C. Richard Cassady, PhD
University Professor of Industrial Engineering
University of Arkansas
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ACADEMIC BACKGROUND

Education
PhD, Industrial and Systems Engineering, Virginia Tech, 1996
MS, Industrial and Systems Engineering, Virginia Tech, 1993
BS summa cum laude, Industrial and Systems Engineering, Virginia Tech, 1992

Tenure-Stream Academic Appointments
University Professor, Dept. of Industrial Engineering, University of Arkansas, 2019-present
Professor, Dept. of Industrial Engineering, University of Arkansas, 2008-2019
Associate Professor, Dept. of Industrial Engineering, University of Arkansas, 2004-2008
Tenured, Dept. of Industrial Engineering, University of Arkansas, 2004-present
Assistant Professor, Dept. of Industrial Engineering, University of Arkansas, 2000-2004
Assistant Professor, Dept. of Industrial Engineering, Mississippi State University, 1996-2000

Workload Assignments
55% service, 45% teaching, 0% research, 0% administrative (2007-present)
20% service, 40% teaching, 40% research, 0% administrative (1996-2007)

Current Activities of Note
Director, First-Year Engineering Program (since 2006)
Industrial Engineering Capstone Experience Coordinator (since 2016)
Chair, Industrial Engineering Undergraduate Studies Committee (since 2014)
Regional Partner, FIRST Tech Challenge Arkansas (since 2018)
Regional Co-Partner, FIRST LEGO League Arkansas (since 2015)
Regional Partner, FIRST LEGO League Jr. Arkansas (since 2018)
Tournament Director, FIRST LEGO League Razorback Invitational (since 2015)
Coach, FIRST Tech Challenge Team 9879 (since 2015)
Coach, FIRST LEGO League Team 404 (2011-2017, 2019-present)
Member, Industrial and Systems Engineering Advisory Board, Virginia Tech (since 2016)

Past Activities of Note
Chair, Board of Directors, Reliability and Maintainability Symposium (2011-2012)
General Chair, Reliability and Maintainability Symposium (2010-2011)
Management Committee, Reliability and Maintainability Symposium (1998-2010)
Director, College of Engineering Honors Program (2016-2018)
Coach, Don Tyson School of Innovation FIRST LEGO League Teams (2017-2019)
Mentor, FIRST Robotics Competition Team 3612 (2013-2015)

AWARDS AND HONORS

National/International
Albert G. Holzman Distinguished Educator Award
- Institute of Industrial and Systems Engineers, 2016
- "Recognizes educators who contributed significantly to the profession through teaching, research and publication, extension, innovation, or administration" (IISE)

Fellow Award
- Institute of Industrial and Systems Engineers, elected in 2012
- "Recognizes outstanding leaders of the profession who have made significant, nationally recognized contributions to industrial engineering" (IISE)

SRE Fellow
- Society of Reliability Engineers, elected in 2010
- "Designed to recognize those individuals who have made a significant contribution to the SRE and to the Reliability discipline" (SRE)

Participant, National Academy of Engineering Frontiers of Engineering Education Symposium, 2009
- "Symposium bringing together engaged and innovative engineering educators to recognize, reward, and promote effective, substantive, and inspirational engineering education" (NAE)

Plait Tutorial Award, Reliability and Maintainability Symposium, 2015, 2003
- "honors outstanding contributors to the Tutorials program" (RAMS)

Evans-McElroy Best Paper Award, Reliability and Maintainability Symposium, 2013
- overall best RAMS paper

Ofthsun RAMS Best Paper Award, Society of Reliability Engineers, 2017, 2013, 2006, 2001, 1999
- best RAMS paper authored or co-authored by a member of SRE

Quality Control and Reliability Best Paper, Industrial Engineering Research Conference, 2004
- best paper in the tracks managed by the Quality Control and Reliability Division of IISE

Member of Tau Beta Pi and Alpha Pi Mu
- Tau Beta Pi is the premier engineering honor society
- Alpha Pi Mu is the premier industrial engineering honor society

State/Regional

Arkansas FIRST LEGO League Championship Adult Coach/Mentor Award, 2012
- "This award goes to the coach or mentor whose leadership and guidance is clearly evident and best exemplifies the FIRST LEGO League Core Values." (FLL)

Oklahoma FIRST Tech Challenge Compass Award, 2018
- "The Compass Award recognizes an adult Coach or Mentor who has given outstanding guidance and support to a Team throughout the year, and demonstrates to the Team what it means to be a Gracious Professional." (FTC)

School Partner of the Year, Springdale, Arkansas, Public Schools Education Foundation, 2015
- for "contributions to student success (human or financial resources); interaction between the business and school partner; successful on-going programs that promote learning; new, original or innovative projects; and a statement of the impact of the business partnership(s) on the school" (SPSEF)

Friend of Springdale Schools, Springdale, Arkansas, School District, 2012
- "With deep appreciation for his exceptional volunteer service to the Young Elementary School" (SPS)

University/College/Department

Charles and Nadine Baum Faculty Teaching Award, University of Arkansas, 2006
- top teaching award at the University of Arkansas

Distinguished Leadership Award, University of Arkansas Honors College, 2018
- recognition for leadership provided to College of Engineering Honors College initiatives

Faculty Gold Medal, University of Arkansas Office of Nationally Competitive Awards, 2019
- "Each year the Office of Nationally Competitive Awards selects five or six faculty members who consistently (and often successfully) support students through the application process for state and national scholarships, for competitive research grants, or for other forms of recognition." (ONCA)

Fellow, University of Arkansas Teaching Academy, elected in 2006
- "The Teaching Academy consists of faculty members who have been recognized by their peers, colleges and the university for their excellence in teaching, including excellence in classroom teaching." (UATA)

Dean's Award of Excellence, Outstanding Public Service Award, 2017
- top award for public service given by the College of Engineering at the University of Arkansas

Imhoff Outstanding Teacher Award, College of Engineering, 2005
- top award for teaching given by the College of Engineering at the University of Arkansas

Faculty Member of the Year, Arkansas Academy of Industrial Engineering, 2011, 2005
- "The Arkansas Academy of Industrial Engineering (AAIE) was established in 1986 to recognize the achievements of University of Arkansas Industrial Engineering graduates and to provide continuing guidance and support to the Department of Industrial Engineering." (AAIE)

John L. Imhoff Chair, Dept. of Industrial Engineering, 2006-2007
- appointed by the INEG department head

Best Teacher Award, Dept. of Industrial Engineering, 2006, 2005
- selected by the INEG student body

Outstanding Professor Award, Dept. of Industrial Engineering, 2003
- selected by the INEG student body

Outstanding Researcher, Dept. of Industrial Engineering, 2007, 2006, 2005
- selected by the INEG department head

Outstanding Teacher, Dept. of Industrial Engineering, 2004, 2003
- selected by the INEG department head

SERVICE TO THE FIRST-YEAR ENGINEERING PROGRAM

In 2006, I chaired the College of Engineering committee that proposed the creation of the Freshman Engineering Program, a common first-year experience for College of Engineering undergraduates at the University of Arkansas. After the college faculty approved the proposal, I was appointed by Dean Ashok Saxena to be the first Director of the Freshman Engineering Program. In 2018, the program was renamed to be the First-Year Engineering Program.

As Director, I administer both sub-programs of the First-Year Engineering Program – the Academic Program and the Student Services Program. This responsibility includes direct or indirect supervision of two associate directors (one teaching assistant professor and one student services), three professional staff members, two additional teaching assistant professors, two instructors, ten graduate teaching assistants, and approximately eighty peer mentors.

The Academic Program is a two-semester, 30-credit-hour program that includes the two-semester Introduction to Engineering course sequence, and 28 credits of coursework in mathematics, science, English, the fine arts, the humanities, and the social sciences. The coursework offered by First-Year Engineering Program faculty also includes a four-credit engineering-based mathematics course for students who are not calculus-ready, an academic success strategies course for students who are at least two semester behind in mathematics, and two-semester research and innovation experiences for Honors College students who enter the university with advanced placement in mathematics. The Student Services Program provides proactive support to students through peer mentoring, academic coaching, academic advising, and professional development workshops.

Of the new first-year students who entered the College of Engineering during the nine years (1998-2006) prior to the implementation of the First-Year Engineering Program
- 61 percent returned to the College of Engineering for their sophomore year
- 17 percent graduated from the College of Engineering in four years
- 38 percent graduated from the College of Engineering in six years.

For the first eleven (2007-2017) First-Year Engineering Program cohorts
- 70 percent returned to the College of Engineering for their sophomore year.
- 30 percent graduated from the College of Engineering in four years
- 47 percent graduated from the College of Engineering in six years.

SERVICE TO FIRST ROBOTICS

My primary community service activities involve FIRST robotics education, mentoring, and leadership. FIRST (For Inspiration and Recognition of Science in Technology) is designed to inspire young people's interest in STEM thru four levels of robotics programs including FIRST LEGO League Jr. (FLL Jr.), FIRST LEGO League (FLL), FIRST Tech Challenge (FTC), and FIRST Robotics Competition (FRC). For several years, I have provided seminars, workshops, short courses, and summer camps involving LEGO WeDo and MINDSTORMS robotics at local and regional events, as well as the University of Arkansas College of Engineering Summer Camp Program. These activities have reached dozens of coaches, reached hundreds of students in grades 2-7, and resulted in the creation of dozens of FLL and FLL Jr. teams.

In 2011, a colleague and I created our own FLL team, the YoungLings (team 404). The YoungLings were affiliated with Young Elementary School in Springdale, Arkansas, and won four consecutive FLL Arkansas championships during the 2011-2012 thru 2014-2015 seasons. The YoungLings last competed in 2016-2017, but my wife and I restarted team 404 in 2019. Our new team includes students with autism who are all clients at Cassady Children's Center, a pediatric speech, occupational, and physical therapy clinic in Springdale that my wife owns and operates.

In 2015, Dr. Chase Rainwater and I created our own FTC team, Root Negative One (team 9879), affiliated with the Don Tyson School of Innovation in Springdale. Root Negative One won the Oklahoma FTC championship in 2015-2016 season, the Arkansas FTC championship in 2017-2018 season, and the Alabama FTC Championship in 2018-2019. In 2018-2019, they won the FTC World Championship and were selected to be Team USA for the FIRST Global Challenge (FGC) in Dubai. FGC is an Olympics-style robotics tournament that includes one team from each of approximately 180 countries.

My experience in mentoring the YoungLings led to an opportunity to become involved in FLL leadership. Since 2012, I have been the Tournament Director for the FLL Arkansas Springdale Qualifying Tournaments. In 2014, I led the development of a proposal from the First-Year Engineering Program at the University of Arkansas to host an international, invitation-only, FLL tournament. The FLL Razorback Invitational has now been held five times (2015-2019) and brings to the University of Arkansas campus 80 teams and more than 1,000 people, from about 30 of the United States and 10-15 other countries, to the University of Arkansas campus.

In 2015, I accepted the position of Regional Co-Partner of FLL Arkansas. In this role, I am responsible for developing new FLL teams, educating new FLL coaches, and directing the FLL Arkansas Championship Tournament that is held on the University of Arkansas campus. In 2018, I became the Regional Partner for both FLL Jr. Arkansas and FTC Arkansas.

PUBLICATIONS (students are underlined)

Textbook

C.R. Cassady, J.A. Nachlas (2009). *Probability Models in Operations Research*. CRC Press, Boca Raton.

Journal Articles

1. S. Alaswad, C.R. Cassady, E.A. Pohl, X. Li (2017). "A Model of System Limiting Availability under Imperfect Maintenance," *Journal of Quality in Maintenance Engineering*, 23(4), 415-436.
2. K. Schneider, C.R. Cassady (2015). "Comparison of Alternative Fleet-Level Selective Maintenance Models," *Reliability Engineering & System Safety*, 134, 178-187.
3. Y. Xiang, C.R. Cassady, T. Jin, C.W. Zhang (2014). "Joint Production and Maintenance Planning with Machine Deterioration and Random Yield," *International Journal of Production Research*, 52(6), 1644-1657.
4. Y. Xiang, C.R. Cassady, E.A. Pohl (2012). "Optimal Maintenance Policies for a System Subject to a Markovian Operating Environment," *Computers and Industrial Engineering*, 62(1), 190-197.
5. B. McClure, C.R. Cassady, C. Rainwater, J.R. Chimka (2012). "Optimizing the Sunday Singles Lineup for a Ryder Cup Captain," *Interfaces*, 42(2), 180-190.
6. F. Tovia, R.M. Brooks, C.R. Cassady, M.D. Rossetti (2011). "Modeling and Analysis of Service Parts Logistics Systems," *The International Journal of Operations Research*, 10(1), 60-81.
7. L.M. Maillart, C.R. Cassady, C. Rainwater, K. Schneider (2009). "Selective Maintenance Decision-Making over Extended Planning Horizons," *IEEE Transactions on Reliability*, 58(3), 462-469.
8. L.M. Maillart, C.R. Cassady, J. Honeycutt (2008). "A Binomial Approximation of Lot Yield under Markov Modulated Bernoulli Item Yield," *IIE Transactions*, 40(4), 459-467.
9. T.G. Yeung, C.R. Cassady, K. Schneider (2008). "Simultaneous Optimization of $\bar{X}$ Control Charts and Age-Based Preventive Maintenance Policies under an Economic Objective," *IIE Transactions*, 40(2), 147-159.
10. S. Salman, C.R. Cassady, E.A. Pohl, S.W. Ormon (2007). "Evaluating the Impact of Cannibalization on Fleet Performance," *Quality and Reliability Engineering International*, 23(4), 445-457.
11. T.G. Yeung, C.R. Cassady, E.A. Pohl (2007). "Allocating and Deploying Maintenance Resources for a Set of Multi-State Systems," *Military Operations Research*, 12(1), 19-34.
12. N. Sortrakul, C.R. Cassady (2007). "Genetic Algorithms for Total Weighted Expected Tardiness Integrated Preventive Maintenance Planning and Production Scheduling for a Single Machine," *Journal of Quality in Maintenance Engineering*, 13(1), 49-61.
13. E. Cakici, J. Jia, S.J. Mason, C.R. Cassady, L. Pohl, A.J. Lachowsky (2006). "Cellar Tank Piping Network Analysis at E. & J. Gallo Winery," *Journal of Wine Research*, 17(3), 145-160.
14. C.R. Cassady, J.A. Nachlas (2006). "Evaluating and Implementing 3-Level Control Charts," *Quality Engineering*, 18(3), 285-292.
15. M.A. Waller, C.R. Cassady, J. Ozment (2006). "Impact of Cross Docking on Inventory in a Decentralized Retail Supply Chain," *Transportation Research, Part E*, 42(5), 359-382.
16. R. Rajagopalan, C.R. Cassady (2006). "An Improved Selective Maintenance Solution Approach," *Journal of Quality in Maintenance Engineering*, 12(2), 172-185.
17. I.M. Iyoob, C.R. Cassady, E.A. Pohl (2006). "Establishing Maintenance Resource Levels using Selective Maintenance," *The Engineering Economist*, 51(2), 99-114.

18. A.K. Shee, C.R. Cassady (2006). "Assessing the Economic Performance of Continuous Sampling Plans," *Quality Technology and Quantitative Management*, 3(1), 43-52.

19. C.R. Cassady, L.M. Maillart, S. Salman (2005). "Ranking Sports Teams: A Customizable Quadratic Assignment Approach," *Interfaces*, 35(6), 497-510.

20. C.R. Cassady, I.M. Iyoob, K. Schneider, E.A. Pohl (2005). "A Generic Model of Equipment Availability under Imperfect Maintenance," *IEEE Transactions on Reliability*, 54(4), 564-571.

21. C.R. Cassady, E. Kutanoglu (2005). "Integrating Preventive Maintenance Planning and Production Scheduling for a Single Machine," *IEEE Transactions on Reliability*, 54(2), 304-309.

22. N. Sortrakul, H.L. Nachtmann, C.R. Cassady (2005). "Genetic Algorithms for Integrated Preventive Maintenance Planning and Production Scheduling for a Single Machine," *Computers in Industry*, 56(2), 161-168.

23. C.R. Cassady, E.A. Pohl, S. Jin (2004). "Managing Availability Improvement Efforts with Importance Measures and Optimization," *IMA Journal on Management Mathematics*, 15(2), 161-174.

24. C.R. Cassady, I.G. Takahashi, E.A. Pohl (2003). "Reliability Analysis of Intermittently-Used Products," *International Journal of Modelling and Simulation*, 23(4), 234-239.

25. C.R. Cassady, E. Kutanoglu (2003). "Minimizing Job Tardiness using Integrated Preventive Maintenance Planning and Production Scheduling," *IIE Transactions*, 35(6), 505-513.

26. C.R. Cassady, J.A. Nachlas (2003). "Evaluating and Implementing 3-Level Acceptance Sampling Plans," *Quality Engineering*, 15(3), 359-367.

27. C.R. Cassady (2003). "Judges' Commentary: The Outstanding Airport Screening Papers," *The UAMP Journal*, 24(2), 185-188.

28. S.W. Ormon, C.R. Cassady, A.G. Greenwood (2002). "Reliability Prediction Models to Support Conceptual Design," *IEEE Transactions on Reliability*, 51(2), 151-157.

29. C.R. Cassady, E.A. Pohl, W.P. Murdock (2001). "Selective Maintenance Modeling for Industrial Systems," *Journal of Quality in Maintenance Engineering*, 7(2), 104-117.

30. C.R. Cassady, W.P. Murdock, E.A. Pohl (2001). "Selective Maintenance for Support Equipment Involving Multiple Maintenance Actions," *European Journal of Operational Research*, 129(2), 252-258.

31. D.W. Graham, C.R. Cassady, R.O. Bowden, S.A. LeMay (2000). "Modeling Intermodal Transportation Systems: Establishing a Common Language," *Transportation Law Journal*, 27(3), 353-366.

32. W.B. Jones, C.R. Cassady, R.O. Bowden (2000). "Developing a Standard Definition of Intermodal Transportation," *Transportation Law Journal*, 27(3), 345-352.

33. C.R. Cassady, R.O. Bowden, L. Liew, E.A. Pohl (2000). "Combining Preventive Maintenance and Statistical Process Control: A Preliminary Investigation," *IIE Transactions*, 32(6), 471-478.

34. C.R. Cassady, L.M. Maillart, I.J. Rehmert, J.A. Nachlas (2000). "Demonstrating Deming's *kp* Rule using an Economic Model of the CSP-1," *Quality Engineering*, 12(3), 327-334.

