achieving "Six Sigma" Quality. Web *Proceeding Quality, Reliability and Statistics Section for INFORMS* Miami (wwwpersonal.engin.umich.edu/~shihang/informs_qsr/). 2001

19. Allen, T. T. and L. Yu (2000). Low Cost Response Surface Methods For and From Simulation Optimization. *Proceedings of the Winter Simulation Conference*, R. Barton and J. Joines editors (http://www.informs-sim.org/wsc00papers/093.PDF). 2000

20. Allen, T. T., W. Ittiwattanna, and M. Bernshteyn (2000). A Method for Robust Machine Design Applied to Arc-Welding. *Third International Symposium on Tools and Methods of Competitive Engineering*, April 18-21, Delft, Netherlands. 2000

21. Richardson, R. W., T. T. Allen, D.P. Tagliabue, G. Maul (2000). Statistical Process Design for Robotic Gas Metal Arc Welding of Sheet Metal. *Tenth International Conference: Computer Technology in Welding and Manufacturing*, Copenhagen, Denmark, June 6-7 (not refereed). 2000

22. Ribardo, C., Allen, T. T., Richardson, R., and Yapp, D. (2000). Desirability Functions for Comparing 2000

Arc Welding Parameter Optimization Methods and For Addressing Process Variability Under Six Sigma Assumptions. *Proceedings of the 2000 International Conference on Advances in Welding Technology*, Orlando, FL, 12/00 (not refereed).

23. Allen, T. T., R. W. Richardson, D. P. Tagliabue, and G. Maul (2000). Statistical Process Design for Robotic GMAW of Sheet Metal. *Proceedings of the 2000 International Conference on Advances in Welding Technology*, Orlando, FL, 12/00 (not refereed). 2000
24. Allen, T. T. and L. Yu. Low Cost Experimental Methods Applied to Aerospace Related Design. *Proceedings of the 3rd Annual World Congress on Multidisciplinary Optimization*, Niagara Falls/Amherst, New York, May 15-21, 1999. 1999
25. Maul, G., T. T. Allen, and Richard Richardson. Arc Welding Process Optimization. *IEMS 98 International Conference*, Cocoa Beach, Florida. 1998
26. Botros, M. B., T. T. Allen, Tony Nava. Minimizing the Fan Imbalance Excitation of an Automotive Blower System. SAE Technical Paper # 98PC-24, *1998 SAE International Congress*, Cobo Center, Detroit. 1998
27. Allen, T. T. Robust Engineering Using Numerical Methods: Application to the Design of D-Shaped Shafts. SAE Technical Paper #98PC-229, *1998 SAE International Congress*, Cobo Center, Detroit. 1998
28. Botros, M. B., J. A. (Tony) Nava, T. T. Allen. Interaction of HVAC Blower Fan & Motor Imbalance. *Proceedings of the IIAV Congress IV*, St. Petersburg, Russia, June 24-27, 1996. 1996

TECHNICAL REPORTS

1. Allen and Bernshteyn (2008). Helping Franklin County Vote in 2008: Waiting Lines. Report to the Franklin County Board of Elections. http://vote.franklincountyohio.gov/assets/pdf/press-releases/PR07302008.pdf. 2008
2. Allen, T. T. and M. Bernshteyn (2006). Optimal Voting Machine Analysis. in DRE Analysis for May 2006 Primary, Steven Hertzberg ed., Cuyahoga County, Technical Report, Election Science Institute (http://www.sagata.com/resources/ESI_Cuyahoga_Final.pdf). 2006
3. Allen, T. T., S. Hertzberg, T. Warren (2006). Election System Functional Threat Analysis. in DRE Analysis for May 2006 Primary, Steven Hertzberg ed., Cuyahoga County, Technical Report, Election Science Institute. 2006
4. Kinney, P., D. Farson, and T. T. Allen (2004). Optimization of an Innovative Hybrid Welding Process for Structural Fabrication. SME Technical Paper, Product ID: TP04PUB257. 2004
5. Allen, T. T. (2003), *Introduction to Business Statistics and Six Sigma*, produced by Greyden Press, ISBN 0-9745912-0-3 (effectively a self-published book). 2003
6. Ribardo, C., T. T. Allen, R. Richardson, and D. Yapp (2001). A Comparison of Arc Welding Parameter Optimization Methods. *Edison Welding Institute Technical Report.* 2001
7. Allen, T. T., C. Ribardo, R. Richardson, and D. Yapp (2001). A desirability function for addressing process variability under six sigma assumptions. *Edison Welding Institute Technical Report.* 2001
8. Allen, T. T. and Liyang Yu. The Odor Report. Submitted 1/20/98 to Visteon Corporation. 1998
9. Allen, T. T., D. Tagliabue, R. Richardson, G. Maul (1999). A Statistical Process Design Procedure for the Arc Welding of Sheet Metal. *Edison Welding Institute Technical Report.* 1999
10. Allen, T. T. and Mike Bernshteyn. New Experimental Methods Applied HVAC Case Joining. Submitted 3/30/98 to Visteon Corporation. 1998

WORK EXPERIENCE

21 years of academic work experience

THE OHIO STATE UNIVERSITY, Integrated Systems Engineering, Columbus, OH.

03-present	Associate Professor with tenure
8/97-03	Assistant Professor (tenure track)
8/96-8/97	Instructor

FORD MOTOR COMPANY, Climate Control Operations (CCO), Advanced Engineering, Dearborn, MI.

5/95 - 10/96
- Optimized with experimental design the AC blower wheel imbalance to limit case vibrations,
- Optimized with experimental design, real-world and FEM testing snap tabs for AC case joining, • Optimized with experimental design, real-world and FEM testing the tongue and groove seal,
- Correlated AC system performance, customer satisfaction, and warranty.

FORD MOTOR COMPANY, Corporate Quality, Reliability & AQP, Dearborn, MI.