35. J.A. Nachlas, C.R. Cassady (1999). "Preventive Maintenance Study: A Key Component in Engineering Education to Enhance Industrial Productivity and Competitiveness," *European Journal of Engineering Education*, 24(3), 301-311.

36. C.R. Cassady, J.E. Kobza (1998). "A Probabilistic Approach to Evaluate Strategies for Selecting a Parking Space," *Transportation Science*, 32(1), 30-42.

Conference Papers (presenter marked with an asterisk)

1. Z. Zhu*, Y. Xiang, S. Alaswad, C.R. Cassady (2017). "A Sequential Inspection and Replacement Policy for Degradation-Based Systems," *Proceedings of the Annual Reliability and Maintainability Symposium*. **Note: This paper received the Stan Ofthsun Award for Best RAMS Paper from the Society of Reliability Engineers.**

2. A.L. Gaines*, H.A. Schluterman, C.R. Cassady (2014). "Assessment of Peer Mentoring Program at University of Arkansas," *Proceedings of the 6th FYEE Conference*.

3. T. Jin*, Y. Xiang, R. Cassady (2013). "Understanding Operational Availability in Performance-Based Logistics and Maintenance Services," *Proceedings of the Annual Reliability and Maintainability Symposium*. **Note: This paper received the Ralph A. Evans-P.K. McElroy Best Paper Award for RAMS and the Stan Ofthsun Award for Best RAMS Paper from the Society of Reliability Engineers.**

4. K. Schneider*, H.A. Schluterman, C.R. Cassady (2012). "Designing a Theme-Based Introduction to Engineering Course Sequence," *Proceedings of the 2012 Midwest Section Conference of the American Society for Engineering Education*.

5. H.A. Schluterman, K. Schneider*, C.R. Cassady (2011). "Evaluating Retention of Engineering Problem Solving Skills of First-Year Engineering Students," *Proceedings of the 2011 Midwest Section Conference of the American Society for Engineering Education*.

6. N.K. Klingbeil*, S.C. Molitor, B.W. Randolph, S.A. Brown, R.G. Olsen, C.R. Cassady (2011). "The Wright State Model for Engineering Mathematics Education: Highlights from a CCLI Phase 3 Initiative, Volume 2," *Proceedings of the 2011 ASEE Annual Conference & Exhibition*.

7. H.A. Schluterman*, K. Schneider, C.R. Cassady (2010). "Evaluating Engineering Problem Solving Skills of First-Year Engineering Students," *Proceedings of the 2010 Midwest Section Conference of the American Society for Engineering Education*.

8. C.R. Cassady, G. Secuban* (2010). "Analysis of Freshman-to-Sophomore Retention in Year Two of a First-Year Engineering Program," *Proceedings of the 2010 ASEE Annual Conference & Exhibition*.

9. J.A. Nachlas*, C.R. Cassady (2010). "A General Framework for Modeling Equipment Aging," *Proceedings of the Annual Reliability and Maintainability Symposium*.

10. D. St. John*, C.R. Cassady (2010). "Analysis of Customized Warranty Policies for Heterogeneous Populations," *Proceedings of the Annual Reliability and Maintainability Symposium*. **Note: This paper received 2nd place in the RAMS student paper competition.**

11. K. Schneider*, H.A. Schluterman, C.R. Cassady (2009). "A First-Year Experience Course Sequence for Engineering Students at the University of Arkansas," *Proceedings of the 2009 Midwest Section Conference of the American Society for Engineering Education*.

12. C.R. Cassady*, S.W. Mulvenon (2009). "Initial Analysis of Freshman-to-Sophomore Retention in a New First-Year Engineering Program," *Proceedings of the 2009 ASEE Annual Conference & Exhibition*.

13. K.M. Sullivan, C.R. Cassady* (2009). "The CMS+ System for Ranking College Football Teams," *Proceedings of the 2009 Industrial Engineering Research Conference*.

14. Y. Xiang*, C.R. Cassady, L.M. Maillart (2008). "A Production System with Random Yield and Equipment Deterioration: Single Period," *Proceedings of the 2008 Industrial Engineering Research Conference*.

15. P. Yu*, J.J. Song, C.R. Cassady (2008). "Bayesian Reliability and Maintainability Parameter Estimation for a Repairable System under Imperfect Maintenance," *Proceedings of the Annual Reliability and Maintainability Symposium*.

16. K. Schneider*, L.M. Maillart, C.R. Cassady (2007). "The Re-Use of Single-Use Medical Devices," *IIE Annual Conference and Exibition 2007 Proceedings*.

17. Y. Xiang*, C.R. Cassady (2007). "Comparing Scheduled and Condition-Based Maintenance Policies for Single-Unit Systems Operated in Markovian Environments," *IIE Annual Conference and Exhibition 2007 Proceedings*.

18. Y. Xiang*, C.R. Cassady (2007). "Time to Failure Behavior under a Stochastic Deterioration Model," *Proceedings of the Annual Reliability and Maintainability Symposium*.

19. M. Carrasco*, C.R. Cassady (2006). "A Study of the Impact of Prognostic Errors on System Performance," *Proceedings of the Annual Reliability and Maintainability Symposium*. **Note: This paper received the Stan Ofthsun Award for Best RAMS Paper from the Society of Reliability Engineers.**

20. K. Schneider*, C.R. Cassady (2005). "Designing and Implementing a First Year Experience Course in Industrial Engineering," *Proceedings of the 2005 Midwest Section Conference of the American Society for Engineering Education*.

21. T.G. Yeung*, C.R. Cassady (2005). "Modeling the Impact of Technological Evolution for Repairable Systems," *IIE Annual Conference and Exhibition 2005 Proceedings*.

22. C. Rainwater*, J. Honeycutt, C.R. Cassady and S.J. Mason (2004). "Solving Selective Maintenance Problems for Fleets of Systems," *IIE Annual Conference and Exhibition 2004 Proceedings*. **Note: This paper received the conference's Quality Control and Reliability Best Paper award.**

23. R. Rajagopalan*, C.R. Cassady (2004). "Solving Selective Maintenance Problems," *IIE Annual Conference and Exhibition 2004 Proceedings*.

24. F. Tovia*, C.R. Cassady (2004). "Simulating Regional Service Parts Logistics Systems," *IIE Annual Conference and Exhibition 2004 Proceedings*.

25. S.W. Ormon, C.R. Cassady* (2004). "Cannibalization Policies for a Set of Parallel Machines," *Proceedings of the Annual Reliability and Maintainability Symposium*.

26. K. Schneider*, C.R. Cassady (2004). "Fleet Performance under Selective Maintenance," *Proceedings of the Annual Reliability and Maintainability Symposium*.

27. C.R. Cassady*, J.R. Chimka, P. Yu (2003). "Exploring the Impact of Repair Time Variability on Equipment Performance," *Proceedings of the 17th International Conference on Production Research*.

28. I.M. Iyoob, L.M. Maillart*, C.R. Cassady (2003). "Simulating System Availability under an Opportunistic Replacement Policy," *Proceedings of the 17th International Conference on Production Research*.

29. E.A. Pohl, C.R. Cassady*, M.J. Kwinn, Jr. (2003). "A Selective Maintenance Model for Serial Manufacturing Systems Involving Multiple Maintenance Actions," *Proceedings of the 17th International Conference on Production Research*.

30. I.M. Iyoob*, C.R. Cassady (2003). "Analysis of Equipment Availability under Varying Corrective Maintenance Models," *Proceedings of the Industrial Engineering Research 2003 Conference*.

31. S.W. Ormon*, C.R. Cassady, E.A. Pohl (2003). "Exploring the Effects of Cannibalization on Fleet Performance," *Proceedings of the Industrial Engineering Research 2003 Conference*.

32. <u>K. Schneider</u>*, C.R. Cassady (2003). "Equipment Availability Modeling under a Virtual Age Model," *Proceedings of the Industrial Engineering Research 2003 Conference*.

33. <u>F. Tovia</u>*, C.R. Cassady (2003). "The Value of Information Sharing in a Service Parts Logistics System," *Proceedings of the Industrial Engineering Research 2003 Conference*.

34. <u>P. Yu</u>*, <u>K. Schneider</u>, C.R. Cassady (2003). "Selective Maintenance Strategies for Serial Production Lines," *Proceedings of the Industrial Engineering Research 2003 Conference*.

35. <u>F. Tovia</u>*, C.R. Cassady, E. Kutanoglu (2003). "Inventory Management through Information Sharing and Collaboration," *Proceedings of the 31st International Conference on Computers and Industrial Engineering*, 330-335.

36. M.D. Rossetti*, C.R. Cassady, <u>K. Schneider</u> (2002). "Assessing an Industry-Based IE Senior Design Course," *Proceedings of the 2002 ASEE Annual Conference & Exposition*.

37. C.R. Cassady, <u>K. Schneider</u>*, <u>P. Yu</u> (2002). "Impact of Maintenance Resource Limitations on Manufacturing System Productivity," *Proceedings of the Industrial Engineering Research 2002 Conference.*

38. C.R. Cassady*, E.A. Pohl (2002). "Optimizing Maintenance Resource Levels," *Proceedings of the Industrial Engineering Research 2002 Conference.*

39. D.W. Nutter, C.R. Cassady, G.D. Taylor, <u>C.T. Wong</u>* (2002). "Maintenance Cost Modeling for a Refrigerated Trailer Fleet," *Proceedings of the Annual Reliability and Maintainability Symposium*, 68-73.

40. C.R. Cassady*, E.A. Pohl, <u>J.P. Warren</u> (2001). "Equipment Aging and Availability under Imperfect Maintenance," *Proceedings of the Industrial Engineering Research 2001 Conference.*

41. <u>S.W. Ormon</u>*, C.R. Cassady, A.G. Greenwood (2001). "A Simulation-Based Reliability Prediction Model for Conceptual Design," *Proceedings of the Annual Reliability and Maintainability Symposium*, 433-436. **Note: This paper received the Stan Ofthsun Award for Best RAMS Paper from the Society of Reliability Engineers.**

42. <u>W.F. Rice</u>, C.R. Cassady*, <u>T.R. Wise</u> (1999). "Simplifying the Solution of Redundancy Allocation Problems," *Proceedings of the Annual Reliability and Maintainability Symposium*, 190-194. **Note: This paper received the Stan Ofthsun Award for Best RAMS Paper from the Society of Reliability Engineers.**

43. C.R. Cassady, W.P. Murdock, J.A. Nachlas, E.A. Pohl (1998). "Comprehensive Fleet Maintenance Management," *Proceedings of the IEEE International Conference on Systems, Man and Cybernetics*, 4665-4669.

44. C.R. Cassady*, W.P. Murdock, E.A. Pohl (1998). "A Deterministic Selective Maintenance Model for Complex Systems," *Proceedings of the Fourth ISSAT International Conference on Reliability & Quality in Design*, 194-199.

45. <u>B.K. Smith</u>, C.R. Cassady*, L.L. Crumpton (1998). "A Framework for Modeling the Total Body Fatigue – Human Reliability Relationship," *Proceedings of the Fourth ISSAT International Conference on Reliability & Quality in Design*, 282-287.

46. C.R. Cassady*, J.A. Nachlas (1998). "Preventive Maintenance: The Next Frontier in Industrial Productivity Growth," *Industrial Engineering Solutions '98 Conference Proceedings*, 254-260.

47. <u>W.F. Rice</u>, C.R. Cassady*, J.A. Nachlas (1998). "Optimal Maintenance Plans under Limited Maintenance Time," *Industrial Engineering Research '98 Conference Proceedings*.

48. C.R. Cassady*, <u>L.M. Maillart</u>, R.O. Bowden, <u>B.K. Smith</u> (1998). "Characterization of Optimal Age Replacement Policies," *Proceedings of the Annual Reliability and Maintainability Symposium*, 170-175.
49. C.R. Cassady*, <u>L.M. Maillart</u>, J.A. Nachlas (1997). "A Central Limit Theorem Based Approach to Single Sampling Plan Parameter Selection," *Proceedings of the Sixth Industrial Engineering Research Conference*, 124-128.
50. C.R. Cassady*, J.A. Nachlas (1997). "The Use of Multilevel Discrete Product Quality Measures and Quality Value Functions in Statistical Quality Control," *Proceedings of the Third ISSAT International Conference on Reliability & Quality in Design*, 82-86.
51. J.A. Nachlas, C.R. Cassady*, <u>K.F. Rooney</u> (1995). "Hazard Function Implications of Stochastic Deterioration and Distributed Defect Concentrations," *Proceedings of the Annual Reliability and Maintainability Symposium*, 213-216.
52. C.R. Cassady*, J.A. Nachlas (1994). "The Frequency Distribution of Availability," *Proceedings of the Annual Reliability and Maintainability Symposium*, 278-282.

Book Chapters
1. C.R. Cassady, E.A. Pohl, T.G. Yeung (2008). "Reliability, Maintainability, and Supportability in Logistics," *Logistics Engineering Handbook* (edited by G.D. Taylor), CRC Press, Boca Raton, FL, 22:1-20.
2. C.R. Cassady, W.P. Murdock, E.A. Pohl (2001). "A Deterministic Selective Maintenance Model for Complex Systems," *Recent Advances in Reliability and Quality Engineering* (edited by H. Pham), World Scientific, Singapore, 311-325.

FINANCIAL SUPPORT

1. Recommending NBA Free Agency Decision via Optimal Stopping (State Undergraduate Research Fellowship for B. Satterwhite), Arkansas Department of Higher Education, $3,250, 2019, 100% responsibility (PI).
2. Breaking Barriers: Pathways to Graduation for Underrepresented Talent, National Science Foundation, $599,988, 2008-2010, <1% responsibility, with C. Gattis (PI), S. Davis, J. Hestekin, T. Carter, B. Hill.
3. Adaptive Maintenance in a Sense-and-Respond Logistics Environment, Air Force Office of Scientific Research via the Center for Engineering Logistics and Distribution, $148,727, 2006-2008, 50% responsibility (PI), with E.A. Pohl, N.Z. Gebraael, J. Kharoufeh.
4. Homeland Security for Rural Transportation Networks, Mack-Blackwell Transportation Center, $48,922 ($49,267 matching), 2006-2007, 5% responsibility, with H.L. Nachtmann (PI), E.A. Pohl.
5. A Study of the Impact of Prognostic Errors on System Performance (State Undergraduate Research Fellowship for M. Carrasco), SILO Advisory Council, $2,005, 2006, 100% responsibility (PI).
6. Adaptive Logistics Network Design and Optimization, Air Force Office of Scientific Research via The Center for Engineering Logistics and Distribution, $267,775, 2005-2006, 10% responsibility, with S.J. Mason (PI), J.R. Chimka, E.A. Pohl.
7. Modeling and Simulation Based Framework for Sense and Respond Logistics Concepts, Air Force Office of Scientific Research via the Center for Engineering Logistics and Distribution, 2005-2006, 10% responsibility, with M.D. Rossetti (PI), E.A. Pohl.
8. Comprehensive Selective Maintenance Decision-Making in an Autonomous Environment, Air Force Research Laboratory via The Logistics Institute, $118,841, 2004-2005, 75% responsibility (PI), with E.A. Pohl.
9. Production and Distribution Systems Optimization, E&J Gallo Winery via the Center for Engineering Logistics and Distribution, $150,000, 2004-2006, 25% responsibility, with S.J. Mason (PI).
10. Maintenance Decision-Making under Prognostic and Diagnostic Uncertainty, Air Force Research Laboratory via The Logistics Institute, $120,907, 2003-2005, 75% responsibility (PI), with H.L. Nachtmann, E.A. Pohl.
11. Multi-State Selective Maintenance Decisions, Air Force Research Laboratory via The Logistics Institute, $120,756, 2003-2005, 75% responsibility (PI), with S.J. Mason, E.A. Pohl.
12. Quantifying the Impacts of Improvements to Prognostic and Diagnostic Capabilities, Air Force Research Laboratory via The Logistics Institute, $110,647, 2003-2005, 75% responsibility (PI), with E.A. Pohl.
13. Multi-Mission Selective Maintenance Decisions, Air Force Research Laboratory via The Logistics Institute, $97,024, 2003-2004, 80% responsibility (PI), 2003-2004, with H.L. Nachtmann, L.M. Maillart.
14. Summer Research Experiences for Teachers, National Science Foundation, $200,000, 2003-2012, 5% responsibility, with R.D. Meller (PI), E.A. Pohl.

15. Quantifying the Impact of Aircraft Cannibalization, Air Force Research Laboratory via The Logistics Institute, $94,165, 2002-2003, 100% responsibility (PI).
16. Fleet-Level Selective Maintenance and Aircraft Scheduling , Air Force Research Laboratory via The Logistics Institute, $94,910, 2002-2003, 60% responsibility (PI), with S.J. Mason, J.R. Chimka.
17. Equipment Availability Modeling under Imperfect Maintenance (State Undergraduate Research Fellowship for K. Schneider), SILO Advisory Council, $2,650, 2002, 100% responsibility (PI).
18. Incorporating Lean Thinking into Grenade Line Maintenance, Pine Bluff Arsenal via The Logistics Institute, $50,000, 2002-2003, 75% responsibility (PI), with E.W. Fant.
19. Grenade Line Reliability and Maintainability Performance , Pine Bluff Arsenal via The Logistics Institute, $50,000, 2001-2002, 75% responsibility (PI), with E.W. Fant.
20. Cost of Ownership Modeling for Support Equipment at Intermodal Transportation Terminals, National Center for Intermodal Transportation, $27,165, 80% responsibility (PI), 2001-2002, with S.A. LeMay.
21. Development of Productivity-Based Selective Maintenance Strategies, Pine Bluff Arsenal via The Logistics Institute, $49,950, 2000-2001, 50% responsibility, with E.W. Fant (PI).
22. Determining Optimal Trailer Duty as a Function of Use and Age, Mack-Blackwell Transportation Center, $64,396, 2000-2002, 50% responsibility, with D.W. Nutter (PI).
23. Quantifying the Impact of Refrigerated Unit Failures, Mack-Blackwell Transportation Center, $63,993, 1999-2000, 25% responsibility, 1999-2000, with J.R. English (PI), D.W. Nutter, G.D. Taylor.
24. Assessment of Logistics System and Warehouse Performance – Jackson, Stuart C. Irby Company, $8,000, 2000, 5% responsibility, with S.F. Bullington (PI), S.A. LeMay, R.O. Bowden.
25. Developing a Standard Definition for Intermodal Transportation, National Center for Intermodal Transportation, $2,000, 2000, 50% responsibility (PI), with A.R. Goetz, R.O. Bowden.
26. Tracking and Positioning Software: A Market Need, Value, and Cost Analysis, National Center for Intermodal Transportation, $14,450, 2000, 20% responsibility, with S.A. LeMay (PI).
27. Improving the Operation of Overnight Intermodal Cargo Terminals using Simulation and Optimization, National Center for Intermodal Transportation, $14,450, 2000, 20% responsibility, with R.O. Bowden (PI).
28. Bag Seed Transportation and Distribution Modeling , Delta and Pine Land Company, $25,000, 1999, 75% responsibility (PI), with R.O. Bowden, S.A. LeMay.
29. Phase I Implementation of NCIT Strategic Plan, US Department of Transportation, $130,200, 1998-2000, 20% responsibility, with R.O. Bowden (PI).
30. Exploring Simulation Applications, Ingalls Shipbuilding, $20,700, 1998, 50% responsibility (PI), with R.O. Bowden.
31. Research Opportunity Award: An Investigation of the Effects of Total Body Fatigue on Human Reliability, National Science Foundation, $57,857, 1997-1999, 20% responsibility, with L.L. Crumpton (PI).
32. A Review of the Procedures and Practices of the Mississippi Gaming Laboratory, Mississippi Gaming Commission, $5,007, 1997, 50% responsibility (PI), with A. Saha, R.O. Bowden.

33. The Use of Training Aids for Visual Learning in Probability, Statistics and Quality Control, Mississippi State U. Schillig Special Teaching Projects Program, $2,475, 1997, 100% responsibility (PI).
34. A Fleet Aircraft Replacement Methodology, Office of Research, Mississippi State U., $4,500 ($1,500 matching), 1997, 100% responsibility (PI).

PRESENTATIONS

Invited Seminars
1. "Creating and Managing School-Based FIRST LEGO League Programs," Education Innovation Summit, Little Rock, AR, 2017.
2. "Ranking College Football Teams: A Customizable Quadratic Assignment Approach," Seminar Series, Virginia Tech Student Section of INFORMS, 2016.
3. "Preparing for Teaching: Successful Strategies," 10th Annual IIE New Faculty Colloquium, Orlando, FL, 2012.
4. "Ranking Sports Teams: A Customizable Quadratic Assignment Approach," Dept. of Operations Seminar Series, Case Western Reserve University, 2006.
5. "Generic Models of Equipment Availability under Imperfect Maintenance Policies," U. of Iowa Industrial Engineering Graduate Seminar, 2006.
6. "Ranking Sports Teams: A Customizable Quadratic Assignment Approach," Seminar Series, Virginia Tech Student Section of INFORMS, 2005.
7. "Ranking College Football Teams using a Quadratic Assignment Problem," Seminar Series, Virginia Tech Student Section of INFORMS, 2003.
8. "Introduction to Repairable Systems Modeling," Kimberly-Clark Corporation, Neenah, WI, 2003.
9. "Introduction to Repairable Systems Modeling," Amtrak, Philadelphia, PA, 2003.
10. "Integrated Production Scheduling and Preventive Maintenance Planning," Seminar Series, Virginia Tech Student Section of INFORMS, 2002.
11. "Imperfect Maintenance and Selective Maintenance," Seminar Series, Virginia Tech Student Section of INFORMS, 2000.
12. "Effective Age and Selective Maintenance," Dept. of Industrial Engineering, U. of Arkansas, 2000.
13. "Equipment Availability under Imperfect Maintenance," Seminar Series, Virginia Tech Student Section of INFORMS, 1999.
14. "Ranking College Football Teams using a Quadratic Assignment Problem," Seminar Series, Virginia Tech Student Section of INFORMS, 1998.
15. "Acceptance Sampling Techniques using 3-Level Product Quality Measures and Quality Value Functions," Dept. of Industrial Engineering, Mississippi State U., 1996.
16. "Acceptance Sampling Techniques using 3-Level Product Quality Measures and Quality Value Functions," Dept. of Mechanical and Industrial Engineering, Texas A&M University Kingsville, 1996.

Conference Presentations without a Paper (student presenters are noted)
1. "FIRST LEGO League: A Competitive Program in S, T, E, and M," Innovation Institute, Springdale, AR, 2017.
2. "Evaluating the Fairness of Approaches Used to Determine League Champions," Industrial Engineering Research Conference, 2011.
3. "Incorporating Degrees of Separation into College Football Rankings," Industrial Engineering Research Conference, 2011 (presented by B. Wiles).
4. "Optimizing the Sunday Singles Lineup for a Ryder Cup Captain," Industrial Engineering Research Conference, 2011.

5. "Assessing the Potential Impact of Prognostics for Improving System Performance," The International Applied Reliability Symposium, 2009.
6. "Research Topics in Scheduled Maintenance of Repairable Systems," The International Applied Reliability Symposium, 2008.
7. "Probabilistic Models of the Outcomes of Professional Golf Matches," IMA International Conference on Mathematical Modelling in Sport, 2007 (presented by C. Durham, undergraduate).
8. "Incorporating Schedule Strength into an Optimization-Based Method for Ranking Sports Teams," IMA International Conference on Mathematical Modelling in Sport, 2007 (presented by K. Sullivan).
9. "Allocating and Deploying Maintenance Resources for a Set of Multi-State Systems," INFORMS Annual Meeting, 2005 (presented by T. Yeung).
10. "Incorporating Cannibalization into Fleet-Level Selective Maintenance Models," Industrial Engineering Research Conference, 2005 (presented by R. Johnson).
11. "Selective Maintenance Modeling for Extended Planning Horizons," INFORMS Annual Meeting, 2004.
12. "A Generic Model of Equipment Availability under Imperfect Maintenance," 4th International Conference on Mathematical Methods in Reliability, 2004.
13. "Estimating System Cost under an Opportunistic Replacement Policy," Industrial Engineering Research Conference, 2004 (presented by I. Iyoob).
14. "Evaluating an Availability Meta-Model under Imperfect Corrective Maintenance," Industrial Engineering Research Conference, 2004 (presented by P. Yu).
15. "Reliability Engineering Education at the University of Arkansas," INFORMS Annual Meeting, 2000.
16. "Selective Maintenance Modeling," Industrial Engineering Research Conference, 2000.
17. "Modeling Issues in Fleet Maintenance Planning," Industrial Engineering Research Conference, 1999.

STUDENT MENTORING AND TEACHING

PhD Dissertations Supervised
1. Suzan Alaswad, 2012, currently Assistant Professor of Operations Management, Zayed University
2. Yisha Xiang, 2009, currently Assistant Professor of Industrial, Manufacturing & Systems Engineering, Texas Tech University
3. Sinan Salman, 2007, currently Assistant Professor of Enterprise Systems, Zayed University
4. Thomas G. Yeung, 2005, currently Maître Associé, Département Automatique & Productique, Ecole des Mines de Nantes.
5. Fernando Tovia, 2004, currently Associate Professor of Engineering, Philadelphia University
6. Navadon Sortrakul, 2003

MS Theses Supervised
1. Brian McClure, 2010
2. Lance Luttrell, 2009
3. Kelly Sullivan, 2008, currently Associate Professor of Industrial Engineering, University of Arkansas
4. Kellie Schneider, 2006, currently Associate Professor of Engineering Management and Systems, University of Dayton
5. Yisha Xiang, 2006, currently Assistant Professor of Industrial, Manufacturing & Systems Engineering, Texas Tech University
6. Jason Honeycutt, 2006
7. Suzan Alaswad, 2005, currently Assistant Professor of Operations Management, Zayed University
8. Amit Kumar Shee, 2005
9. Ilyas Mohammed Iyoob, 2004
10. Rajanand Rajagopalan, 2004
11. Chet Tuck Wong, 2002
12. Janna D. Smith, 2000
13. D. Wesley Graham, 1999
14. Leemin Liew, 1999
15. Wanda F. Rice, 1999
16. I. Gregory Takahashi, 1999

BS Honors Theses Supervised
1. Brent Wiles, 2013
2. Crystal Wilson, 2011
3. Dia St. John, 2010
4. Kelly Sullivan, 2006, currently Associate Professor of Industrial Engineering, University of Arkansas
5. Mauricio Carrasco, 2006

Courses Taught at the U. of Arkansas (course development roles are noted)
GNEG 1111 Introduction to Engineering I (co-developer with K. Schneider)
GNEG 1111H Honors Introduction to Engineering I (co-developer with K. Schneider)
GNEG 1121 Introduction to Engineering II (co-developer with K. Schneider)
GNEG 1121H Honors Introduction to Engineering II (co-developer with K. Schneider)
GNEG 1301H Honors Colloquium (developer)
GNEG 1311H Honors Research Experience I (developer)
GNEG 1321H Honors Research Experience II (developer)
GNEG 1322H Honors Research Experience II (developer)
GNEG 1513 Engineering Applications of Mathematics (co-developer with K. Schneider)
GNEG 1514 Engineering Applications of Mathematics (co-developer with K. Schneider)
INEG 1103 Principles of Industrial Engineering
INEG 2101 Principles of Industrial Engineering (developer)
INEG 2102 Introduction to Industrial Engineering (developer)
INEG 2103 Introduction to Industrial Engineering (developer)
INEG 2812H Industrial Engineering Honors Research Experience I (co-developed with K. Sullivan)
INEG 3313 Engineering Statistics
INEG 3313H Honors Engineering Statistics (developer)
INEG 3812H Industrial Engineering Honors Research Experience II (co-developed with K. Sullivan)
INEG 4323 Quality Engineering and Management
INEG 4812H Industrial Engineering Honors Research Experience III (co-developed with K. Sullivan)
INEG 4904 Industrial Engineering Design
INEG 4911 Industrial Engineering Capstone Experience I (developer)
INEG 4923 Industrial Engineering Capstone Experience II (developer)
INEG 5143 Dynamic Programming (developer)
INEG 5143 Repairable Systems Modeling (developer)
INEG 5313 Engineering Applications of Probability Theory and Stochastic Processes
INEG 5313 Engineering Applications of Probability (co-developer with S. Zhang)
INEG 5323 Reliability
INEG 5323 Reliability Modeling (developer)
INEG 5323 Engineering Applications of Stochastic Processes (co-developer with S. Zhang)
INEG 6613 Operations Research Applications
OMGT 4873 Principles of Operations Research

Courses Taught at Mississippi State U.
IE 4613/6613 Engineering Statistics I
IE 4653/6653 Industrial Quality Control I
IE 4673/6673 Reliability Engineering
IE/MA 4733/6733 Linear Programming I
IE 8743 Nonlinear Programming I

Courses Taught at Virginia Tech

ISE 3204 Systems Analysis through Simulation

ISE 3406 Operations Research II

ISE 3414 Probabilistic Operations Research

ISE 3424 Discrete-Event Computer Simulation

ISE 4404 Statistical Quality Control

ISE 4414 Industrial Quality Control

Short Courses and Tutorials

1. An Introduction to Probabilistic Methods in Reliability and Maintainability (with K. Schneider), Reliability and Maintainability Symposium, 4 hours, 375 attendees (across five years), 2018, 2017, 2016, 2015, 2014.
2. An Introduction to Probabilistic Methods in Reliability and Maintainability, Reliability and Maintainability Symposium, 4 hours, 435 attendees (across five years), 2013, 2012, 2011, 2010, 2009.
3. Press 1 for More Options: The Basics of the ResponseCard RF, U. of Arkansas Winter Teaching Symposium, 1 hour, 35 attendees (across two sessions), 2012.
4. Fundamentals of Reliability and Maintainability Modeling, NASA Johnson Space Center, 8 hours, 50 attendees (across two sessions), 2010.
5. Engineering Probability and Statistics: Fundamentals of Engineering Exam Review, College of Engineering, 3 hours, 10 attendees, 2009.
6. Introduction to Repairable Systems Modeling (with L. Maillart), Reliability and Maintainability Symposium, 2 hours, 70 attendees, 2008.
7. Introduction to Repairable Systems Modeling, Reliability and Maintainability Symposium, 2 hours, 290 attendees (across three years), 2007, 2006, 2005.
8. Introduction to Repairable Systems Modeling (with E. Pohl), Reliability and Maintainability Symposium, 2 hours, 285 attendees (across three years), 2004, 2003, 2002.

SERVICE TO THE PROFESSION

Virginia Tech
Member, Industrial and Systems Engineering Advisory Board, 2016-present

University of Arkansas
Academic Advising Council, 2013-2014
All-University Judiciary Board, 2002-2005
Alumni Association Faculty Distinguished Awards Selection Committee, 2008, 2018
Arkansas Union Advisory Committee, 2015-present
Civitas Steering Committee, 2016-2017
Graduation Rate Task Force, 2009-2010
Orientation Steering Committee, 2007
Phase II Campus Planning Teaching and Learning Committee, 2016
Retention Skunkworks, 2015
Teaching Academy Nominations Committee, 2013
University Perspectives Task Force, 2012

College of Engineering, University of Arkansas
First-Year Engineering Committee, 2006-present (Chair, 2006)
Honors Council, 2002-2006, 2010-present (Honors Program Director, 2016-2018)
Math Progress Task Force, 2012
Retention Task Force, 2006
Scholarship Committee, 2005-2006, 2014-2016
Sophomore Retention Task Force, 2011-2012
Strategic Planning Committee, 2010-2012, 2014
Tele Fees Committee, 2007

Dept. of Industrial Engineering, University of Arkansas
Awards Banquet Coordinator and Master of Ceremonies, 2002-2012
Department Head Search Committee, 2007-2008
Faculty Search Committee, 2008-2011, 2013-2014, 2014-2015, 2015-2016 (Chair, 2010-2011,
    2014-2015, 2015-2016)
Graduate Studies Committee, 2002-2003
New Student Orientation Coordinator, 2005-2006
Personnel Committee, 2009-2017, 2018-preent
Scholarship, Awards, and Banquet Committee, 2001-2012 (Chair, 2001-2003, 2011)
Undergraduate Studies Committee, 2000-2004, 2007-present (Chair, 2014-present)

Reliability and Maintainability Symposium

Institute of Industrial and Systems Engineers Representative, Management Committee, 1999-2011
Arrangements Chair, 2004
Tutorials Coordinator, 2006, 2007
Program Chair, 2009
Vice General Chair, 2010
General Chair, 2011
Secretary, Board of Directors, 2010
Chair, Board of Directors, 2012
Coordinator, Tutorial Certificate Program, 2009-2015

Institute of Industrial and Systems Engineers

Scholarship Trustee, 2009-2012
Director, Quality Control and Reliability Engineering Division, 2002-2003
Newsletter Editor, Quality Control and Reliability Engineering Division, 1998-2002
Organizing Committee, Industrial Engineering Research Conference, 2003
Book and Software Reviews Editor, *IIE Transactions*, 2001-2005
Outstanding Paper Committee, *IIE Transactions*, 2001

Society of Reliability Engineers

Secretary, 2000-2001
Chair, Fellows Selection Committee, 2018
Chair, Nominations Committee, 2001

Other

Associate Editor, *Journal of Risk and Reliability*, 2005-present
Associate Director, Interdisciplinary Contest in Modeling, 2004-2007
INFORMS Judge, Interdisciplinary Contest in Modeling, 2001-2007
Member, Farmington (AR) High School Career Academies Advisory Board, 2017-present

Kelly M. Sullivan

Associate Professor of Industrial Engineering
University of Arkansas
ksulliv@uark.edu

Academic Background

EDUCATION

Ph.D. Industrial and Systems Engineering, University of Florida, 2012

M.S. Industrial Engineering, University of Arkansas, 2008

B.S. Industrial Engineering, University of Arkansas, 2006

EMPLOYMENT

Associate Professor, Industrial Engineering, University of Arkansas, 2019–Present

Assistant Professor, Industrial Engineering, University of Arkansas, 2012–2019

ACTIVITIES OF NOTE

Associate Editor, *INFORMS Journal on Computing*

Associate Editor, *Operations Research Letters*

Honors Coordinator, Dept. Industrial Engineering, Univ. Arkansas

RESEARCH INTERESTS

Network Optimization
Network Interdiction
Optimization in Reliability

Defense Applications
Homeland Security Applications

AWARDS & HONORS

CAREER Award, National Science Foundation, 2018

Glover-Klingman Prize, best paper published in *Networks*, 2014

Faculty Member of the Year, Arkansas Academy of Industrial Engineering, 2018–2019

John L. Imhoff Chair, Dept. Industrial Engineering, Univ. Arkansas, 2019–2020

Best Teacher, Dept. Industrial Engineering, Univ. Arkansas, 2018–2019, *selected by the Industrial Engineering student body*

Outstanding Service to Students, Dept. Industrial Engineering, Univ. Arkansas, 2016–2017, 2018–2019

Outstanding Faculty Advisor, Industrial Engineering Capstone Experience, Univ. Arkansas, 2016–2017, 2018–2019

Publications

Papers Accepted or in Print

(Student advisees in bold)

1. **Ahadi, K.** and K. M. Sullivan. Approximate Dynamic Programming for Selective Maintenance in Series-Parallel Systems. Accepted for publication in *IEEE Transactions on Reliability*.

2. **Baycik, N. O.** and K. M. Sullivan. Robust Location of Hidden Interdictions on a Shortest Path Network. *IISE Transactions*, 51(12): 1332–1347, 2019.

3. Ruiz, C., **M. Heydari**, K. M. Sullivan, H. Liao, and E. A. Pohl. Data Analysis and Resource Allocation in Bayesian Selective Accelerated Reliability Growth. Accepted for publication in *IISE Transactions*.

4. Ruiz, C., H. Liao, E. A. Pohl, and K. M. Sullivan. A Bayesian Framework for Accelerated Reliability Growth Testing with Multiple Sources of Uncertainty. *Quality and Reliability Engineering International*, 35(3): 837–853, 2019.

5. **Ahadi, K.**, K. M. Sullivan, and K. N. Mitchell. Budgeting Maintenance Dredging Projects Under Uncertainty to Improve the Inland Waterway Network Performance. *Transportation Research Part E: Logistics and Transportation Review*, 119: 63–87, 2018.

6. Margolis, J. T., K. M. Sullivan, S. J. Mason, and M. Magagnotti. A Multi-Objective Optimization Model for Designing Resilient Supply Chain Networks. *International Journal of Production Economics*, 204: 174–185, 2018.

7. **Heydari, M.** and K. M. Sullivan. Robust Allocation of Testing Resources in Reliability Growth. Accepted for publication in *Reliability Engineering & System Safety*.