5/94 - 5/95
- Coordinated a team of engineers developing the ideal air handling case-joining strategy for all vehicles.
- Responsibilities included finite element analysis (FEA) design, rapid prototyping, and incorporation into prototype injection molds, also, GD&T, budgeting ($215K), modeling & analysis.

8/93 **THE UNIVERSITY OF MICHIGAN**, Department of Industrial and Operations Engineering.
Teaching Assistant: Statistical Quality Control (IOE 466), Design of Experiments (IOE 465).

CHRYSLER CORPORATION, Problem Identification and Resolution, Highland Park, MI.

8/94 - 6/95
- Led student team (under Professors Nair and Wu) in postmortem analysis of quality/corporate problems.
- Used time series methods to demonstrate the dependence of warranty data on supplier SPC data.

EMERSON ELECTRIC CO., Fusite Division, 6000 Fernview, Cincinnati, OH.

6-8/93 Used DOE techniques to fix an adhesion problem in a critical injection molding process.

TEACHING EXPERIENCE

6 Teaching Awards (student selection) as of March 2016

Courses Developed and Taught at The Ohio State University

Undergraduate: Statistical Modeling, Queuing, and Lean Production (INDENG 513) - the mathematical framework of simulation and queuing in the context of recent developments in lean manufacturing.

Statistical Quality Control and Quality Management Systems (INDENG 509 & ISE 4120) - statistical quality control, ISO9000, and the 6 sigma process for quality improvement.

Capstone Design (ISE 4900) - industrial projects for senior students in teams of 2 to try to use industrial and systems engineering techniques to help clients

Undergraduate and Graduate: Design of Engineering Experiments (INDENG 610) - statistical planning of engineering experiments, including Taguchi methods and their role in the engineering design process.

Graduate: Statistical Quality Control and Quality Management Systems (INDENG 709) - statistical quality control, ISO9000, and the 6σ process for quality improvement.

Simulation for System Analytics and Decision-Making (ISE 6300) – basic discrete event simulation methods including VBA, ARENA, SIMIO, and SIMUL8 together with variation reduction techniques and simulation optimization methods

Empirical Model Building in Industrial Engineering (INDENG 700) – utility theory and simulation optimization for system design and optimal data collection to support these activities

ACADEMIC ADVISING: THE OHIO STATE UNIVERSITY

Solo-Chaired 19 Ph.D. Committees; Co-Chaired 2 Ph.D. Committees, 80+ student publications

Graduated Doctoral Students

1. Zhenhuan Sui (2017). Hierarchical Text Topic Modeling with Applications in Social Media-Enabled Cyber Maintenance Decision Analysis and Quality Hypothesis Generation."

Allen, T. T., Sui, Z., & Parker, N. L. (2017). Timely decision analysis enabled by efficient social media modeling. *Decision Analysis*, *14*(4), 250-260.

Allen, T. T. and Z. Sui (under second review). Exploratory Text Data Analysis. *Quality Engineering*.

Sui, Z. and T. T. Allen (2017). Allen, T. T. and Z. Sui (under review). Exploratory Text Data Analysis. Runner up in the *INFORMS Social Media Analytics Best Student Paper Competition*.

Sui, Z., D. Milam, and T. T. Allen (2015). A Visual Monitoring Technique Based on Importance Score and Twitter Feeds. finalist in the *INFORMS Social Media Analytics Best Student Paper Competition*.

2. Sayak Roychowdhury (2017). Data-Driven Policies for Manufacturing Systems and Cyber Vulnerability Maintenance.

Allen, T. T., and Chowdhury, R. (under review). Fast Bayesian Reinforcement Learning for Cyber Maintenance. *Computers & Industrial Engineering*.

Roychowdhury, S., Allen, T. T., & Allen, N. B. (2017). A genetic algorithm with an earliest due date encoding for scheduling automotive stamping operations. *Computers & Industrial Engineering*, *105*, 201-209.

3. Shijie, Huang (2016). Waiting Lines and System Selection in Constrained Service Systems with Applications in Election Resource Allocation.

Allen, T. T. S. Huang, and Yang, M. (under review). Determining Resource Requirements for Elections Using Ranking and Selection Methods. *EJOR*.

4. Chengjun Hou (2015). Dynamic Programming for Parametric Uncertainty with Applications in Project Management and Cyber Security.
5. Xie, Chen (2014). Dynamic Approximate Empirical Reward Processes.

Xie, C., & Allen, T. T. (2015). Simulation and experimental design methods for job shop scheduling with material handling: a survey. *The International Journal of Advanced Manufacturing Technology*, *80*(1-4), 233-243.

6. Afful-Dadzie, Anthony (2012). Robust Optimal Maintenance Policies and Charts for Cyber Vulnerability Management.

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Afful-Dadzie, A., Allen, T. T., Raqab, A., & Li, J. (2013, December). Sufficiency model-action clarification for simulation optimization applied to an election system. In Proceedings of the 2013 Winter Simulation Conference: Simulation: Making Decisions in a Complex World (pp. 1079-1088). IEEE Press.

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Afful-Dadzie, A., & Allen, T. T. (2013, November). Optimal Traditional Versus Online Instructional Method Selection. In ASEE North Central Section Conference 2013.

Afful-Dadzie, A., & Afful-Dadzie, E. Multi-Criteria Decision Making: The Case of Large and Distinct Decision Makers.

7. Soo Ho Lee (2012). Comparison and Application of Probabilistic Clustering Methods for System Improvement Prioritization.
8. Hui (Paul) Xiong (2011). Combining Subject Expert Experimental Data with Standard Data in Bayesian Mixture Modeling.

Allen, T. T., & Xiong, H. (2012). Pareto charting using multifield freestyle text data applied to Toyota Camry user reviews. *Applied Stochastic Models in Business and Industry*, *28*(2), 152-163.