8. **Heydari, M.** and K. M. Sullivan. An Integrated Approach to Redundancy Allocation and Test Planning for Reliability Growth. *Computers & Operations Research*, 92: 182–193, 2018.

9. Sullivan, K. M., D. T. Abdul-Malak, J. P. Kharoufeh, and R. O. Baldwin. Optimally Locating Application Virtualization Resources on a Network. *Military Operations Research*, 20(1):5–20, 2015.

10. Sullivan, K. M. and J. C. Smith. Exact Algorithms for Solving a Euclidean Maximum Flow Network Interdiction Problem. *Networks*, 64(2); 109–124, 2014. (Winner of the 2014 Glover-Klingman Prize awarded to the best paper published in *Networks*.)

11. Sullivan, K. M., D. P. Morton, F. Pan, and J. C. Smith. Securing a Border Under Asymmetric Information. *Naval Research Logistics*, 61(2): 91–100, 2014.

12. Sullivan, K. M., J. C. Smith, and D. P. Morton. Convex Hull Representation of the Deterministic Bipartite Network Interdiction Problem. *Mathematical Programming*, 145(1-2): 349–376, 2014.

(Student advisees in bold)

13. **Enayaty Ahangar, N.**, K. M. Sullivan, and S. G. Nurre. Modeling Interdependencies in Infrastructure Systems using Multi-Layered Network Flows. Under revision for *Computers & Operations Research*.

14. **Enayaty Ahangar, N.**, K. M. Sullivan, S. M. Spanton, and Y. Wang. Algorithms and Complexity Results for Rail-Yard Routing. Submitted.

15. Bui, H., H. A. Pierson, S. G. Nurre. Toolpath Planning for Multi-Gantry Additive Manufacturing. Submitted.

PAPERS IN REFEREED CONFERENCE PROCEEDINGS

(Student advisees in bold)

16. Bui, H., H. A. Pierson, S. G. Nurre, and K. M. Sullivan. Tool Path Planning Optimization for Multi-Tool Additive Manufacturing. *Accepted to Procedia Manufacturing.*

17. Ruiz, C., H. Liao, E. A. Pohl, and K. M. Sullivan. Bayesian Accelerated Reliability Growth for Complex Systems. *Proceedings of the IEEE 2018 Reliability and Maintainability Symposium.*

18. **Heydari, M.**, K. M. Sullivan, and E. A. Pohl. Optimal Allocation of Testing Resources in Reliability Growth. *Proceedings of the 2014 Industrial and Systems Engineering Research Conference*, pp. 3423–3428.

19. Sullivan, K. M. and C. R. Cassady. The CMS+ System for Ranking College Football Teams. *Proceedings of the 2009 Industrial Engineering Research Conference.*

WORKING PAPERS

(Student advisees in bold)

20. Wong, A. H., K. M. Sullivan, and E. A. Pohl. 50 Years of Reliability Growth Modeling: A Survey of the Literature. Anticipated December 2019 Submission.

21. **H. Lee**, J. A. White, and K. M. Sullivan. Dynamic Block Stacking with Deterministic Demand. Anticipated January 2020 Submission.

Grants and Sponsored Projects

EXTERNALLY FUNDED RESEARCH

Summary: total = $1,078,017$; subtotal as PI = $504,000$

1. Co-Principal Investigator (50% responsibility with E. A. Pohl); Economic Design and Analysis of Reliability Growth Test Plans; Office of the Secretary of Defense, DT&E (through Air Force Institute of Technology); $129,940$; 2013–2014.

2. Co-Principal Investigator (50% responsibility with E. A. Pohl); Science of Test: Economic Design and Analysis of Reliability Growth Test Plans; Office of the Secretary of Defense, DT&E (through Air Force Institute of Technology); $99,992$, 2014–2015.

3. Co-Principal Investigator (50% responsibility with E. A. Pohl) Optimal Allocation of Test Resources in a Reliability Growth Environment; Office of the Secretary of Defense, DT&E (through Air Force Institute of Technology); $98,574$; 2015.

4. Co-Principal Investigator (33% responsibility with E. A. Pohl, H. Liao); Resource-Constrained Accelerated Reliability Growth Testing Technology for Systems of Systems; Department of Defense, TRMC; $172,841$; 2016–2017.

5. Co-Principal Investigator (33% responsibility with E. A. Pohl, H. Liao); Resource-Constrained Accelerated Reliability Growth Testing Technology for Systems of Systems (Phase II); Department of Defense, TRMC; $72,670$; 2018.

6. Principal Investigator (100% responsibility); Vulnerability Analysis of Modern Electric Grids: A Mathematical Optimization Approach; Arkansas Department of Higher Education (State Undergraduate Research Fellowship received by Industrial Engineering undergraduate student, Matthew Millis); $4,000$; 2018.

7. Principal Investigator (100% responsibility); CAREER: Survivable, Maintainable, and Adaptable Sensor Networks; National Science Foundation; $500,000$; 2018–2023.

CENTER-FUNDED RESEARCH

Summary: total = $359,528$; subtotal as PI = $150,110$

1. Co-Principal Investigator (50% responsibility with S. E. Root); Sam's Club; Center for Excellence in Logistics and Distribution (CELDi) Project; $45,117$; 2013.

2. Principal Investigator (100% responsibility); Efficient Dredging Strategies for Improving Transportation Infrastructure Resilience; Maritime Transportation Research and Education Center (MarTREC) Project; $113,747$; 2014–2016.

3. Principal Investigator (100% responsibility for UA funds, subcontracted through University of Missouri); Helmerich & Payne; Center for Excellence in Logistics and Distribution (CELDi) Project; $36,363$; 2014–2015.

4. Co-Principal Investigator (33% responsibility with S. G. Nurre and B. R. K. Runkle); Informing Post-Disaster Restoration through Modeling Interdependent Agriculture and Transportation Networks; Maritime Transportation Research and Education Center (MarTREC) Project; $164,301$; 2018–2020.

Summary: total = $35,559$; subtotal as PI = $10,750$

1. Principal Investigator (100% responsibility); Developing Sustainable Rice Production through Image Classification; University of Arkansas Honors College (Honors College Research Grant received by Industrial Engineering undergraduate student, Parker Fitzgerald); $2,750$; 2017.

2. Co-Principal Investigator (33% responsibility with S. G. Nurre, B. R. K. Runkle); Classification of the Interdependencies in the Food and Agriculture Critical Infrastructure Sector in Arkansas; University of Arkansas, College of Engineering, Research and Innovation Seed Funding Grant; $24,809$; 2017–2018.

3. Principal Investigator (100% responsibility); Reliability Optimization of Wireless Sensor Networks for Security Applications; University of Arkansas Honors College (Honors College Research Grant received by Industrial Engineering undergraduate student, Karlton Haney); $4,000$; 2018.

4. Principal Investigator (100% responsibility); Optimizing the Designing of Heterogeneous Ad Hoc Sensor Network for Security Applications; University of Arkansas Honors College (Honors College Research Grant received by Industrial Engineering undergraduate student, Maria Rene Arandia Jimenez); $4,000$; 2018.

Invited Seminar Presentations

1. Mixed-Integer Linear Programming Models for Reliable System Design. *Invited Seminar, Clemson University, October 2014, Clemson, SC.*

2. Mixed-Integer Linear Programming Models for Reliable System Design. *Invited Seminar, Oklahoma State University, October 2014, Stillwater, OK.*

3. Resource Allocation in Reliability Growth and Network Interdiction. *Invited Seminar, Air Force Institute of Technology, November 2016, Dayton, OH.*

Students Advised

PH.D. THESES ADVISED

Summary: 3 complete; 2 in progress

1. Heydari, Mohammadhossein. Optimal Allocation of Resources in Reliability Growth, May 2018. *Mohammadhossein is currently employed as an OR/Data Scientist at Cox Automotive, Inc.*

2. Ahadi, Khatereh. Optimization Methods for Maintaining Complex Systems. *Khatereh is currently employed as a senior lecturer in the Naveen Jindal School of Management at the University of Texas at Dallas.*

3. Enayaty Ahangar, Negin. Modeling and Solution Approaches for Non-traditional Network Flow Problems with Complicating Constraints. *Negin is currently employed as a senior lecturer in the Naveen Jindal School of Management at the University of Texas at Dallas.*

4. Lee, Hu-Eon (co-advised with J. A. White and S. Zhang). Anticipated December 2019 completion.

5. Boardman, Nicholas. Anticipated August 2021 completion.

6. Alkhaleel, Basem (co-advised with H.). Anticipated August 2021 completion.

7. Silva, Daniel. Anticipated August 2023 completion.

M.S. THESES ADVISED

Summary: 2 complete; 0 in progress

1. Baycik, N. Orkun. Robust Network Interdiction with Invisible Interdiction Assets, May 2014. *Orkun is now an assistant professor at Shenandoah University.*

2. Yang, Tiffany. A Tabu Search, Augment-Merge Heuristic to Solve the Stochastic Location Arc Routing Problem, May 2016. *Tiffany is currently employed at J.B. Hunt.*

B.S. HONORS THESES ADVISED

Summary: 5 complete; 3 in progress

1. Schulze, Joseph. A Mathematical Model for Two-Layer Networks with One-Way Dependency, May 2015.

2. Summerhill, Hayden. Prioritizing Interdictions on a Shortest Path Network, May 2015.

3. Patel, Jaymin. College Football Rankings: Maximum Flow Model, December 2015.

4. Fitzgerald, Parker. Developing Sustainable Rice Production through Image Classification, May 2017. *Parker received a $2,750 Honors College Research Grant from the University of Arkansas Honors College.*

5. Millis, Matthew. Vulnerability Analysis of Modern Electric Grids: A Mathematical Optimization Approach, May 2019. *Matthew received a $4,000 Student Undergraduate Research Fellowship from the Arkansas Department of Higher Education.*

6. Haney, Karlton. Anticipated May 2020 completion. *Karlton received a $4,000 Honors College Research Grant from the University of Arkansas Honors College.*

7. Arandia Jimenez, Maria Rene. Anticipated May 2020 completion. *Maria received a $4,000 Honors College Research Grant from the University of Arkansas Honors College.*

8. Rhomberg, Caroline. Anticipated May 2020 completion.

Teaching

INEG 2313: Applied Probability and Statistics for Engineers I (*required undergraduate course*)

Topics: Basic probability theory, engineering applications of probability, discrete random variables (binomial, negative binomial, Poisson), continuous random variables (normal, exponential, Erlang, Weibull), multiple random variables, fundamental data analysis, statistical inference for single sample, statistical inference for two samples.

Semester	Enrollment	Evaluations received	Instructor rating (/5)	Course GPA (/4)
Spring 2013	59	27	4.61	2.81
Fall 2014	73	33	4.30	2.70
Spring 2015	76	34	4.26	2.32
Spring 2016	66	52	3.23	2.42
Spring 2017	86	43	4.26	2.55
Fall 2017	95	48	4.33	2.84
Spring 2018	96	46	4.17	2.79

INEG 3613: Introduction to Operations Research (*required undergraduate course*)

Topics: Linear programming, simplex algorithm, sensitivity analysis, assignment problem, transportation problem, shortest path, integer linear programming.

Semester	Enrollment	Evaluations received	Instructor rating (/5)	Course GPA (/4)
Spring 2014	71	39	3.58	2.39
Fall 2015	12	5	4.20	2.08
Fall 2018	16	8	4.88	2.75
Fall 2019	TBD	TBD	TBD	TBD

INEG 2812H: Honors Research Experience I (*new course development*)

Topics: Introduction to industrial engineering research, selecting a research topic and advisor.

Semester	Enrollment	Evaluations received	Instructor rating (/5)	Course GPA (/4)
Spring 2016*	5	4	5.00**	4.00
Spring 2017	6	5	4.80**	4.00
Spring 2018	12	5	5.00**	4.00
Spring 2019	8	TBD	TBD	TBD

*Course was listed as **INEG 410VH: Honors Special Topics**

**Course was co-instructed with C. R. Cassady

INEG 3812H and 4812H: Honors Research Experience II and III (*new course development*)

Topics: Writing a research proposal, beginning the research process, scientific writing and presentations.

Semester	Enrollment	Evaluations received	Instructor rating (/5)	Course GPA (/4)
Fall 2016*	5	2	5.00**	4.00
Fall 2017†	8	6	4.83**	4.00
Fall 2018	10	5	4.80**	4.00
Fall 2019	TBD	TBD	TBD	TBD

*INEG 4812H was not offered in this semester and INEG 3812H was listed as **INEG 410VH: Honors Special Topics**.

**Course was co-instructed with C. R. Cassady

†INEG 4812H was listed as **INEG 410VH: Honors Special Topics** in this semester.

INEG 6313: Network Optimization (*advanced graduate course, new course development*)

Topics: Graph theory, LP-based graph theory, complexity analysis, minimum spanning tree, shortest path, maximum flow, minimum cost flow, network simplex.

Semester	Enrollment	Evaluations received	Instructor rating (/5)	Course GPA (/4)
Fall 2012*	7	6	4.17	3.86
Fall 2013	6	6	4.50	3.50
Fall 2014	8	8	4.75	3.75
Fall 2016	5	3	3.67	3.40
Spring 2018	4	N/A	N/A	3.50
Fall 2019	TBD	TBD	TBD	TBD

*Course was listed as **INEG 514V: Graphs and Networks** in the Fall 2012 semester.

UNIVERSITY OF FLORIDA

ESI 4312: Operations Research I (*required undergraduate course*)

Topics: Formulating and solving linear programs, the simplex method, basic LP duality, sensitivity analysis, assignment problem, transportation problem, shortest path.

Semester	Enrollment	Evaluations received	Instructor rating (/5)
Spring 2011	50	25	4.8

Service

EXTRAMURAL POSITIONS

    Associate Editor, *INFORMS Journal on Computing*, 2019–present

    Associate Editor, *Operations Research Letters*, 2016–present

OTHER EXTRAMURAL SERVICE

    Journal Referee,

        Computers & Operations Research (2015, 2016 x2, 2017)

        Decision Analysis (2019)

        Discrete Optimization (2017)

        European Journal of Operational Research (2012, 2015, 2016, 2018)

        IEEE Transactions on Reliability (2017 x3, 2018)

        IIE Transactions (2013, 2014 x2)

        IISE Transactions (2017, 2018 x2)

        INFORMS Journal on Computing (2016)

        Journal of Risk and Reliability (2018)

        Naval Research Logistics (2016)

        Networks (2010, 2012, 2018, 2019)

        Omega (2010, 2014)

        Operations Research (2016, 2018)

        Operations Research Letters (2014)

        Optimization Letters (2019)

        Quality and Reliability Engineering International (2018)

        Reliability Engineering & System Safety (2018 x2)

        Transportation Science (2019)

    Chair, IIE South Central Regional Student Paper Competition (2014).

    Judge, *ISERC* Best Paper Competition, Homeland Security Track (2013, 2014).

    Judge, *ISERC* Doctoral Colloquium Poster Competition (2015).

    Panelist, *IIE Transactions* Best Paper Committee (2013).

    Panelist, *ISERC* Doctoral Colloquium (2015).

    Proposal Review Panelist, NSF (2013, 2018).

    Session Organizer, INFORMS Annual Meeting (2012 x2, 2013, 2014, 2015), INFORMS Computing Society Conference (2013, 2015), ISERC (2013, 2016).

University of Arkansas Satisfactory Academic Progress Committee, 2015–2018

College of Engineering Honors Committee, 2013–present

INEG Honors Program Coordinator, 2013–present

Alpha Pi Mu (APM) Chapter Advisor, 2015–present

National Outstanding Chapter Competition Results:

2015–2016: Fifth Place

2016–2017: Fifth Place

2017–2018: Second Place

2018–2019: Second Place

Student Scholarship Winners at U of A (five awarded each year by APM National Office):
2016 (1), 2017 (1), 2018 (2), 2019 (1)

INEG Scholarship Committee, 2013–2018

INEG Global Studies Committee, 2018–present

INEG Global Studies Committee, 2018–present

INEG Undergraduate Committee, 2014–2017, 2018–present

INEG Research Committee, 2014–2015

INEG Faculty Search Committee, 2013–2014, 2014–2015

INEG Graduate Committee, 2012–2014

Last updated: October 17, 2019

CURRICULUM VITAE

Xiao Liu
Assistant Professor
Department of Industrial Engineering, University of Arkansas
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webpage: *https://sites.google.com/site/liuxiaosite1/*

Education:

Ph.D.	Industrial and Systems Engineering, National University of Singapore, 2009
B.Eng.	Mechanical Engineering, Harbin Institute of Technology, 2004
	Electrical Engineering, Hong Kong University of Science and Technology, Spring 2003

Career/Academic Appointments:

Jun 2017-Present	**Assistant Professor**
	Department of Industrial Engineering, University of Arkansas
Oct 2015-May 2017	**Research Staff Member (official title for research scientist at IBM; permanent position)**
	IBM Thomas J. Watson Research Center, Yorktown Heights, New York
July 2012-Oct 2015	**Research Staff Member (official title for research scientist at IBM; permanent position)**
	IBM Smarter Cities Research Collaboratory Singapore, Singapore
Jun 2013-July 2016	**Adjunct Assistant Professor**
	Department of Industrial and Systems Engineering, National University of Singapore, S
Feb 2011-Jun 2012	**Post-Doc Researcher**
	Qatar National Priorities Research Program
	Qatar University, Doha, Qatar + Rutgers University, New Brunswick, New Jersey

Research Areas

- **Physical-Statistical Spatio-Temporal Random Fields** for physical convection-diffusion processes
  - Applications: radar image modeling, sensor-based environmental monitoring, dynamic heat map in Data Centers, inverse problem, etc.
- **Tree-based Ensemble Statistical Learning for Recurrent Event Data**
  - Applications: video streaming quality improvement, repairable system reliability, healthcare, etc.
- **Reliability**
  - Applications: optimum design of reliability testing experiments, stochastic degradation processes, predictive maintenance, etc.

Professional Membership

American Statistical Association (ASA)

Institute of Industrial and Systems Engineer (IISE)

Institute for Operations Research and the Management Sciences (INFORMS)

Publications

1. **Liu, X.**, and Pan, R., (2019), "Analysis of Large Heterogeneous Repairable System Reliability Data with Static System Attributes and Dynamic Sensor Measurement in Big Data Environment", *Technometrics*, accepted.

2. Yeo, K.M., Hwang, Y.D., **Liu, X.**, and Kalagnanam (2019), "Development of a spectral source inverse model by using generalized polynomial chaos", *Computer Methods in Applied Mechanics and Engineering*, 347, 1-20. (Impact Factor: 4.441; 2/103 under Google scholar MATHEMATICS, INTERDISCIPLINARY APPLICATIONS).

3. Bowen. S, Hippe, D, Chaovalitwongse, W., Duan, C., Thammasorn, P., **Liu, X.**, Miyaoka, R., Vesselle, H., Kinahan, P., Rengan, R., and Zeng, J., (2019), "Forecast for Precision Oncology: predicting spatially variant and multiscale cancer therapy response on longitudinal quantitative molecular imaging," *Clinical Cancer Research*, to appear (impact factor: 10.199).

4. **Liu, X.**, Yeo, K.M., and Kalagnanam, J., (2018), "A Statistical Modeling Approach for Spatio-Temporal Degradation Data", *Journal of Quality Technology (JQT)*, 50(2), 166--182. Special issue on reliability and maintenance modeling with big data.

5. **Liu, X.**, Gopal, V. and Kalagnanam, J., (2018), "A Spatio-Temporal Modeling Framework for Weather Radar Image Data in Tropical Southeast Asia", *Annals of Applied Statistics (AOAS)*, 12(1), 378-407.

6. **Liu, X.**, Yeo, K.M., Hwang, Y.D., Singh, J. and Kalagnanam, J. (2016), "A Statistical Modeling Approach for Air Quality Data Based on Physical Dispersion Processes and Its Application to Ozone Modeling", *Annals of Applied Statistics (AOAS)*, 10, 756-785.

7. **Liu, X.** and Tang, L.C. (2016), "Reliability and Spares Provisioning for Line Replaceable Units with Time-Varying Fleet Size", *IISE Transactions*, 48, 43-56.

    (*Featured in the December issue of Institute of Industrial Engineer's Industrial Engineer magazine)

8. Yeo, K., Hwang, Y., **Liu, X.**, and Kalagnanam, J. (2016), "Stochastic Optimization Algorithm for Inverse Modeling of Air Pollution", *Bulletin of the American Physical Society*, 61.

9. Singh, J., Yeo, K., **Liu, X.**, Hosseini, R., and Kalagnanam, J. (2016), "Evaluation of WRF model seasonal forecasts for tropical region of Singapore", *Advanced in Science and Research*, 12, 69-72.

10. **Liu, X.**, Al-Khalifa, K., Elsayed, A.E., Coit, D.W. and Hamouda, A.M. (2014), "Criticality Measures for Components with Multi-Dimensional Degradation", *IIE Transactions*, 46, 987-998.

11. **Liu, X.** and Tang, L.C. (2013), "Planning Accelerated Life Tests with Scheduled Inspections for Log-Location-Scale Distributions", *IEEE Transactions on Reliability*, 62, 515-526.

12. **Liu, X.** (2012), "Planning of Accelerated Life Tests with Dependent Failure Modes Based on a Gamma Frailty Model", *Technometrics*, 54, 398-409.

13. **Liu, X.**, Li, J.R., Al-Khalifa, K. Hamouda, A.M., Coit, D.W, and Elsayed, A.E., (2012), "Condition-Based Maintenance for Continuously Monitored Degrading Systems with Multiple Failure Modes", *IIE Transactions*, 45, 422-435.

    (*Featured in Industrial Engineer Magazine, Mar 2013)

14. **Liu, X.** and Tang, L.C. (2012), "Analysis for Reliability Experiments under Subsampling", *Quality Technology and Quantitative Management (QTQM)*, 10, 141-160. Special issue: Reliability Modeling, Inference and Analysis,

15. **Liu, X.** and Qiu, W.S. (2011), "Modelling and Planning of Step-Stress Accelerated Life Tests with Multiple Causes of Failure", *IEEE Transactions on Reliability*, 60(4), 712-720.

16. **Liu, X.** and Tang, L.C. (2010), "Accelerated Life Test Plans for Repairable Systems with Independent Competing Risks", *IEEE Transactions on Reliability*, 59(1), 115-127.

17. Tang, L.C. and **Liu, X.** (2010), "Planning and Inference for a Sequential Accelerated Life Test", *Journal of Quality Technology (JQT)*, 42(1), 103-118.

18. **Liu, X.** and Tang, L.C. (2010), "A Bayesian Planning Method for Accelerated Degradation Tests", *Quality and Reliability Engineering International*, 26(8), 863-875. Special Issue: Business and Industrial Statistics: Developments and Industrial Practices in Quality and Reliability.

19. **Liu, X.** and Tang, L.C. (2010), "Statistical Planning of Sequential Constant-Stress Accelerated Life Test with Stepwise Loaded Auxiliary Acceleration Factor", *Journal of Statistical Planning and Inference*, 140, 1968-85.

20. **Liu, X.** and Tang, L.C. (2009), "A Sequential Constant-Stress Accelerated Life Testing Scheme and Its Bayesian Inference", *Quality and Reliability Engineering International*, 25(1), 91-109.

US Patent

1. "Airborne particulate source detection system". US Patent Appl. No.: 14/965291, Granted: Jun 12, 2018.

2. "Detection Algorithms for Distributed Emission Sources of Abnormal Events". US Patent Appl. No.: 14/949198, Filed: November 23, 2015.

Professional Honors & Recognition

2018 **Statistics in Physical and Engineering Sciences (SPES) Award**, American Statistical Association (ASA) (http://www.amstat.org/ASA/Your-Career/Awards/Statistics-in-Physical-Engineering-Sciences-Award.aspx)

2018 **Best in Physics Award**, Joint Imaging-Therapy track, American Association of Physicists in Medicine Annual Meeting (AAPM2018), Nashville, TN, Mar 2018.

2017 **IBM Outstanding Technical Achievement Award** (*IBM health monitoring and prediction for large-scale engineering procurement construction (EPC))

2017 **Best Paper Award** Prognostics and System Health Management Conference (PHM 2017), 9-12 July, Harbin, China

2016 **Best Referred Paper Award** Quality, Statistics and Reliability (QSR) Section, INFORMS (https://higherlogicdownload.s3.amazonaws.com/INFORMS/d8a522c3-7c03-4dc4-a949-0dbefe85199a/UploadedImages/2017/QSR_Newsletter_2017.pdf)

2015 **IBM Outstanding Technical Achievement Award** (*IBM predictive environmental analytics system)

2015 **IBM Service Excellence Award (SEA)**, Global Business Service (GBS) (*Micron semiconductor pilot project)

2014 **IBM Manager's Choice Award**

2012 **Ralph A. Evans/P.K. McElroy Award** for Best Paper Reliability and Maintainability Symposium, Reno, Nevada.

2011 **National Semiconductor Gold Medal** (https://www.isem.nus.edu.sg/msc_students/honourroll.html)

Other team honors:

2016 IBM I&S Technical Accomplishments (team honor)

2015 IBM Chairman's Environmental Award (team honor)

2014   IBM I&S Technical Accomplishments (team honor)

Professional Services

- *Journals:*
1. Editorial Board Member (Apr 2016 to present), Quality and Reliability Engineering International.
2. co-Guest-Editor (2019-2020), Special Issue, Quality Engineering.

- *Professional Community Services:*
3. Council member (2018~2020), Quality, Statistics and Reliability (QSR) section, INFORMS.
4. Board of Directors (2019-2021), Analytics and Information Systems (DAIS) Division, IISE.
5. QSR International Sub-Committee, INFORMS 2019.

- *Conference Committee:*
1. Program Committee, AAAI 2020.
2. Invited/Special Cluster/Section Conference Organizing Co-Chair, 2019 INFROMS Conference on Service Science, Nanjing, China.
3. Program Committee, AAAI 2019.
4. Program Committee, The 3nd IEEE International Workshop on Big Spatial Data in conjunction with 2018 IEEE International Conference on Big Data (IEEE BigData 2018), Dec 10-13, 2018, Seattle, WA.
5. Conference subcommittee, Quality, Statistics and Reliability (QSR) section, INFORMS 2018.
6. Program Committee, The 2nd IEEE International Workshop on Big Spatial Data in conjunction with 2017 IEEE International Conference on Big Data (IEEE BigData 2017), Dec 11-14, 2017, Boston, MA.
7. Program Committee, The 12th International Conference on Reliability, Maintainability and Safety, Oct 17-19, 2018, Shanghai, China.

- *Journal/Conference Reviewer:*
Technometrics, IEEE Transactions on Reliability (ITR), IIE Transactions, Journal of Quality Technology (JQT), Naval Research Logistics (NRL), IEEE Transactions on Automation Science and Engineering (IEEE-TASE), International Journal of Production Research (IJPR), Journal of Applied Statistics, Quality and Reliability Engineering International, Quality Technology and Quality Management (QTQM), Reliability Engineering and System Safety (RESS), Journal of Modern Mathematics Frontier (JMMF), Computers and Industrial Engineering, Communications in Statistics, KDD 2017, Applied Mathematical Modelling, Mechanical System and Signal Processing (MSSP), AAAI2019, Statistical Analysis and Data Mining.

- *Department Service:*
1. 2017~2018, Undergraduate Studies Committee, Department of Industrial Engineering, University of Arkansas
2. 2017~Present, Scholarship Committee, Department of Industrial Engineering, University of Arkansas
3. 2018~Present, Global Study Committee, Department of Industrial Engineering, University of Arkansas

Teaching

- *Department of Industrial Engineering, University of Arkansas*
Spring 2019   INEG4163/5163 Introduction to Modern Statistical Techniques for Industrial Applications
Spring 2018   INEG410V/514V Special Topics in Modern Statistical Techniques for Real Industrial Problems,
Fall 2017/2018/2019   INEG2313 Applied Probability and Statistics for Engineers I

- *Department of Industrial and Systems Engineering, National University of Singapore*

Spring 2015/2016   IE5122 Statistical Quality Control
Fall 2013/2014   IE5123 Reliability Engineering

- *Department of Mechanical and Industrial Engineering, Qatar University*

Spring 2012   IENG320 Quality Control
Fall 2011   IENG423 Design of Experiments

Major Research Projects with IBM Research (2012-2017)

- Engineering Predictive Environmental Analytics System (PEAS) with the National Environmental Agency (NEA) Singapore
    My role: Technical lead (2013-2015)
    Project duration: July 2012 to July 2015
    *The project was awarded the IBM 2014 I&S Technical Accomplishments
    *The project was awarded the IBM 2015 Chairman's Environmental Award
- Pilot Research Project on Big-Data-Based Yield Prediction with Micron Semiconductor (Singapore)
        Project duration: 2015
- DECON-LIVE Project with the Singapore Land Transportation Authority (LTA) on Traffic Prediction
    Project duration: 2014-2015
- Health monitoring and prediction for large-scale engineering procurement construction (EPC) projects with FLUOR
    Project duration: 2015-2017
    *The project was awarded the IBM 2016 I&S Technical Accomplishments

Seminars/Webinars/Conference Presentations:

See*: https://sites.google.com/site/liuxiaosite1/*

SHENGFAN ZHANG, PH.D.

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University of Arkansas
Fayetteville, AR 72701
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RESEARCH INTERESTS

Mathematical modeling of stochastic systems with an emphasis on statistical and decision analysis as applied to health care and other service environments.

Methodology: stochastic processes, (partially observable) Markov decision process, simulation, statistical modeling and machine learning

Applications: medical decision making, health policy and disparities research, process improvement in health care, inventory analysis, transportation

ACADEMIC APPOINTMENTS

Department of Industrial Engineering, University of Arkansas, Fayetteville, AR
08/19-Present   Associate Professor
08/11 – 07/19   Assistant Professor

Edward P. Fitts Department of Industrial and Systems Engineering
North Carolina State University, Raleigh, NC
01/11 – 05/11   Instructor (Course: Introduction to Simulation)

EDUCATION

Ph.D. in Industrial Engineering (Minor in Statistics), 2011
North Carolina State University, Raleigh, NC
Dissertation: Modeling the Complexity of Breast Cancer under Conditions of Uncertainty (Advisor: Dr. Julie S. Ivy)

Master of Industrial Engineering, 2006
North Carolina State University, Raleigh, NC

Bachelor of Management in Management Science (Minor in Law), 2004
Fudan University, Shanghai, China

PUBLICATIONS

*denotes graduate student co-author
+denotes undergraduate student co-author

Referred Journal Articles

1. Li, Bin.*, **Zhang, S.**, Hoover, S., Arnold, R., & Capan, M. (2019). Microsimulation model using Christiana Care Early Warning System (CEWS) to evaluate physiological deterioration. *IEEE Journal of Biomedical and Health Informatics*, 23(5), 2189-2195.

2. Buyurgan, N., **Zhang, S.**, & Okyay, H.K.* (2019). A Methodical Analysis of Inventory Discrepancy under Conditions of Uncertainty in Supply Chain Management. *International Journal of Logistics*

Systems and Management, 32(2), 272-290.

3. Madadi, M.*, Heydari, M.*, **Zhang, S.**, Pohl, E., Rainwater, C., & William, D. (2018). Analyzing Overdiagnosis Risk and Cost in Cancer Screening: A Case of Screening Mammography for Breast Cancer. *IISE Transactions on Healthcare Systems Engineering*, 8(1), 2-20.

    This Paper was featured in the ISE Magazine April 2018 issue.

4. Wang, F.*, **Zhang, S.**, & Henderson, L.M. (2018). Adaptive Decision-Making of Breast Cancer Mammography Screening: A Heuristic-Based Regression Model. *Omega*, 76, 70-84.

5. Parsa, P.*, Rossetti, M., **Zhang, S.**, & Pohl, E.A. (2017). Quantifying the Benefits of Continuous Replenishment Program for Partner Selection. *International Journal of Production Economics*, 187, 229-245.

6. Capan, M., Khojandi, A., Denton, B., Williams, K., Ayer, T., Chhatwal, J., Kurt, M., Lobo, J.M., Roberts, M., Zaric, G., **Zhang, S.,** & Schwartz, J.S. (2017). From Data to Improved Decisions: Operations Research in Healthcare Delivery. *Medical Decision Making*, 37(8), 849-859.

7. Gedik, R.*, **Zhang, S.**, & Rainwater C.E. (2017). Strategic level proton therapy patient admission planning: a Markov decision process modeling approach. *Health Care Management Science*, 20(2), 286-302.

8. Madadi, M.*, **Zhang, S.**, & Henderson, L.M. (2015). Evaluation of breast cancer mammography screening policies considering adherence behavior. *European Journal of Operational Research*, 247(2), 630-640.

9. **Zhang, S.**, Ivy, J.S., Wilson, J.R., & Yankaskas, B.C. (2014). Competing risks analysis in mortality estimation for breast cancer patients from independent risk groups. *Health Care Management Science*, 17(3), 259-269.

10. Nagarajan, R., **Zhang, S.**, Payton, F.C., & Massarweh, S. (2014). Inferring breast cancer concomitant diagnosis and comorbidities from the nationwide inpatient sample using social network analysis. *Health Systems*, 3(2), 136-142.

11. Madadi, M.*, **Zhang, S.**, Yeary, K.H.K., & Henderson, L.M. (2014). Analyzing the factors associated with women's attitudes and behaviors toward screening mammography using design-based logistic regression. *Breast Cancer Research and Treatment*, 144(1), 193-204.

12. **Zhang, S.**, Payton, F.C., & Ivy, J.S. (2013). Characterizing the impact of mental disorders on HIV patient length of stay and total charges. *IIE Transactions on Healthcare Systems Engineering*, 3(3), 139-146.

    This Paper was featured in the IE Magazine October 2013 issue.

13. **Zhang, S.**, Ivy, J.S., Diehl, K.M., & Yankaskas, B.C. (2013). The association of breast density with breast cancer mortality in African American and white women screened in community practice. *Breast Cancer Research and Treatment*, 137(1), 273-283.

14. **Zhang, S.**, Ivy, J.S., Payton, F.C., & Diehl, K.M. (2010). Modeling the impact of comorbidity on breast cancer patient outcomes. *Health Care Management Science*, 13(2), 137-54.

Papers under Review
1. Wang, F.*, & **Zhang, S.** Personalized Biopsy Referral Decision Modeling for Breast Cancer Screening and Surveillance Mammography in the Presence of Cancer Regression. Under revision for European

Journal of Operational Research

2. Bolivar, J. D.*, **Zhang, S.**, Akhavan-Tabatabaei R., & Ko, A. Incorporating Patient Preferences and Risk of Overdiagnosis in Breast Cancer Treatment Decisions. Under 1st round review at *Decision Analysis*

3. Wang, F.*, **Zhang, S.**, & Jozkowski, K. Evaluating Personalized HPV Catch-up Vaccination Strategies: Should We Go Beyond Age 26? Under 1st round revision at *Medical Decision Making.*

4. Sanders, R.+, & **Zhang, S**. Effective Resource Utilization in Arkansas Public Schools. Under 1st round review at International Journal of Educational Management

Books
1. Kong, N., & **Zhang, S.** (Eds.) (2018) *Decision Analytics and Optimization in Disease Prevention and Treatment*. John Wiley & Sons, New York.

Book Chapters
1. Madadi M.*, & **Zhang S.** (2018) Chapter 10: Cost-Effectiveness Analysis of Breast Cancer Mammography Screening Policies Considering Uncertainty in Women's Adherence. In Kong, N., & Zhang, S. (Eds.), *Decision Analytics and Optimization in Disease Prevention and Treatment* (pp. 223-240). John Wiley & Sons, New York.

2. Torres, S.A.V+, **Zhang, S.**, & Akhavan-Tabatabaei, R. (2015). Optimal Decision Making for Breast Cancer Treatment in the Presence of Cancer Regression and Type II Error in Mammography Results. In *Analysis, Modelling, Optimization, and Numerical Techniques*, *Springer Proceedings in Mathematics & Statistics* (pp. 185-204). Springer, Cham.

Peer-Reviewed Conference Papers
1. Parsa, P.*, Rossetti, M., **Zhang, S.** Multi Stop Truckload Planning. In *Proceedings of the 2017 Industrial and Systems Engineering Conference*, Pittsburgh, PA 2017.

2. Parsa, P.*, Rossetti, M., **Zhang, S.**, and Pohl, E.A. A Multi-Objective Decision Analysis for Supply Chain Collaboration Programs. In *Proceedings of the 2016 Annual Meeting of the Decision Science Institute*, Austin, TX, November 2016.

3. Lee, H.*, **Zhang, S.**, White, J.A. The Dynamic Block Stacking Problem with Random Demand. In *Proceedings of the 2016 Industrial and Systems Engineering Research Conference*, Anaheim, CA, May 2016.