Allen, T. T., Xiong, H., & Afful-Dadzie, A. (2016). A directed topic model applied to call center improvement. *Applied Stochastic Models in Business and Industry*, *32*(1), 57-73.

9. Rajagopalan, Ravishankar (2009). Response-Probability Model Analysis Plots with Applications In Engineering and Clinical Research.

Allen, T. T., & Rajagopalan, R. (2011). A Bayesian plotting method for fractional factorial data analysis. *Journal of Quality Technology*, *43*(3), 224-236.

10. Taslim, Cenny (2008). Multi-State Experimental Planning and Analysis For Forward-Inverse Regression Applied to Genetic Network Modeling.

Bailey, T., Krajewski, P., Ladunga, I., Lefebvre, C., Li, Q., Liu, T., ... & Zhang, J. (2013). Practical guidelines for the comprehensive analysis of ChIP-seq data. PLoS computational biology, 9(11), e1003326.

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11. Zheng, Ning (2007). Discovering Interpretable Topics in Free-Style Text: Diagnostics, Rare Topics, and Topic Supervision. Alien of extraordinary ability, U.S. Department of State.

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12. Tseng, Shi-Hsien (2007). Bayesian and Semi-Bayesian Regression Applied to Manufacturing Wood Products.

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13. Schenk, Jason (2007). Meta-Uncertainty and Resilience with Applications in Intelligence Analysis."

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Schenk, J. R., & Wade, R. L. (2008, August). Robotic systems technical and operational metrics correlation. In *Proceedings of the 8th Workshop on Performance Metrics for Intelligent Systems* (pp. 108-115). ACM.

Allen, T. T., Schenk, J., & Woods, D. D. (2016). An Initial Comparison of Selected Models of System Resilience. In *Resilience Engineering Perspectives, Volume 2* (pp. 95-116). CRC Press.

14. Ferhatosmanoglu, Nilgun (2007). Optimal Design of Experiments for Emerging Biological and Computational Applications.

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Sacan, A., Ferhatosmanoglu, N., & Ferhatosmanoglu, H. (2009). MicroarrayDesigner: an online search tool and repository for near-optimal microarray experimental designs. *BMC bioinformatics*, *10*(1), 304.

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Ferhatosmanoglu, N., & Macit, B. (2016). Incorporating Explanatory Effects of Neighbour Airports in Forecasting Models for Airline Passenger Volumes. In *ICORES* (pp. 178-185).

15. Brady, James (2005). Six Sigma and the University: Research, Teaching, and Meso-Analysis. (one publication in the *American Statistician*, one publication in *Quality and Reliability Engineering International*, and one article under preparation for the *Journal of Quality and Technology*).

Brady, J. E., & Allen, T. T. (2006). Six Sigma literature: a review and agenda for future research. *Quality and reliability engineering International*, *22*(3), 335-367.

16. Huang, Deng (2005). Experimental Planning and Sequential Kriging Optimization Using Variable Fidelity Data. (co-adviser with Allen Miller, alien of extraordinary ability U.S. State Department).

Huang, D., Allen, T. T., Notz, W. I., & Zeng, N. (2006). Global optimization of stochastic black-box systems via sequential kriging meta-models. Journal of global optimization, 34(3), 441-466.

Huang, D., Allen, T. T., Notz, W. I., & Miller, R. A. (2006). Sequential kriging optimization using multiple-fidelity evaluations. Structural and Multidisciplinary Optimization, 32(5), 369-382.

17. Chantarat, Navara (2003). Modern Design of Experiments Methods for Screening and Experimentations with Mixture and Qualitative Variables" (resulted in one publication in the *International Journal of Industrial Systems Engineering* process and a publication in the *Winter Simulation Conference*).

Chantarat, N., Allen, T. T., Ferhatosmanoglu, N., & Bernshteyn, M. (2006). A combined array approach to minimise expected prediction errors in experimentation involving mixture and process variables. *International Journal of Industrial and Systems Engineering*, *1*(1-2), 129-147.

Allen, T. T., Chantarat, N., & Taslim, C. (2009). Fractional factorial designs that maximise the probability of identifying the important factors. *International Journal of Industrial and Systems Engineering*, *4*(2), 133-150.

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Krachaiwong, N., & Chantarat, N. (2008). Application of method study techniques to increase productivity for frozen seafood industry. In *46. Kasetsart University Annual Conference, Bangkok (Thailand), 29 Jan-1 Feb 2008*.

18. Ittiwattana, Waraphorn (2002). A Method for Simulation Optimization with Applications in Robust Process Design and Locating Supply Chain Operations" (resulted in a publication on an alternative to Taguchi Methods in the refereed *Journal of Manufacturing Systems*).
19. Bernshteyn, Mikhail (2001). Heuristics that Combine Population and Multiple Comparison Based Searches with Application to Model Robust Supersaturated Experimental Designs" (resulted in publications in the top journals *Technometrics* and the *Journal of Quality Technology*).

Allen, T. T., & Bernshteyn, M. (2003). Supersaturated designs that maximize the probability of identifying active factors. *Technometrics*, *45*(1), 90-97.

Allen, T. T., Bernshteyn, M. A., & Kabiri-Bamoradian, K. (2003). Constructing meta-models for computer experiments. *Journal of Quality Technology*, *35*(3), 264.

Allen, T., & Bernshteyn, M. (2006). Mitigating voter waiting times. *Chance*, *19*(4), 25-34.

Bernshteyn, M. (2001). *Simulation optimization methods that combine multiple comparisons and genetic algorithms with applications in design for computer and supersaturated experiments* (Doctoral dissertation, The Ohio State University).

Samuelson, D. A., Allen, T. T., & Bernshteyn, M. (2007). The right not to wait. *OR/MS Today (December), at< http://www. orms-today. org/orms-12-07/frvoting. html*.