    2016 ISERC Facility Logistics Track Best Paper Award

4. Madadi, M.*, Holmer R.+, **Zhang, S.**, Nachtmann, H. Dynamic Decision Modeling for Inland Waterway Disruptions. In *Proceedings of the 2016 Industrial and Systems Engineering Research Conference*, Anaheim, CA, May 2016.

5. Pham, A.*, **Zhang, S.** Estimation of Natural History Parameters for Low-Grade Glioma Patients. In *Proceedings of the 2016 Industrial and Systems Engineering Research Conference*, Anaheim, CA, May 2016.

6. Dollar, E.+, **Zhang, S**. Exploring Hospitalization Characteristics for Heart Disease Patients with Diabetes. In *Proceedings of the 2015 Industrial and Systems Engineering Research Conference*, Nashville, TN, May 2015.

    Ethan Dollar received the NSF Travel Grant.

7. Wang, F.[*], **Zhang, S.**, and Yang, J. Prediction of Depressive Mood of College Students: an Elastic-Net Regularized Model. In *Proceedings of the 2014 INFORMS Workshop on Data Mining and Analytics*, San Francisco, CA, November 2014.

8. Lamb, K.[*], **Zhang, S.**, and Jackson, N.[+] Association between Comorbidities and Hospital Resource Usage for Diabetes Inpatients. In *Proceedings of the 2014 Industrial and Systems Engineering Research Conference*, Montreal, Canada, 2014.

9. Wang, F.[*], **Zhang, S.** Optimizing Breast Cancer Mammography Screening Schedules Using a Regression-Based Model. In *Proceedings of the 8th INFORMS Workshop on Data Mining and Health Informatics*, Minneapolis, MN, October 2013.

10. Madadi, M.[*], and **Zhang, S.** Factors Associated with Women's Attitudes and Behaviors toward Screening Mammography Using Design-Based Logistic Regression. In *Proceedings of the 8th INFORMS Workshop on Data Mining and Health Informatics*, Minneapolis, MN, October 2013.

11. Madadi, M.[*], and **Zhang, S**. Cost Evaluation of Mammography Screening Policies Considering Imperfect Adherence. In *Proceedings of the 2013 Industrial and Systems Engineering Research Conference*, San Juan, Puerto Rico, 2013.

12. **Zhang**, S., and Ivy, J.S. Analytic Modeling of Breast Cancer Spontaneous Regression. In *Proceedings of the 2012 Industrial and Systems Research Conference*, Orlando, FL, 2012.

13. **Zhang, S.**, Payton, F., and Ivy, J. Understanding the Role of Mental Disorders on HIV Patient Outcomes. In *Proceedings of the 6th INFORMS Workshop on Data Mining and Health Informatics*, Charlotte, NC, November 2011.

Working Papers
1. Lee, H.[*], **Zhang, S.**, White, J.A. A Markov Decision Process Model for the Dynamic Block Stacking Problem. (Extending from the conference paper to a full paper)

2. Okyay. H. K.[*], **Zhang, S.** Fuzzy Multi-objective Markov Decision Process Model for Inventory Record Inaccuracy. (Transitioning from a dissertation chapter)

3. Talafuse, T.[*], Pohl, E.A., **Zhang, S.**, Application of Markov Decision Processes for Optimization of Reliability Growth. (Transitioning from a dissertation chapter)

4. **Zhang, S.**, Ivy, J.S., and Diehl, K.M. Decision Modeling in the Presence of Breast Cancer Spontaneous Regression. (Draft completed; final editing)

RESEARCH FUNDING
1. **Shengfan Zhang** (PI), Kristen Jozkowski (Co-PI)
   Women's Giving Circle, University of Arkansas, $17,887
   "Increase Awareness of Early Prevention of Cervical Cancer through Designing a Personalized HPV Vaccination"
   September 2013 – March 2014

2. Manuel Rossetti (PI), Ed Pohl (Co-PI), **Shengfan Zhang** (Co-PI)
   Covidien, Center for Excellence in Logistics and Distribution (NSF I/UCRC), $60,000
   "A Decision Support Tool for Continuous Replenishment Program Analysis"
   August 2013 – July 2014

3. **Shengfan Zhang** (PI), Ed Pohl (Co-PI)
   University of Arkansas Medical Sciences, $60,000
   "Initiation of Telemedicine-based Collaborative Care at the Psychiatric Research Institute"
   June 2014 – May 2015

4. **Shengfan Zhang** (PI), Heather Nachtmann (Co-PI)
   U.S. Department of Transportation, the Maritime Transportation Research and Education Center,
   $236,165 (including $80,947 cost-share)
   "Dynamic Decision Modeling for Inland Waterway Disruptions"
   August 2014 – December 2016

5. Chase Rainwater (PI), **Shengfan Zhang** (Co-PI)
   ABF Freight, Center for Excellence in Logistics and Distribution (NSF I/UCRC), $60,000
   "Decision Tool for Identifying Critical Nodes in an LTL Network"
   August 2014 – August 2015

6. **Shengfan Zhang** (PI), Jing Yang (Co-PI), Jingxian Wu (Co-PI)
   Provost's Collaborative Research Grant, $1,500
   "A Preliminary Study toward Developing an mHealth System for Early Detection of Postpartum
   Depression"
   November 2014 – May 2015

7. Manuel Rossetti (PI), Ed Pohl (Co-PI), **Shengfan Zhang** (Co-PI)
   Covidien, Center for Excellence in Logistics and Distribution (NSF I/UCRC), $60,000
   "Order Fulfillment and Order Process Modeling for CRP and Non-CRP Customers"
   January 2015 – December 2015

8. **Shengfan Zhang** (PI)
   Arkansas Department of Higher Education, $2,750
   "SURF: A Decision Support Tool for Open-Access Scheduling to Reduce Patient No-Show Rate in an
   Outpatient Psychiatric Clinic", Student awardee: Kaitlyn Thomas
   January 2015 – May 2015

9. **Shengfan Zhang** (PI), Chase Rainwater (Co-PI)
   Center Designated Project, Center for Excellence in Logistics and Distribution, $46,115
   "Development of Logistics Risk Assessment Tool"
   July 2015 – June 2017

10. Manuel Rossetti (PI), **Shengfan Zhang** (Co-PI)
    Medtronic, Center for Excellence in Logistics and Distribution (NSF I/UCRC), $60,000
    "Multi-Stop and Load Building Optimization Models"
    January 2016 – December 2016

11. **Shengfan Zhang** (PI), Wen Zhang (Co-PI)
    Provost's Collaborative Research Grant, $2,000
    "Towards Resource-Efficient and Operation-Flexible Planning for Maintenance and Management of
    Water Distribution System"

January 2016 – July 2016

12. **Shengfan Zhang** (PI), Eric Specking (Co-PI)
National Science Foundation (NSF) Research Experiences for Teachers (RET) Supplement for CELDi
(PI: Manuel Rossetti), $20,000
August 2016 – August 2017

13. **Shengfan Zhang** (PI)
Arkansas Department of Higher Education, $4,000
"SURF: Developing an HPV Infection Risk Prediction Model and Self-Assessment Tool for Young Adult Females", Student awardee: Rachel Holmer
January 2017 – December 2017

14. **Shengfan Zhang** (PI), W. Art Chaovalitwongse (Co-PI)
Arkansas Biosciences Institute, $16,210
"An Integrated Decision Analytics Framework for Lung Volume Reduction Surgery Treatment of Emphysema"
July 2017 – May 2018

15. Donald Catanzaro (PI), **Shengfan Zhang** (Co-PI)
University of California at San Diego (Sub-award from NIH R01AI137681), $597,230
"A blood-based multimetric index to predict progression to active tuberculosis disease"
April 2018 – March 2023

Other Grants
1. Daniel Fritsche, Honor College Research Grant, University of Arkansas $1,250 ($1,000 mentor funds), 2016
2. Cam Tu Nguyen, Honor College Research Grant, University of Arkansas $1,250 ($1,000 mentor funds), 2017
3. Ryan Sanders, Honors College Research Grant, University of Arkansas, $1,250 ($1,000 mentor funds), 2018

PRESENTATIONS
Bold represents presenters
*denotes graduate student, +denotes undergraduate student

Oral Presentations
1. **Sanders, R.**+, and Zhang S. "Effective Resource Utilization in Arkansas Public Schools", 2018 Institute of Industrial and Systems Engineering Annual Conference, Orlando, FL

2. Wang, F.*, and **Zhang, S.** "Personalized Modeling for Assessing HPV Vaccination Strategies for Females", 2017 INFORMS Annual Meeting, Houston, TX

3. Li, B.*, Capan, M., and **Zhang, S.** "Microsimulation Model using Christiana Care Early Warning System (CEWS) to Evaluate Physiological Deterioration", 2017 INFORMS Annual Meeting, Houston, TX

4. **Holmer, R.**+, Zhang S. "Developing an HPV Infection Risk Prediction Model and Self-assessment Tool for Young Adult Females", 2017 INFORMS Annual Meeting, Houston, TX

5. **Tong, J.**, Zhang, S., and Nachtmann, H. "A Finite-horizon MDP Model for Decision Making during the Inland Waterway Disruptions", 2017 ASME International Annual Conference, Huntsville, AL

6. Wang, F.[*], and **Zhang, S.** "Personalized Modeling for Assessing HPV Vaccination Policies for Females", 2017 Institute of Industrial and Systems Engineering Annual Conference, Pittsburgh, PA

7. **Parsa, P.**[*], Rossetti, M., and Zhang, S. "Multi Stop Truck Load Planning", 2017 Institute of Industrial and Systems Engineering Annual Conference, Pittsburgh, PA.

8. **Sanders, R.**[+], Zhang, S., and Rainwater, C. "Development of a Logistics Risk Assessment Tool", 2017 Institute of Industrial and Systems Engineering Annual Conference, Pittsburgh, PA

9. Wang, F.[*], and **Zhang, S.** "Personalized Modeling of Assessing HPV Vaccination Policies for Females", 2017 Institute of Industrial and Systems Engineering Annual Conference, Pittsburgh, PA

10. **Parsa, P.**[*], Rossetti, M., Zhang, S., and Pohl, E.A. "A Multi-Objective Decision Analysis for Supply Chain Collaboration Programs" 2016 Annual Meeting of the Decision Science Institute, Austin, TX

11. Wang, F.[*], Thomas, K.[+], **Zhang, S.**, Pohl, E. "Predictive Modeling and Decision Support Tool to Reduce Patient No-Show Rate in an Outpatient Psychiatric Clinic", 2016 Driving Value through Innovation in Healthcare Conference, Center for Innovation in Healthcare Logistics, Fayetteville, AR

12. **Lee, H.*** , Zhang, S., and White, J., "The Dynamic Block Stacking Problem with Random Demand", 2016 Industrial and Systems Engineering Research Conference, Anaheim, CA

13. Madadi, M., **Holmer, R.**[+], Zhang, S., and Nachtmann, H., "Dynamic Decision Modeling for Inland Waterway Disruptions", 2016 Industrial and Systems Engineering Research Conference, Anaheim, CA

14. **Pham, A.**[*], Zhang, S., "Estimation of Natural History Parameters for Low-Grade Glioma Patient", 2016 Industrial and Systems Engineering Research Conference, Anaheim, CA

15. **Lee, H.** [*], Zhang, S., and White, J., "A Markov Decision Process Model for the Dynamic Block Stacking Problem", 2015 INFORMS Annual Meeting, Philadelphia, PA

16. **Madadi, M.**[*], Maillart, L., Cassady, R., Zhang, S., "Estimation of Server Utilization in an Unreliable Queueing System with Stacked Servers", 2015 INFORMS Annual Meeting, Philadelphia, PA

17. **Madadi M.**[*], Zhang S., and Henderson L., "Evaluation of Breast Cancer Mammography Screening Policies Considering Adherence Behavior", 2015 INFORMS Annual Meeting, Philadelphia, PA

18. **Madadi, M.**[*], Zhang, S., Pohl, E., "Minimizing Overdiagnosis Risk in Cancer Screening", 2015 INFORMS Annual Meeting, Philadelphia, PA

19. **Talafuse, T.**[*], Pohl, E., and Zhang, S., "Application of Markov Decision Processes for Optimization of Reliability Growth", 2015 INFORMS Annual Meeting, Philadelphia, PA

20. **Wang, F.**[*], Zhang, S., Jozkowski, K., "Assessment of Individualized Human Papillomavirus Vaccination Strategies", 2015 INFORMS Annual Meeting, Philadelphia, PA

21. **Wang, F.**[*], Thomas, K.[+], Zhang, S., Pohl, E., "Predicting No-Show Behavior of Patients at a Mental Health Clinic", 2015 INFORMS Annual Meeting, Philadelphia, PA

22. **Dollar, E.**[+], Zhang, S., "Exploring Hospitalization Characteristics for Heart Disease Patients with Diabetes", 2015 Industrial and Systems Engineering Research Conference, Nashville, TN

23. **Thomas, K.**[+], Zhang, S., Pohl, E., "A Decision Support Tool for Open Access Scheduling to Reduce Patient No Show Rate in a Outpatient Psychiatric Clinic", 2015 Industrial and Systems Engineering

Research Conference, Nashville, TN

24. **Madadi, M.***, Zhang, S., Nachtmann, H., "Stochastic Decision Modeling for Inland Waterway Disruptions", ", 2015 Industrial and Systems Engineering Research Conference, Nashville, TN

25. Madadi, M.*, **Zhang, S.**, Pohl, E., "Minimizing Overdiagnosis Risk in Cancer Screening", 2015 Industrial and Systems Engineering Research Conference, Nashville, TN

26. **Madadi, M.***, Maillart, L., Cassady, R., Zhang, S., "Optimal Replacement Policy in a Multi-Server Unreliable Queue with Heterogeneous Utilization", 2015 Industrial and Systems Engineering Research Conference, Nashville, TN

27. **Parsa, P.***, Rossetti, M., Zhang, S., "Partner Selection in Continuous Replenishment Programs", 2015 Industrial and Systems Engineering Research Conference, Nashville, TN

28. **Pham, A.***, Zhang, S., "Post-treatment Decision Modeling for Patients Diagnosed with Low Grade Gliomas", 2015 Industrial and Systems Engineering Research Conference, Nashville, TN

29. **Wang, F.***, Zhang, S., "Adaptive Decision-Making of Breast Cancer Mammography Screening", 2015 Industrial and Systems Engineering Research Conference, Nashville, TN

30. Wang, F.*, **Zhang, S.**, Jozkowski, K., "Assessment of Individualized Human Papillomavirus Vaccination Strategies", 2015 Industrial and Systems Engineering Research Conference, Nashville, TN

31. **Zhang, S.**, "Activity-Based Learning for Engaging Students in Active Learning", 2015 Industrial and Systems Engineering Research Conference, Nashville, TN

32. **Madadi M.***, Zhang S., and Henderson L., "Evaluation of Breast Cancer Mammography Screening Policies Considering Adherence Behavior", 2014 INFORMS Annual Meeting, Philadelphia, PA

33. **Madadi M.***, Zhang S., and Pohl E., "Minimizing Overdiagnosis in Cancer Screening while Considering Variation in Patients' Adherence Behaviors", 2014 INFORMS Annual Meeting, San Francisco, CA

34. Wang, F.*, **Zhang S.**, and Jozkowski K., "Optimal Design of Personalized HPV Vaccination Program", 2014 INFORMS Annual Meeting, San Francisco, CA

35. **Wang, F.***, and Zhang, S., "Adaptive Decision-Making of Breast Cancer Mammography Screening: A Heuristic Regression-Based Model", 2014 INFORMS Annual Meeting, San Francisco, CA

36. **Wang, F.***, Zhang, S. and Yang, J., "Prediction of Depressive Mood of College Students: An Elastic-Net Regularized Model", 2014 INFORMS Workshop on Data Mining and Analytics, San Francisco, CA

37. Madadi M.*, **Zhang S.**, and Henderson L., "Evaluation of Breast Cancer Mammography Screening Policies Considering Adherence Behavior", 2014 Healthcare Systems Optimization Workshop, Chicago, IL

38. Madadi M.*, **Zhang S.**, and Pohl E., "A Stochastic Nonlinear Programming Model to Optimize Mammography Screening Policies Considering Women's Imperfect Adherence", 2014 Industrial and Systems Engineering Research Conference, Montreal, Canada

39. Wang, F.*, and **Zhang, S.**, "Optimizing Breast Cancer Mammography Screening Schedules Using a Regression-based Model", 2014 Industrial and Systems Engineering Research Conference, Montreal, Canada

40. **Lamb, K.**[*], and Zhang, S., "Association between Comorbidities and Hospital Resource Usage for Diabetes Inpatients", 2014 Industrial and Systems Engineering Research Conference, Montreal, Canada

41. **Madadi, M.**[*], and Zhang, S. and Pohl, E., "A Stochastic Nonlinear Programming Model for Mammography Screening Policies Considering Adherence", 2013 INFORMS Annual Meeting, Minneapolis, MN

42. **Wang, F.**[*], and Zhang, S., "Optimizing Breast Cancer Mammography Screening Schedules Using a Regression-based Model", 2013 INFORMS Annual Meeting, Minneapolis, MN

43. **Bao, W.**[*], and Zhang, S., "Optimizing the Dose and Delivery of Influenza Vaccine Using a Multi-Objective Simulation Approach", 2013 INFORMS Annual Meeting, Minneapolis, MN

44. **Madadi, M.**[*], Zhang, S., and Pohl, E., "A Nonlinear Programming Model to Optimize Mammography Screening Policies", 2013 INFORMS Healthcare Conference, Chicago, IL

45. **Wang, F.**[*], and Zhang, S., "Personalized Biopsy Referral Decision Modeling in the Presence of Breast Cancer Regression", 2013 INFORMS Healthcare Conference, Chicago, IL

46. **Madadi, M.**[*], and Zhang, S., "Factors Associated with Women's Attitudes and Behaviors toward Screening Mammography Using Design-Based Logistic Regression", *the 8th INFORMS Workshop on Data Mining and Health Informatics*, Minneapolis, MN, October 2013.

47. **Wang, F.**[*], and Zhang, S., "Optimizing Breast Cancer Mammography Screening Schedules Using a Regression-Based Model", *the 8th INFORMS Workshop on Data Mining and Health Informatics*, Minneapolis, MN, October 2013.