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Allen, T. T., Kabiri-Bamoradian, K., & Bernshteyn, M. A. (2004). Constructing meta-models for computer experiments. *Quality control and applied statistics*, *49*, 321-322.

20. Ribardo, Charles (2000). Desirability Functions for Comparing Arc Welding Parameter Optimization Methods and for Addressing Process Variability Under Six Sigma Assumptions" (resulted in a publication in the refereed journal *Quality and Reliability Engineering International* and the award of finalist in the INFORMS QSR student paper competition, Co-adviser with Prof. R. W. Richardson).

Ribardo, C., & Allen, T. T. (2003). An alternative desirability function for achieving 'six sigma'quality. *Quality and Reliability Engineering International*, *19*(3), 227-240.

21. Yu, Liyang (2000). Expected Modeling Errors and Low Cost Response Surface Methods. (resulted in publications in the reputed refereed journals Journal *of the Royal Statistical Society: Series C*, *Quality Engineering*, and *Quality and Reliability Engineering International*).

Yu, L. (2014). schema. org and Semantic Markup. In *A Developer's Guide to the Semantic Web* (pp. 475-515). Springer Berlin Heidelberg.

Yu, L. (2011). Linked open data. In *A Developer's Guide to the Semantic Web* (pp. 409-466). Springer Berlin Heidelberg.

Yu, L. (2011). Jena: A Framework for Development on the Semantic Web. In *A Developer's Guide to the Semantic Web* (pp. 491-532). Springer Berlin Heidelberg.

Yu, L. (2011). *A developer's guide to the semantic Web*. Springer Science & Business Media.

Yu, L. (2011). Follow your nose: a basic semantic web agent. In *A Developer's Guide to the Semantic Web* (pp. 533-557). Springer Berlin Heidelberg.

Yu, L. (2007). *Introduction to the semantic web and semantic web services*. CRC Press.

Allen, T. T., & Yu, L. (2002). Low-cost response surface methods from simulation optimization. *Quality and Reliability Engineering International*, *18*(1), 5-17.

Allen, T. T., Yu, L., & Schmitz, J. (2003). An experimental design criterion for minimizing meta-model prediction errors applied to die casting process design. *Journal of the Royal Statistical Society: Series C (Applied Statistics)*, *52*(1), 103-117.

Allen, T., Yu, L., & Bernshteyn, M. (2000). Low-cost response surface methods applied to the design of plastic fasteners. *Quality Engineering*, *12*(4), 583-591.

Current Doctoral Students

1. Kaveh Akbari – Bayesian Reinforcement Learning with Identical Systems For Energy and Text Decisions
2. Enhao Liu – Data-Driven Cyber Maintenance Policies
3. Olivia Hernandez – Wargames and Bayesian Modeling for Cyber Threat Illumination
4. Abdullah Alomair – TBD – Alarms and Voice Communication for Bayesian Reinforcement Learning
5. Yibo Dang – TBD – Text-Based Data-Driven Maintenance Decision-Making
6. Long Wang (Aerospace program) – Model-Based Decision-Making For Aerospace Military Engagements

CONSULTING

I have served as a consultant on projects at companies that include:
ACLU, Lextant, LaBarge, Lucent, Philip Randolph Institute, Nationwide Services, Timken, and Net Jets.

Accomplishments included:

1. Led team to significantly reduce average patient chart mistakes and average discharge times at a community hospital and significantly reduced errors in the patient charts.
2. Proposed and led the implementation in 2008 a principled approach for deciding how many voting machines are needed and how they should be allocated.
3. Developed methods to forecast accurately maintenance costs associated with an aging fleet of aircraft.
4. Expert witness: Ohio Democratic Party v. Husted, League of Women Voters v. North Carolina (with NAACP helping to clarify disenfranchisement in 2015 and overturned a racist law, supreme court supports ruling 2016), and Fleming v. Gutierrez.

OTHER HONORS AND SERVICE

Ohio State Senate Apportionment Ad Hoc Advisory Committee 2010
Featured on "The Big Story" in Columbus 10TV News, WOSU, and NYT & Dispatch front page article
Vice chairperson of Academic Relations of the Public Programs and Processes Section of INFORMS
Editorial board of the *International Journal of Industrial & Systems Engineering*
Editorial board of the *International Journal of Software and Systems Engineering*
Editorial board of the *Journal of Experimental Design and Process Optimisation*
Selected to Standard & Poor's Society of Industry Leaders
Elected Council Member for two, two year terms, INFORMS Quality, Statistics & Reliability Section,
Local Arrangements Chair – 2006 ASQ Fall Technical Conference
Member: INFORMS, ASQ, ASA, The Sierra Club, MoveOn, Ford Motor Company Fellowship
Edwin Pauly Merit Scholarship (UCLA), Physics Scholar Award (UCLA), Sigma Xi
Active reviewer for: *Bioinformatics*, *IIE Transactions*, *Technometrics*, *JQT*, *IJQSR*, *QE*, and *CDSA*.

Graduated Thesis or Project Option Masters Students

1. Tianyu Jiang (2017). Data-Driven Cyber Vulnerability Maintenance of Network Vulnerabilities with Markov Decision Processes.
2. Enhao Liu (2017). Logistic Regression Model for Predicting Warning "Incident" Rates and Implications for the Common Vulnerability Scoring System Ph.D. Student in ISE.
3. Nachiket Deshpande (2016). Project.
4. Adhithya Madurai Venkatesan (2016). Project. Improvement Advisor Fedex.
5. Chandrasekaran Raghuram (2016). Project. DHL Supply Chain.
6. Sara Vinson (2015). Project. Unilever, Management Engineering
7. Yingcan Liu (2015). Project.
8. Raqab, Alah (2014). Gaining Monitoring Capabilities and Insights into Responses From Phishing Data."
9. Zugeldar, Thomas (2012). Lean Six Sigma Literature: A Review and Agenda for Future Research."
10. Ravi Kanth Rachakonda (2009). Crew Rostering Problem: A Random Key Genetic Algorithm with Local Search. thesis.
11. Richards, Gavin (2005). Bayesian regression diagnostics" project.