48. **Madadi, M.**[*], and Zhang, S., "Cost Evaluation of Mammography Screening Policies Considering Imperfect Adherence", 2013 Industrial and Systems Engineering Research Conference, San Juan, Puerto Rico

49. **Gedik, R.**[*], Rainwater, C., and Zhang, S., "Patient Scheduling in a Proton Therapy Facility, An MDP Approach", 2013 Industrial and Systems Engineering Research Conference, San Juan, Puerto Rico

50. **Zhang, S.**, Wang, H., and Bao, W.[*], "Analyzing the Effect of Comorbidities on Delay in Discharge among Breast Cancer Inpatients", 2012 INFORMS Annual Meeting, Phoenix, AZ

51. **Madadi, M.**[*], and Zhang, S., "Evaluation of Breast Cancer Mammography Screening Policies Considering Adherence Behavior", 2012 INFORMS Annual Meeting, Phoenix, AZ

52. **Wang, F.**[*], Zhang, S., and Diehl, K., "Personalized Biopsy Referral Decision Modeling in the Presence of Breast Cancer Regression", 2012 INFORMS Annual Meeting, Phoenix, AZ

53. **Gedik, R.**[*], Rainwater, C., and Zhang, S., "Patient Scheduling in a Proton Therapy Facility, An MDP Modeling Approach", 2012 INFORMS Annual Meeting, Phoenix, AZ

54. **Zhang, S.**, and Ivy, J., "Optimal Decision Modeling for Breast Cancer Patients in the Presence of Disease Regression", 2012 INFORMS International Conference, Beijing, China

55. **Zhang, S.**, and Ivy, J., "Analytic Modeling of Breast Cancer Spontaneous Regression", 2012 Industrial and Systems Engineering Research Conference, Orlando, FL

56. **Madadi, M.**[*], and Zhang, S., "Analyzing Women's Perception of Doing Mammogram Using Artificial Neural Network and Logistic Regression: A Preliminary Study", 2012 Industrial and Systems Engineering Research Conference, Orlando, FL

57. **Zhang, S.**, and Ivy, J., "An Optimal Decision Model for Breast Cancer Patients with Spontaneous Disease Regression", 2011 INFORMS Annual Conference, Charlotte, NC

58. **Zhang, S.**, Payton, F., and Ivy, J. "Understanding the Role of Mental Disorders on HIV Patient Outcomes", the *6th INFORMS Workshop on Data Mining and Health Informatics*, Charlotte, NC, November 2011.

59. **Zhang, S.**, He, Q.*, and Ivy, J., "Modeling Breast Cancer Natural History with Unknown Progression Rates", 2011 Industrial Engineering Research Conference, Reno, NV

60. **Zhang, S.**, and Ivy, J., and Diehl, K., "Characterizing the Risk Factors on Mortality for Breast Cancer Patients", 2010 INFORMS Annual Conference, Austin, TX

61. **Zhang, S.**, and Ivy, J., "Should We Screening if Breast Cancer Can Regress", 2010 INFORMS Annual Conference, Austin, TX

62. **Zhang, S.**, Ivy, J., and Diehl, K., "Modeling Mortality Probabilities for Breast Cancer Patients Using Screening Registry Data", 2009 INFORMS Annual Meeting, San Diego, CA

63. **Zhang, S.**, Ivy, J., and Payton, F., Modeling the Impact of Comorbidity on Breast Cancer Patient Outcomes. 2009 Industrial Engineering Research Conference, Miami, FL

Poster Presentation

1. **Wang, F.***, and Zhang, S., "Adaptive Decision-Making of Breast Cancer Mammography Screening: A Heuristic Regression-Based Model", 2014 Graduate Student Research Competition, University of Arkansas, Fayetteville, AR

    2nd Place Winner in the Competition

2. **Madadi M.***, Zhang S., and Henderson L., "Evaluation of Breast Cancer Mammography Screening Policies Considering Heterogeneity in Women's Adherence Behavior", 2014 INFORMS Annual Meeting, San Francisco, CA

    2nd Place Prize in the Interactive Sessions Competition

3. **Madadi M.***, Zhang S., and Pohl E., "Minimizing Overdiagnosis in Cancer Screening while Considering Variation in Patients' Adherence Behaviors", Minority Issues Forum (MIF) Poster Competition, 2014 INFORMS Annual Meeting, San Francisco, CA

4. **Wang, F.***, and Zhang, S., "Adaptive Decision-Making of Breast Cancer Mammography Screening: A Heuristic Regression-Based Model", 2014 INFORMS Annual Meeting, San Francisco, CA

5. **Madadi M.***, Zhang S., and Pohl E., "Minimizing Overdiagnosis in Cancer Screening while Considering Variation in Patients' Adherence Behaviors", 2014 Society for Medical Decision Making Annual Meeting, Miami, FL

    Finalist in the Lee B. Lusted Student Prize

6. **Wang, F.***, and Zhang, S., "Adaptive Decision-Making of Breast Cancer Mammography Screening: A Heuristic Regression-Based Model", 2014 Society for Medical Decision Making Annual Meeting, Miami, FL

7. **Madadi M.***, Zhang S., Henderson L., "Evaluation of Breast Cancer Mammography Screening Policies Considering Adherence Behavior", 2014 ASEE Midwest Section Conference, Fort Smith, AR

8. **Wang, F.**[*], and Zhang, S., "Adaptive Decision-Making of Breast Cancer Mammography Screening: A Heuristic Regression-Based Model", 2014 ASEE Midwest Section Conference, Fort Smith, AR

9. **Madadi M.**[*], Zhang S., and Pohl E., "Minimizing Overdiagnosis in Cancer Screening while Considering Variation in Patients' Adherence Behaviors", 2014 Healthcare Systems Optimization Workshop, Chicago, IL

    Finalist in the Poster Competition; Received NSF Travel Grant

10. **Madadi M.**[*], Zhang S., Yeary K. H. K., and Henderson L., "Analyzing Factors Associated with Women's Attitudes and Behaviors toward Mammography", 2012 INFORMS Annual Meeting, Phoenix, AZ

11. Madadi M.[*], and **Zhang S.**, "Evaluation of Breast Cancer Mammography Screening Policies Considering Adherence Behavior", (Phoenix, AZ), Minority Issues Forum (MIF) Poster Competition, 2012 INFORMS Annual Meeting, Phoenix, AZ

    Finalist in the Student Poster Competition

HONORS AND AWARDS

2018   Moving Spirit Award for Fora, INFORMS
2017   Volunteer Service Award, INFORMS
2016   Best Paper Award, Industrial and Systems Engineering Research Conference, Facility Logistics Track, Co-author with Hueon Lee and John A. White
2016   Outstanding Service to Students Award, College of Engineering, University of Arkansas
2014   2nd Place Prize, INFORMS Interactive Sessions Competition, Coauthor with graduate student Mahboubeh Madadi
2014   Outstanding Faculty Advisor, Department of Industrial Engineering, University of Arkansas
2013   New Faculty Commendation for Teaching Commitment, University of Arkansas
2012   New Faculty Commendation for Teaching Commitment, University of Arkansas
2012   Industrial Engineering Research Conference New Faculty Colloquium
2010   Minority Issues Forum Travel Grant, INFORMS
2010   Alpha Pi Mu Industrial Engineering Honor Society
2010   Future Academician Colloquium, INFORMS
2010   Preparing the Professoriate Fellowship, North Carolina State University
2008   Outstanding Teaching Assistant Award, E.P. Fitts Dept of ISE, NC State University

Selected Student Awards
Mahboubeh Madadi (Ph.D.)
    Outstanding Graduate Student Award, Industrial Engineering, University of Arkansas, 2015
     2nd Place Prize, INFORMS Interactive Sessions Competition, 2014
    NSF Travel Grant, Health Systems Optimization Workshop, 2014

Fan Wang (Ph.D.)
    Porter Stone Coop Award, College of Engineering, University of Arkansas, 2017
    2nd Place, Graduate Student Research Competition, University of Arkansas, 2014

Rachel Holmer (B.S.)
    Senior of Significance, University of Arkansas, 2017
    Student Undergraduate Research Fellowship (SURF) Grant, 2017

UPS Minorities Scholarship, IISE, 2017
Undergraduate Research Award, Industrial Engineering, University of Arkansas, 2017

Daniel Fritsche (B.S.)
Class of Razorback Classics (top 11 graduating students at the University of Arkansas), 2016
Outstanding Senior Award, Industrial Engineering, University of Arkansas, 2016
Honors College Research Grant, University of Arkansas, 2016

Kaitlyn Thomas (B.S.)
Undergraduate Research Award, Industrial Engineering, University of Arkansas, 2015
SURG Grant, 2015

TEACHING ACTIVITIES
Courses Taught and Evaluations[*]
[*]Rating based on the average of three core items: overall course rating, overall instructor rating, instructor's spoken English

Undergraduate Courses
INEG2333 Applied Probability and Statistics for Engineers II (required)
    Spring 2018, 4.5/5.0
    Spring 2017, 4.05/5.0
    Spring 2016, 3.74/5.0

INEG4323 Quality Engineering and Management (tech elective)
    Fall 2017, 4.67/5.0
    Spring 2017, 4.3/5.0
    Fall 2015, 4.03/5.0
    Fall 2014, 4.24/5.0
    Fall 2013, 4.11/5.0
    Fall 2012, 3.59/5.0

Graduate Courses
INEG5313 Engineering Applications of Probability and Stochastic Processes
    Fall 2016 (INEG5323), N/A
    Fall 2015 (Co-taught with Richard Cassady), 4.31/5.0
    Fall 2014, 4.09/5.0
    Fall 2011, 4.31/5.0

INEG514V Decision Modeling in Healthcare
    Spring 2018, N/A (enrollment <5)
    Spring 2015, 4.67/5.0
    Spring 2012, 4.0/5.0

INEG514V Advanced Stochastic Processes
    Spring 2014, 4.17/5.0
    Spring 2013, 4.92/5.0

Teaching Grant and Development

Teaching Improvement Grant, University of Arkansas, 2013, $1500
Scholarship of Teaching and Learning Award, University of Arkansas, 2012, $250
University of Arkansas Teaching Camp 2012, 2013, 2018

K-12 Education Activities
Faculty (PI), IE Challenge Program, working with two K-12 teachers, 2015-present
    Funded by NSF RET Supplement 2016 – 2017
Adopt-A-Classroom program, Arkansas Education Renewal Zone, taught 9th grade math class in
    Farmington High School, 2013

STUDENT ADVISING AND COMMITTEE SERVICES

Ph.D. Dissertations Directed and In Progress
1. Maryam Kheirandish Borujeni, Ph.D. Expected 2023
2. Ahla Ko, Ph.D. Expected 2023
3. Muhenned Abdulsahib, Ph.D. Expected 2022
4. Maryam Alimohammadi, Ph.D. Expected 2021, Co-advised with W. Art Chaovalitwongse
5. Hueon Lee, Ph.D. Expected 2019, Co-advised with John White and Kelly Sullivan
6. Fan Wang, Ph.D. *Personalized Decision Modeling for Intervention and Prevention of Cancers*, July 2017.
    Current affiliation: Decision Manager, Walmart Labs
7. Mahboubeh Madadi, Ph.D. *Preventive Maintenance Decision Modeling in Health and Service Systems*, July
    2015. Current affiliation: Assistant Professor, Louisiana Tech University
8. H. Kaan Okyay, Ph.D. *Detailed Inventory Record Inaccuracy Analysis*, May 2014, Co-Chair with Nebil
    Buyurgan. Current affiliation: Research Scientist, Amazon

M.S. Theses/Project Directed and In Progress
1. Ryan Sanders, M.S. Expected 2019
2. Yufei Gao, M.S. *Systematic Review for Water Network Failure Models and Cases*, December 2017. Current
    affiliation: Consultant, SAP Ariba, China
3. Emily Moneka Francis Xavier, M.S. *Safety Performance Prediction of Large-Truck Drivers in the
    Transportation Industry*, December 2016. Current affiliation: Statistical Analyst, Walmart
4. Anh Pham, M.S. *Risk Estimation toward a Natural History Model for Low Grade Glioma Patients*, May 2016.
5. Sai Pantham, M.S. (project) *Reverse Logistics Assessment Model for Pharmaceutical Industry*, December
    2015. Current affiliation: Business Analyst, Amazon.

Non-thesis Committee Chair
1. Wei Bao, M.S., 2014
2. Fan Wang, M.S., 2013

Undergraduate Honors Theses and Research Directed
1. Alexandra Gentile, B.S. expected 2020
2. Sierra Wagner, B.S. expected 2020
3. Nicole Hayes, B.S., *Data Visualization of Treatment Outcomes for Tuberculosis Patients*, May 2019
4. Joy Jenkins, B.S., *Dynamic Prediction of Treatment Outcomes for Recurrent Tuberculosis Patients*, July 2019
5. Ryan Sanders, B.S., *Effective Resource Utilization in Arkansas Public Schools*, May 2018
6. Rachel Holmer, B.S., *Developing an HPV Infection Risk Prediction Model for Adult Females*, May 2018
7. Cam Tu Nguyen, B.S., *Exploring the Association between Patient Waiting Time, No-Shows and Overbooking
    Strategy to Improve Efficiency in Health Care*, May 2017

8. Daniel Fritsche, B.S., *Developing a Logistics Risk Assessment Tool*, May 2016
9. Brian Trussell, B.S., *Predicting Nonadherence Behavior Towards Mammography Screening Guidelines*, May 2016
10. Kaitlyn Thomas, B.S., *A Decision Support Tool for Appointment Scheduling to Reduce Patient No-Show Rate in an Outpatient Psychiatric Clinic*, May 2015
11. Peiwen Duan, B.S., *Hospital Discharge Decision Modeling for Mental Health Inpatients*, May 2014
12. Jose Beltran and Joshua Foster, Freshmen Engineering Program Honors Research 2017-2018
13. Kara Maurer, Amelia Mclauchlan, Emily Feuerborn, & Riley Cochrane, Freshmen Engineering Program Honors Innovation, 2017-2018
14. Anna Hudgeons and Rachel Holmer, Freshmen Engineering Program Honors Research 2014- 2015
15. Emily Fox, Freshmen Engineering Program Honors Research 2013-2014

Thesis and Dissertation Committee Served
1. Damaso Dominguez, Civil Engineering, Ph.D. Expected 2020 (Chair: Gary Prinz)
2. Alihussin Aliwan, Civil Engineering, Ph.D. Expected 2020 (Chair: Gary Prinz)
3. Waleed Saad Alihosaini, Electrical Engineering, Ph.D. Expected 2020 (Chair: Yue Zhao)
4. Sinan Obaidat, Ph.D. Expected 2020 (Chair: Haitao Liao)
5. Justin Taylor, M.S. Expect 2019 (Chair: Ashlea Milburn)
6. Mohammad Hazzaz Mahmud, Electrial Engineering, Ph.D. Expected 2019 (Chair: Yue Zhao)
7. Juliana Bright, Ph.D. Expected 2019 (Chair: Manuel Rossetti)
8. Khatereh Ahadi, Ph.D. 2018 (Chair: Kelly Sullivan)
9. Anna Hudgeons, B.S. 2018 (Chair: Ashlea Milburn)
10. Bin Li, Ph.D. 2018 (Chair: Ashlea Milburn)
11. Payam Parsa, Ph.D. 2017 (Chair: Manuel Rossetti)
12. Maria Luisa Janer Rubio, M.S. 2017 (Chair: Manuel Rossetti)
13. Naga Sai Achyuth Kundeti, M.S. (project) 2017 (Chair: Greg Parnell)
14. Brianna Ovuoba, Civil Engineering, Ph.D. 2017 (Chair: Gary Prinz)
15. Shanqi Sun, Electrical Engineering, M.S. 2017 (Chair: Jingxian Wu)
16. Jingming Liu, Ph.D. Advisory Committee (Chair: John White)
17. Tom Talafuse, Ph.D. 2016 (Chair: Ed Pohl)
18. Shu Yang, Civil Engineering, Ph.D. 2016 (Chair: Andrew Braham)
19. Ridvan Gedik, Ph.D. 2014 (Chair: Chase Rainwater)
20. Alireza Zadeh, Ph.D. Advisory Committee (Chair: Manuel Rossetti)
21. Juan David Bolivar Vargas, Universidad de los Andes, Columbia, M.S. 2014 (Chair: Raha Akhavan-Tabatabaei)
22. Qing Guo, Electrical Engineering, M.S. 2013 (Chair: Jingxian Wu)
23. Sergio Vargas, Universidad de los Andes, Columbia, B.S. 2013 (Chair: Raha Akhavan-Tabatabaei)

REU Students Hosted
Andre Nakamura, Mercer University, Summer 2015
Daphne Schinazi, Pontifícia Universidade Católica do Rio de Janeiro, Summer 2016
Haoran Zheng, South China University of Technology, Summer 2018

PROFESSIONAL SERVICES
External Service Activities
Area Editor, *Health Systems*, 2015 - present
Special Issue Guest Co-Editor, *IISE Transactions on Healthcare Systems Engineering*, 2017-2018

Institute of Industrial and Systems Engineering (IISE) Annual Conference Health Systems Track Co-Chair, 2019-2020

INFORMS Public Sector Operations Research (PSOR)
President-Elect, 2019
Senior Vice President of Programs, 2018
Junior Vice President of Programs, 2017

Committee Member, INFORMS Ad-hoc Committee on Diversity, 2016

INFORMS Junior Faculty Interest Group (JFIG) Forum
President, 2015-2016
Vice President/President Elect, 2014-2015
Treasurer, 2012-2014
Organizer, JFIG Paper Competition 2013, 2014

Committee Member, INFORMS Chapters/Fora Committee, 2014-2015

Reviewer for
Journals
Manufacturing & Service Operations Management, Omega, Annals of Operations Research, Health Care Management Science, Health Systems, Medical Care, Medical Decision Making, IIE (IISE) Transactions on Healthcare Systems Engineering, Transactions on Reliability, Information Systems and e-Business Management (Special Issue on Healthcare Informatics), The Engineering Economist

Books/Book Chapters
Wiley Encyclopedia of Operations Research and Management Science, WILEY Book on Healthcare Data Analytics

Conferences
Industrial and Systems Engineering Research Conference (ISERC) Proceedings, Annual (and Biennial European) Meetings of the Society for Medical Decision Making, 2015 IEEE International Conference on Communications,

Competitions
2012 Society of Health Systems Student Paper Competition, 2010 IIE Southern Regional Undergraduate Technical Student Paper Competition

Session Chair for INFORMS Annual Conferences and ISERC Annual Conferences

Internal Service Activities
Department of Industrial Engineering
Faculty Advisor, INFORMS Student Chapter, 2013-Present
Undergraduate Studies Committee Member, 2015-2016
Global Studies Committee Member, 2015-Present
Junior Faculty Search Committee, 2015-2016
IE Research Ad Hoc Committee, 2013-2015
Technology Committee Member, 2013-2015
Graduate Studies Committee Member, 2011-2015
Senior Faculty Search Committee Member, 2013-2014
Junior Faculty Search Committee Member, 2014-2015

University of Arkansas
Committee Member, Emergency Preparedness Council, 2015-2016
Reviewer for Honors College Study Abroad Grant, 2012, 2014
Reviewer for Honors College Research Grant, 2017

PROFESSIONAL MEMBERSHIPS

Member of Institute for Operations Research and Management Science (INFORMS)
    Health Applications Society, Public Programs, Service and Needs (PPSN) Section, Quality, Statistics and Reliability (QSR) Section, Minority Issues Forum (MIF), Junior Faculty Interest Group (JFIG) Forum, Women in OR Forum
Member of Institute of Industrial and Systems Engineering (IISE)
Society for Medical Decision Making (SMDM)

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EDUCATION

Academic:	Ph.D., Systems and Industrial Engineering, University of Arizona, 1995.
	MS, Reliability Engineering, University of Arizona, 1993.
	MS, Systems Engineering, Air Force Institute of Technology, 1988.
	MS, Engineering Management, University of Dayton, 1988.
	BS, Electrical Engineering, Boston University, 1984.
Military:	Air Command and Staff College, 1998.
	Academic Instructors School, 1995.
	Squadron Officers School, 1990.