12. Zheng, Ning (2005). Subset Selection and Optimization For Selecting Binomial Systems Applied to Supersaturated Design Generation" thesis.
13. Ahuja, Anita (2004). Data Mining and OR Methods for Scheduling Jobs at a Fashion Distribution Center. project.
14. Treaster, Allegra (2004). New Methods for On-Line Experimentation Applied to Flux Core Arc Welders for Ship Panel Production. thesis.
15. Kumar, Amarendra. Graphical Comparison of Non-sequential Procedures for Response Surface Investigation. Spring 2003 (thesis).
16. Ventakataraman, Karthik. A Method for Robust Interface Design. Winter 2003 (project).
17. Metha, Gautam. An Application of Experimental Design to Optimize A Web Site. Autumn 2002 (project).
18. Joshi, Chaitanya. Modeling Six Sigma-Type Methodologies. Autumn 2002 (project).
19. Chivate, Chetan. Optimal Design of Focus Group Studies to Minimize Errors in Predicting Demand. expected Summer 2002 (project).
20. Kusumakar, Hari. Portfolio Selection Using Simulation Optimization. Spring 2002 (project).
21. Schmidt, John. The Sensitivity of Expected Prediction Accuracy to Assumptions. Winter 2002 (project).
22. Padwal, Sachin. Applying Experimental Design to Optimize Interface Usability of Statistics Software. Winter 2001 (project).
23. Sharma, Deepak. Optimal Experimental Design Applied to HVAC Case Joining Decision-Making. Summer, 1999 (thesis).

Other Advised Students

Served as principal adviser for numerous other M.S. students. Served as graduate representative, committee, member and other similar functions for numerous students.

SPONSORED RESEARCH

PI on $1.8M on Awarded Research for OSU (Includes $170,000 of $0.9M Awarded not delivered from DOE)
Co-PI on $0.3M on Awarded Research for OSU

Past and Current Projects (OSU Cost Share Not Included in the Award Amounts)

Improving Service Quality with Translational Data Analytics
($50,000 – GE Appliances PI 2017-2018)

Extension and Application of Vulnerability Control System to ARCYBER Defense
($93,000 – NSF PI 2016-2017)

VBA Software for Mixing and Prediction Decision-Making
($68,000 – Under review Allied Minerals PI 2015-2016)

Proposal to Supply SMERT Analysis NIE in Relation to W9124N-15-T-0033
($100K over 1 year, Army Research Laboratory PI 2015-2016)

Data-Driven Cyber Vulnerability Maintenance
($516K over 4 years, NSF co-PIs Cathy Xia and Rajiv Ramnath 2014-2018)

Data-Driven Cyber Vulnerability Maintenance – Transition to Practice
($77K over 4 years, NSF co-PIs Cathy Xia and Rajiv Ramnath 2014-2018)

Scheduling Software and Methods for Injection Molding and Stamping
($75K over 1 year, Honda North America, 2013-2014)

Major Upgrade – Making SKO Faster Through Improved Core and New Methods
($24K for 1 year from Honda of America with 25% from the Honda Partnership, 2013)

Software and Methods for Modeling Customer Decision-Making and Issues
($64K/year from the Nationwide Center for Advanced Customer Insights, 2012-13)

Further Extension of Honda of America Black Box Simulation Methods
($24,000 from Honda of America with 25% from the Honda Partnership, 2012)

Adding Optimization Functions to Simulation Software at Honda of America
($24,000 from Honda of America with 25% from the Honda Partnership, 2011)

Enhanced Design of Experiments Laboratories Using Blended Learning
($12,800 from the OSU College of Engineering, 2010)
Illustrating and Applying Simulation at Nestle
($65,000 from Nestle, Higle is PI 2010-11)
Enhanced Simulation Laboratories Using Blended Learning
($11,800 from the OSU College of Engineering, 2009)
Multidisciplinary, Multi-Fidelity Analysis and Integration of Aerospace Vehicles
($36.7K for OSU from Near Inc. funded by AFOSR, 2009-2010)
Improving Honda of America Simulation Efficiency
($16.7K for OSU from Honda of America Inc., 2009-2009)
Exploring freestyle text topic models and human computer
($36.7K for OSU from Lextant, PI 2007)
Make-Buy and Supply Chain Modeling for Furniture Makers
($54,661 for OSU from Feng Sheng International, 2006-2009)
Determining Appropriate Specifications for Welding Aluminum Tubes at USEC
($30K for OSU from the Edison Welding Institute, 2006)
The Development and Application of Advanced Design of Experiments Methods to More Effectively Bleach Wood
(~$65K for OSU from Feng Sheng International, 2005-2006)
Fatigue Resistant, Energy Efficient (awarded but then the area dissolved, funding only partial and for the partners)
($0.9M with $170K for OSU, Department of Energy thru Caterpillar, Co-PIs Farson, Richardson, 2003-2006)
Welding Process Modeling and Robust Design
($200K, The State of Ohio through the Edison Welding Institute, Farson is PI, 2003-2006)
6sigma Methods Development and Application to Welding Processes (CRP)
($209K over 3 years from the Edison Welding Institute, EWI, including $45K at EWI, 2000-02)
Methods for Knowledge Based GMAW Parameter Optimization
($119K awarded much less received over 2 years from the Naval Joining Center, Richardson is PI, 2000-02)
Weld Sizing Technology for Arc Welding Production Robustness (CRP)
($10K over 1 year from EWI and $150K at EWI, 2000-01)
Optimal Statistical Decision-Making for Welding Process Design – Continuation
($30K over 2 years from EWI, 1999-00)
Software for Design of Experiments and Optimization of Welding Processes
($11,051 over 2 years from EWI, 1999-01)
Statistical Process Control for Arc Welding of Tank Turrets
($2K over 1 year from EWI, 1999)
Regression and Neural Net Modeling for a Resistance Welding Application
($4K over 1 year from EWI, 1999)
Knowledge Based Welding Process Optimization
($77K over 1 year from EWI including $67K at EWI, Yapp is Co-PI, 1998-99)
New Experimental Methods Applied to HVAC Case-Joining – Continuation
($30K over 1 year from Visteon Co. a subsidiary of Ford Motor Co., 1998-99)
Optimal Statistical Decision-Making for Welding Process and Production Systems Design
($16K over 1 year from EWI, 1998-99)
New Experimental Methods Applied to HVAC Case Joining
($35K over 1 year from Ford Motor Co., 1997-98)
Efficient Methods for Constructing KBS Inputs Applied to HVAC Odor Reduction
($28K over 1 year from Ford Motor Co., 1997-98)
Weld Process Optimization
($5K over 1 year from EWI, Profs. Richard Richardson and Gary Maul PI's, 1997-98)
Optimal Experimental Design for Arc Welding
($25K over 1 year from OSU Seed Grant, 1998-99)
Developing a Standard Test for Weld Cracking
($5K over 1 year from EWI, Lippold PI, 1998)

Interactive Web-based Software to Teach Experimental Data Analysis in Engineering Design
($1K over 1 year from OSU Faculty Innovator Grant, 1998-99)

Continuing Education for Industry

Short Courses: Design of Experiments, one-day course for practicing engineers, sponsored by the Edison Welding Institute and the Society of Manufacturing Engineers, September, 1997.

Design of Experiments and Taguchi Methods, one day course for practicing engineers, sponsored by The Ohio State University, February 1998.

ORGANIZED SESSIONS

1. Co-Cluster Chair Social Media Analytics Section, INFORMS 2017. 22+ sessions involving approximately 80 speakers.
2. "Social Media Analytics Best Papers Finalist Competition. INFORMS 2015.
3. "Optimization and Modeling For Election Systems. INFORMS Conference (Invited) – Public Programs, Service and Needs Section, 2014.
4. "Optimization and Modeling for Individual Decision-Making. INFORMS Conference (Invited) – Social Media Analytics Section, 2014.
5. INFORMS Midwest Regional Conference (2011), Cluster Chair for Quality Statistics and Reliability, 5 sessions, 17 speakers.
6. "Optimal DOE in Computer Science and Bioinformatics. *INFORMS Conference*, Pittsburg, 2006.
7. "Quality Applications and Methods. *INFORMS Conference*, Pittsburg 2006.
8. "Experimentation for Profit. *INFORMS Conference*, San Jose, California, November 2002.
9. "FasterBetterCheaper Experimentation. *INFORMS Conference*, Miami, Florida, November 2001.
10. "Six Sigma Methods Development and Applications to Manufacturing Processes. *INFORMS Conference*, San Antonio, Texas, November 2000.
11. "Optimal Design of Experiments for and from Simulation Optimization. *INFORMS Conference*, San Antonio, Texas, November 2000.
12. "Recent Work in Experimental Design – Three Sessions. in collaboration with Bruce Ankenman (Northwestern University) and Kurt Palmer (USC), *INFORMS Conference*, Salt Lake City, Utah, May 2000.
13. "Simulation-Based Objectives for Optimal Experimental Design. *INFORMS Conference*, Cincinnati, Ohio, May 1999.
14. "Modeling Manufacturing Systems for Quality Improvement. *INFORMS Conference*, Cincinnati, Ohio, May 1999.

SELECTED PRESENTATIONS (WITH NO PROCEEDINGS)

1. Allen, T. T. (2017). How to Get Published in Social Media Analytics. Invited Panel, INFORMS Houston.
2. Allen, T. T., Y. Muer, S. Huang (2017). Towards Rigorous Standards for Voting Resource Apportionment and Allocation. NIST Invited Presentation, June Maryland.
3. Allen, T. T., O. Hernandez, D. Samuelson, C. Saie, and J. Alt (2017). Assessing Cyber-Threats Using Fusion of Control Charts. Military Operations Research Conference, West Point.
4. Allen, T. T., O. Hernandez, D. Samuelson, C. Saie, and J. Alt (2017). Cyber-Threat Wargames at the Brigade Level. Military Operations Research Conference, West Point.
5. Allen, T. T., O. Hernandez, D. Samuelson, C. Saie, and J. Alt (2017). Optimization and Charting Methods to Focus Cyber Threat Detection. Military Operations Research Conference, West Point.
6. Allen, T. T. (2017). Topic Models and SMERT. TRADOC Text Modeling Workshop, NPS, Monterey, California.
7. Allen, T. T. (2017). Operations Research and Voting Systems Applications. Invited Presentation the Student Chapter of the Institute of Industrial and Systems Engineers, Ohio State University Chapter.
8. Allen, T. T. (2017). Data-Driven Cyber Vulnerability Maintenance. Invited Presentation, Internet 2, May Washington, D.C.

9. Allen, T. T. (2016). Using Innovative Text Analytics on a Military Specific Corpus. Military Operations Research Conferences, Quantico, West Virginia.
10. Allen, T. T. (2016). Efforts to Discouraged Black Voters in OH, NC, and MI and Stopping Them. What Do You Have To Lose? The Black Vote and the Election: Simone Drake Panel.
11. Shijie, H. and T. T. Allen (2016). Generalized Binary Search with Indifference Zones So All Can Wait Less than 30 Minutes. Invited Presentation, INFORMS, Nashville.
12. Allen, T. T. (2016). Operations Research Meets Voting Laws in the U.S.A.: NAACP v. Mccrory, Arizona, and Others. Invited Presentation, INFORMS, Nashville.
13. Roychowdhury, S. and T. T. Allen (2016). Innovative Scheduling and Kriging-Based Optimization Methods in VBA. Invited Presentation, INFORMS, Nashville.
14. Hariharan, A. and T. T. Allen (2016). Regression Models for Cyber Attack Prediction Based on Twitter. Invited Presentation, INFORMS, Nashville.
15. Sui, Z. and T. T. Allen (2016). NLP, LDA, SMERT, k-Means and Efficient Estimation Methods with Military Applications. Invited Presentation, INFORMS, Nashville.
16. Allen, T. T. (2016). Optimal Learning with Cyber Security Applications. University of Illinois, Industrial Engineering Seminar Series, Champagne.
17. Allen, T. T. and M. Yang (2015). Multiple Resource Type Straddling a Standard with Applications in Election Resource Allocation. Invited INFORMS.
18. Allen, T. T. and M. Yang (2015). Multiple Resource Type Straddling a Standard with Applications in Election Resource Allocation. Invited INFORMS.
19. Roychowdhury, S. and Allen, T. T. (2015). Heuristic Methods For Automotive Stamping Scheduling. Contributed INFORMS.
20. Allen, T. T. and Hou, C. (2015). Data-driven Markov Decision Processes Applied to Cyber Vulnerability Maintenance. Invited INFORMS.
21. Hou, C. and Allen, T. T. (2015). Cyber Vulnerability Maintenance Policies for Universities. Invited INFORMS.
22. Sui, Z., Milam, D., and Allen, T. T. (2015). A Visual Monitoring Technique Based on Importance Score and Twitter Feeds. Invited INFORMS.
23. Allen, T. T. (2014). Feasible Allocation thru Iterative Relaxations with Election Systems. Informs Annual Meeting in San Francisco.
24. Allen, T. T. (2014). SMERT Modeling of Stephen Colbert Tweets. Informs Annual Meeting in San Francisco.
25. Zugelder, T. and T. T. Allen (2011). Lean Six Sigma Literature Review and Synthesis Revisited. Midwest INFORMS 2011, Columbus, Ohio August.
26. Artis, S., T. T. Allen, A. Afful-Dadzie, and Y. Allam (2011). Results From a Randomized Experiment Involving Blended Learning Discrete Event Simulation Software. Midwest INFOR
27. Afful-Dadzie, A. and T. T. Allen (2011). Simulation and Control Charting of Cyber Vulnerabilities and Attacks. Midwest INFORMS 2011, Columbus, Ohio August.
28. Xiong, H. and T. T. Allen. Combining Subject Matter Expert Experimental Data with Standard Data in Bayesian Mixture Modeling with Applications In Quality Engineering. Midwest
29. Probabilities with Applications for the Insurance Industry. Midwest INFORMS 2011, Columbus, Ohio August.
30. Lee, S. H. and T. T. Allen (2011). Statistical Process Control Charting of Markov Chain Transition
31. School of Industrial Engineering at UNIBE (Universidad Iberoamericana) in the Dominican Republic.
32. Allen, T. T. (2011). OR / Lean Six Sigma Applications for Process Design: Electronics, Health Care, and Food Production". Keynote Presentation. Engineering Convergence Seminar
33. Afful-Dadzie, A. and T. T. Allen (2011). Parallels Between Cyber Vulnerabilities and Attacks and Tool Degradation and Failure, Amstat Spring Research Conference, Evanston, Illi
34. Allen, T.T. and H. Xiong (2011). SMERT Clustering Models Have Steering Wheels. Contributed Presentation, Amstat Spring Research Conference, Evanston, Illinois, June.
35. Allen, T. T. (2010). Human Assisted Modeling and SMERT Models with Applications in Text and Image Analysis" ISE Departmental Seminar.
36. Allen, T. T. (2010). Pareto Charting Using Unsupervised, Freestyle Text Data and Bayesian Mixture Modeling. JRC 2010 at NIST.
37. Allen, T. T. (2009). Genetic Experimentation and Directed Bayes Modeling. Georgetown University Department of Biostatistics, Bioinformatics and Biomathematics.
38. Allen, T. T. (2009). Exploratory Data Analysis at the Border Between Statistics and Optimization. ASQ Fall Technical Conference, Indianapolis, Indiana.

39. Allen, T. T., M. Bernshteyn, M. Damschroder, and K. Cotton. Using Simulation to Determine the Number of Voting Machines in Franklin, Ohio. Invited presentation at the INFORMS
40. Zheng, N. and T. T. Allen. Topic Model Supervision Using Anti-Words. Invited presentation at the INFORMS Annual Meeting 2008.
41. Rajagopalan, R. and T. T. Allen. Physics-based Response Oriented Bayesian Empirical Surfaces. Invited presentation at the INFORMS Annual Meeting 2008.
42. Tseng, S. and T. T. Allen. A Simple Bayesian Regression Diagnostic to Account for Bias. Invited presentation at the INFORMS Annual Meeting 2008.
43. Ferhatosmanoglu, N. and T. T. Allen. Discrete Choice Models for User-Centric Search Engines. Invited presentation at the INFORMS Annual Meeting 2008.
44. Taslim, C. and T. T. Allen. Optimally Designed Perturbations for Uncovering Genetic Networks and Inverse Estimation. Invited presentation at the INFORMS Annual Meeting 2008.
45. Ferhatosmanoglu, N. and T. T. Allen. Generalized A-Optimality and Hybrid Designs for Two-Color Microarrays. Invited presentation at the INFORMS Annual Meeting 2008.
46. Allen, T. T. and N. Zheng. Process Control Using Free-Style Text and Topic Models. INFORMS speakers program, WINFORMS, Washington, D.C. 1/08.
47. Allen, T. T. and J. Brady. Meso-Analysis Analysis of Six Sigma Project Databases. Invited IERC 2007 Presentation.
48. Schenk, J. and T. T. Allen. Consequence-Likelihood Diagrams for After-Action Reporting of Incident Response. Invited IERC 2007 Presentation.
49. Tseng, S. and T. T. Allen. Optimal Focus Group Design to Augment Demand Data. INFORMS Annual Meeting 10/06.
50. Taslim, C. and T. T. Allen. Optimal Design of Experiments for System Identification Applied to Transcriptional Network Modeling. INFORMS Annual Meeting 10/06.
51. Ferhatosmanoglu, N. and T. T. Allen. Optimal Design of cDNA Microarray Experiments. INFORMS Annual Meeting 10/06.
52. Rajagopalan R. and T. T. Allen. Multi-Fidelity Inverse Engineering With Nanotechnology and Other Applications. INFORMS Annual Meeting 10/06.
53. Brady, J., T. T. Allen, and J. Schenk. Meso-Analysis Analysis of Six Sigma Projects and Resilience Modeling. INFORMS Annual Meeting 10/06.
54. Allen, T. T., M. Bernshteyn, S. Hertzberg. High Quality Voting Machine Allocation Applied in Ohio. INFORMS Annual Meeting 10/06.
55. Zheng, N. and T. T. Allen. Fast Optimal DOE Using Search Engine Technology. INFORMS Annual Meeting 10/06.
56. Huang, D., T. T. Allen, and R. E. West. Artificial Intelligence and Algorithms to Optimize Expensive BlackBox Functions. INFORMS Annual Meeting 10/06.
57. Allen, T. T. and M. Megimose-McClay. Improving the Hospital Discharge Process: A Case Study. ASQ Fall Technical Conference, Columbus, Ohio 10/06.
58. Allen, T. T., M. Bernshteyn, and S. Hertzberg. Optimally Allocating Voting Machines to Precincts In Future Presidential Elections. INFORMS Invited Presentation, San Francisco,
59. Allen, T. T.. New Practical Solution Methods, Objectives, and Fractional Factorials. ASQ Fall Technical Conference, Roanoke, Virginia 10/04.
60. Chantarat, N., T. T. Allen, N. Zheng. A New Class of Response Surface Designs for Systems Involving Quantitative and Qualitative Factors. INFORMS Annual conference, Atlanta, G
61. Allen, T. T. and J. Brady. Deriving DMAIC Using Markov Decision Processes. ASQ Fall Technical Conference, El Paso, Texas 10/03.
62. Allen, T. T.. Design Issues in Split Plot Experimentation. American Statistical Association Joint Statistical Meeting, San Francisco, California - Invited Paper Presentation,
63. Allen, T. T.. Roles for Simulation Optimization in the 'Next Generation' of Experimental Planning Techniques. Invited Session Sponsored By College of Simulation, INFORMS.
64. Allen, T. T.. The Foundations of Design of Experiments: A Review. INFORMS Conference, San Jose, California, 11/02.
65. Allen, T. T. and M. Bernstheyn. A Comparison of Alternative Methods for Constructing Meta-Models for Computer Experiments. INFORMS in Miami, 11/01.

66. Bernstheyn, M. and T. T. Allen. Heuristics for Simulation Optimization: Methods and Review. INFORMS in Miami, 11/0.
67. Schmitz, J., M. Bernshteyn, and T. T. Allen. Sequential Methods for Mixture Experiments With Process Variables. INFORMS in Miami, 11/01.
68. Chantarat, N. and T. T. Allen. Sequential Methods for Mixture Experiments With Process Variables. INFORMS in Miami, 11/01.
69. Bernshteyn, M. and T. T. Allen. Supersaturated Designs that Directly Maximize the Probability of Identifying Active Factors. INFORMS in San Antonio, 11/00.
70. Ribardo, C. and T. T. Allen. Desirability-Based Methods that Address Process Variability and Methods Comparison for Arc Welding Parameter Optimization. INFORMS in San Antonio,
71. Ittiwattana, W. and T. T. Allen. Robust Optimization to Achieve the Appropriate Sigma Level. INFORMS in San Antonio, 11/00.
72. Allen, T. T.. Roles for Simulation Optimization & Methods Development within the Six Sigma Framework. INFORMS in San Antonio, 11/00.
73. Brady, J. and T. T. Allen. Optimal Tolerance Design of RF Circuits. INFORMS in Salt Lake City, 5/00.
74. Bernshteyn, M. and T. T. Allen. Low Cost Alternatives to Simplex Designs Based on Stochastic Optimization of the EIMSE Objective. INFORMS in Salt Lake City, 5/00.
75. Ittiwattana, W. and T. T. Allen. An Expert System to Support Statistics & Optimization Applications in Welding Process Design. INFORMS in Salt Lake City, 5/00.
76. Allen, T. T.. Applications of Low Cost Response Surface Methods (LCRSM) and Stochastic Optimization for Robust Machine Design (RMD). INFORMS in Salt Lake City, 5/00.
77. Allen, T. T.. A New Look at Optimal Design of Experiments. The ASA Spring Research Conference, 6/99.
78. Bernshteyn, M. and T. T. Allen. Design of Experiments from the Stochastic Programming Point of View. The ASA Spring Research Conference, 6/99
79. Yu, L. and T. T. Allen. Low Cost Response Surface Methods. The ASA Spring Research Conference, 6/99.
80. Allen, T. T.. A New Look at Optimal Design of Experiments. INFORMS Conference, Cincinnatti, Ohio, 5/99.
81. Allen, Theodore T.. The Future of Optimal Experimental Design. INFORMS Conference, Seattle, Washington, 11/98.
82. Allen, T. T. and G. Herrin. “The Applicability of Commonly Used Experimental Designs. INFORMS Conference, Detroit, Michigan, 10/94.