PROFESSIONAL EXPERIENCE

April 2014 – Present: *Head, Department of Industrial Engineering, 21st Century Professorship in Engineering*, University of Arkansas, Fayetteville, Arkansas. Lead and manage a department of 17 tenure/tenure track faculty, 4 clinical/research faculty, 60+ adjunct faculty, and 20 staff. Department serves 250 undergraduate IE students, 20 MSIE student, 35 Ph.D. students, 40+ Engineering Management students and 700+ Operations Management MS students. Department research expenditures exceed $2.5 million and the department is home to three active research centers (CELDi, J.B. Hunt Innovation, MarTrec). Led department through successful ABET review in fall of 2014 and hired two faculty in the spring of 2015: one senior endowed professorship and one junior faculty member. Hired two endowed chairs in spring of 2016 and one junior faculty position in the spring of 2017, hired two senior faculty, one in an endowed position in 2019. Successfully led department through strategic planning process in 2017, successfully completed 5 –year review and reappointed for 5 years..

October 2013 – December 2017: *Director*, *Center for Innovation in Healthcare Logistics, (CIHL);* August 2010 – September 2013: *Deputy Director*, *Center for Innovation in Healthcare Logistics, (CIHL)*, Department of Industrial Engineering, University of Arkansas, Fayetteville, Arkansas. Assisted in the development of strategy and research direction for this nationally recognized center on healthcare logistics. Assisted in the development and analysis of three national surveys on the state of healthcare logistics and data standards for the healthcare supply chain. Led a study on comparing the retail and healthcare supply chains. Work has been cited in several national press releases by the Association for Healthcare Resource & Materials Management (AHRMM) of the American Hospital Association. AHRMM was a sustaining sponsor of work in the center and has contributed over $200K in support of this work.

August 2010- present*: Director, Distance Education*, College of Engineering, University of Arkansas, Fayetteville, Arkansas. Manage the Master of Science in Engineering Distance education program for the college. The Master of Science in Engineering is a general, interdisciplinary, engineering master's program delivered through distance education. Work with the faculty to add depth and breadth in our technical course offerings. As the breadth and depth of course offerings increase, the program has grown from 36 course enrollments in FY 2010 to 340 course enrollments in FY2013 to over 600 in 2017 and close to 700 expected in 2019.

August 2007 – August 2014: *Director, Operations Management Program*, Department of Industrial Engineering, University of Arkansas, Fayetteville, Arkansas. Directed the MS in Operations Management program, it is the largest UA graduate program, 500+ students, $2.9M in annual revenue, located at 6 sites. Managed a staff of 12, responsible for managing 60+ adjunct faculty members. Taught graduate courses in the areas of quality management, supply chain management, cost estimation, global competition, maintenance management and project management. Despite increases in admission and graduation requirements, course enrollments increased from 2071 in FY2006 to 3369 in FY 2013. The OMGT program continued to grow with 15 staff more than 30 courses over 3375 enrollments and more than 800 unique students taking courses in 2015.

PROFESSIONAL EXPERIENCE (cont.)

August 2013 – Present: *Professor of Industrial Engineering,* January 2004 – July 2013:*Associate Professor of Industrial Engineering,* Department of Industrial Engineering, University of Arkansas, Fayetteville, Arkansas. Taught undergraduate courses in the areas of statistics, systems engineering, project management, quality, risk analysis and global engineering and innovation. Taught graduate courses in optimization, quality, reliability, and risk analysis. Currently serve as a PI on 2 research efforts totaling more than $300,000. Currently advising 3 Ph.D. students, and 3 Undergraduate Honors student. I advised to completion 7 Ph.D. dissertations, 19 M.S. theses and 15 Undergraduate Honors Theses. Currently serve on 2 Ph.D. committees in the department, 1 Ph.D. committees outside the department, as well as several M.S. committees. I served on 52 Ph.D. dissertation committees, 71 M.S. thesis committees and 5 Undergraduate Honors Thesis committees.

June 2003 - January 2004: *Associate Professor of Systems Engineering & Deputy Director of the Operations Research Center(ORCEN),* Department of Systems Engineering, United States Military Academy, West Point, NY. Served as the Deputy Director for the Operations Research Center, secured, coordinated, directed and performed research on a variety of Army & DoD sponsored research projects. Center funding exceeded $1 Million per academic year. Mentored 3 junior faculty members working full time in the center on sponsored research projects. Deployed to Afghanistan in support of Operation Enduring Freedom. Assisted in the development of an operational assessment tool for the commander of the Combined Joint Task Force (CJTF-180).

July 2001 - May 2003: *Assistant Professor of Systems Engineering*, Department of Systems Engineering, United States Military Academy, West Point, New York. Served as Course Director for SE382 Decision Support Systems and SE 384 Stochastic Processes. Taught SE 350 the introductory systems engineering course. Supervised student research for teams of systems engineering majors in a yearlong capstone design course. Mentored junior faculty research efforts. Consulted for the Army, Air Force, and other DoD agencies in the areas of systems engineering, reliability, and optimization.

August 1998 - June 2001: *Operations Research Analyst*, Office of The Secretary of Defense, Program Analysis and Evaluation, Operations Analysis and Procurement Planning Directorate, The Pentagon, Washington DC. Led teams of senior scientists, engineers, and economists in evaluating multi-billion dollar defense acquisition programs and developed congressionally mandated independent cost estimates. Assessed the risk and validity of technical, schedule, and programmatic assumptions underlying program cost estimates. Led analysis on the National Missile Defense system, Advanced EHF Satellite system, and the Advanced Narrow Band Satellite system. Performed logistics studies on aviation readiness that led to a $500 Million dollar increase in spare parts funding across services.

June 1995 - July 1998: *Assistant Professor of Aerospace and Systems Engineering*, Department of Aeronautics & Astronautics, Air Force Institute of Technology, Wright-Patterson AFB, OH. Taught four courses a year in the areas of systems engineering, reliability, decision analysis and operations research. Developed graduate courses in probabilistic design, reliability, and optimization. Supervised masters and doctoral level research and consulted for Air Force and DoD agencies.

September 1994 - May 1995: *Instructor of Aerospace and Systems Engineering*, Department of Aeronautics & Astronautics, Air Force Institute of Technology, Wright-Patterson AFB, OH. Taught several courses in the areas of systems engineering, reliability and operations research.

August 1991 - August 1994: *Ph.D. Student,* Department of Systems and Industrial Engineering, University of Arizona. Major: Stochastic Processes, Minor: Mechanical Engineering- Probabilistic Design. Dissertation Title: A Stochastic Modeling Framework for Environmental Stress Screening of Multi-Component Systems. Advisor: Dr. Duane Dietrich, GPA: 3.94/4.0

March 1989 - July 1991: *Munitions Logistics Analysis Manager*, Directorate of Logistics, Headquarters Air Force Operational Test and Evaluation, Kirtland AFB, NM. Planned, evaluated and reported on logistics aspects of major munitions systems such as the AGM-130, Short Range Attack Missile, and Advanced Cruise Missile during Operational Test and Evaluation. Assessed the impacts of logistics factors such as reliability, availability, and maintainability on the evolving weapon system's ability to meet requirements.

January 1989 - Mar 1989: *Professional Specialized Education Student; Reliability and Maintainability,* Air Force Institute of Technology, Wright-Patterson AFB, OH. Selected to participate in program as part of the Air Force R&M 2000 Program. Conducted an independent research effort on software reliability. GPA: 4.0/4.0

PROFESSIONAL EXPERIENCE (cont.)

June 1987 - December 1988: *MS Student, Systems Engineering*, Air Force Institute of Technology, Wright-Patterson AFB, OH. Academic specialties included Stochastic Estimation and Control, Operations Research, Decision Analysis, and Reliability. Thesis Title: Design and Analysis of an Individual Lift Vehicle. Advisor: Dr. David Robinson. GPA: 3.66/4.0

September 1984 - May 1987: *Training Systems Engineer*, B-2 Systems Program Office, Aeronautical Systems Division, Air Force Systems Command, Wright-Patterson AFB, OH. Functional Lead Engineer for the B-2 Training System. Directed the development and integration of hardware and software into an integrated training system that provides training for aircrew and maintenance personnel. Directed the application of software development standards across the entire B-2 program.

PUBLICATIONS & PRESENTATIONS (* indicates co-author is a graduate student)
Refereed Journals (Submitted)

1. Wong*, A., Sullivan, K., Pohl, E., "50 Years of reliability Growth Modeling: A Survey of the Literature," Submitted to the *IEEE Transactions on Reliability Engineering*. Undergoing revision

2. Hu,J., Jiang, Z., Liao, H., Pohl, E., "Preventive Maintenance of a Two-Machine Flow Shop Under Time-Varying Operating Conditions," Submitted to the *European Journal of Operational Research.*

3. Specking*, E., Parnell, G., Pohl, E., Buchanan, R., "Engineering Resilient Systems: Achieving Stakeholder Value Through Design Principles and Systems Operations," Submitted to *Journal of Engineering Management*, in revision

4. Ghaharikermani*, A., Parsa*, Payam, Pohl, E., "Designing a Transportation Network for a UAV Delivery Service," Submitted to *OR Spectrum*, in revision.

5. Parsa*, P., Rossetti, M., Pohl, E., "A Collaborative Planning Forecasting and Replenishment (CPFR) Maturity Model," Submitted to the *Journal of Engineering Management*.

6. Enayaty-Ahangar*, F., Rainwater,C., Pohl, E., "Risk Assessment of Salmonella Contamination in Asian Poultry Production and Delivery," Submitted to the *Journal of Risk Analysis*, in revision.

7. Ruiz, C.*, Pohl, E., Liao, H., "Bayesian Degradation Modeling for Spare Parts Inventory Management," Submitted to the *IMA Journal of Management Mathematics.*

Refereed Journals (Accepted and in-print)

1. Specking*, E., Cilli, M., Parnell, G., Pohl, E., Small*, C., Cottom*, B., and Wade*, Z., "Assessing Resilience via Multiple Measures," *Journal of Risk Analysis*, Vol. 39, No. 9, pp. 1899-1911, 2019.

2. Ma, Z., Ruiz, C., Wang, S., Zhang, C., Liao H., and Pohl, E. A., "Reliability Estimation from Two Types of Accelerated Testing Data Considering Measurement Error", Accepted for publication in *Reliability Engineering and System Safety*.

3. Cottam*, B., Specking*, E., Small*, C., Pohl, E., Parnell, G., Buchanan, R., "Defining Resilience for Engineered Systems," *Engineering Management Research*, Vol. 8, No. 2, pp. 11-29, 2019.

4. Small*, C., Parnell, G., Pohl, E., Goerger, S., Cilli, M., Specking*, E., "Demonstrating Set based Design Techniques: A UAV Case Study," Accepted for publication in the *Journal of Defense Modeling and Simulation*.

5. Wade*,Z., Parnell, G., Goerger, S., Pohl, E., Specking*, E., "Convergent Set-Based Design for Complex Resilient Systems," Accepted for publication in *Environment, Systems, and Decisions*, 2019

6. Torres*, C., Heydari*, M., Sullivan, K., Liao, H., Pohl, E., "Data Analysis and Resource Allocation in Bayesian Selective Accelerated Reliability Growth," Accepted for publication in *IISE Transactions on Quality and Reliability*.

7. Wade*, Z., Goerger, S., Parnell, G., Pohl, E., Specking*, E., "Incorporating Resilience in an Integrated Analysis of Alternatives," *Journal of Military Operations Research*, Vol. 24, No. 2, pp 5-16, 2019.

Refereed Journals (cont)

8. De Icaza*, R., Parnell, G., Pohl, E., "Gulf Coast Port Selection Using Multiple Objective Decision Analysis." Accepted for publication in *Journal of Decision Analysis*.

9. Torres*, C., Pohl, E., Liao, H., Sullivan, K., "A Bayesian Framework for Accelerated Reliability Growth Testing with Multiple Uncertainties," *Journal of Quality and Reliability Engineering International* Volume 35, Issue 3, pp 837-853, 2019.

10. Liu,X., Yang,T., Pei, J., Liao, H., Pohl, E., "Replacement and Inventory Control for a Multi-Customer Product Service System with Decreasing Replacement Costs," *European Journal of Operational Research*, Vol. 273, Issue 2, pp 561-574, March 2019.

11. Hill, R. and Pohl, E. "A Structural Taxonomy for Metaheuristic Optimization Search Methods" *International Journal of Metaheuristics*, Vol. 7, No.2, pp. 127-151, 2019.

12. Specking*, E., Parnell, G., Pohl, E., Buchanan, R. "Early Design Space Exploration with Model-Based Systems Engineering and Set Based Design," *Systems*, Vol. 6, No. 4, pp 45-64, December 2018.

13. Talafuse*, T., Pohl, E., "Small Sample Discrete Reliability Growth Modeling Using a Grey System Model," *Grey Systems: Theory and Application*, Vol. 8, Issue 3, pp. 246-271, 2018.

14. Specking*, E., Whitcomb, C., Parnell, G., Goerger, S., Pohl, E., Kundeti*, N., "Literature Review:" Exploring the Role of Set-Based Design in Trade-off Analytics," *Naval Engineers Journal*, Volume 130, Issue 2, pp. 85-96, 2018.

15. Madadi*,M., Heydari*,M., Zhang,S., Pohl, E., Rainwater,C., Williams, D.., "Analyzing Overdiagnosis Risk in Cancer Screening: A Case of Screening Mammography for Breast Cancer," *IISE Transactions on Healthcare Systems Engineering,* Vol. 8, Issue 1, pp. 2-20, 2018.

16. Parsa*, P., Rossetti, M., Zhang, S., Pohl, E., "Quantifying the Benefits of a Continuous Replenishment Program for Partner Selection," *International Journal of Production Economics*, Vol 187, 2017.

17. Talafuse*, T., Pohl, E., "Small Sample Reliability Growth Modeling Using a Grey Systems Model," *Quality Engineering*, Vol. 29, Issue 3, 455-467, 2017.

18. Nachtmann, H., Gonzalez*, M., Pohl, E., "Time Driven Activity-Based Costing for Healthcare Provider Supply Chains," *The Engineering Economist*, Vol. 62, No. 2, 161-179, 2017.

19. Alaswad*, S., Cassady, C., Pohl, E., Li*, X., "A Model of System Limiting Availability Under Imperfect Maintenance," *Journal of Quality in Maintenance Engineering*, Vol.23, Issue 4, pp. 415-436, 2017

20. Gedik*, R., Rainwater, C., Nachtmann, H., Pohl, E., "Analysis of a Parallel Machine Scheduling Problem with Sequence Dependent Setup Times and Time Windows," *European Journal of Operational Research*, Vol. 251, Issue 2, 640-650, 2016.

21. Talafuse*, T. and Pohl, E., "A Bat Algorithm (BA) for the Redundancy Allocation Problem (RAP), *Engineering Optimization,* Volume 48, Issue 5, 900-910, 2016.

22. Medal*, H., Pohl, E., Rossetti, M., "Allocating Protection Resources to facilities when the Effect of Protection is Uncertain," *IIE Transactions,* Volume 48, Issue 3, 220-234 2016.

23. Hilliard*, H., Parnell, G., and Pohl, E., "Evaluating the Effectiveness of the Global Nuclear Detection Architecture Using Multiobjective Decision Analysis," *Journal of Systems Engineering*, Vol. 18, No.5, 441- 452, 2015.

24. Tong*, J., Nachtmann, H., and Pohl, E., "Value-Focused Assessment of Cargo Value Decreasing Rates," *Engineering Management Journal*, Vol 27, Issue 2, 73-85, 2015.

Refereed Journals (cont.)

25. Gedik*, R., Medal*, H., Rainwater, C., Pohl, E., Mason, S., "Vulnerability Assessment and Re-Routing of Freight Trains Under Disruptions: A Coal Case Study," Transportation *Research Part E: Logistics and Transportation Review*, Vol. 71, 45-57, November 2014.

26. Medal*, H., Pohl, E., and Rossetti, M., "A Multi-objective Integrated Facility Location and Hardening Model: Analyzing the Pre- and Post-Disruption Tradeoff," *European Journal of Operational Research,* Vol. 237 Issue 1, 257-270, August 2014.

27. Medal*, H., Rainwater, C., Pohl, E, and Rossetti, M., "A Bi-Objective Analysis of the R-All-Neighbor P-Center Problem," *Computers & Industrial Engineering*, Vol. 72, 114-128, June 2014.

28. Nguyen, H., Rainwater, C., Mason, S., Pohl, E., "Quantity Discount with Freight Consolidation," *Transportation Research Part E*, Vol. 66, June 2014.

29. Nachtmann, H., Mitchell, K., Rainwater, C., Gedik*, R., Pohl, E., "Optimal Dredge Fleet Scheduling within Environmental Work Windows," *Transportation Research Record, Journal of the Transportation Research Board*, No. 2426, Marine Environment, Marine Safety, and Human Factors, 11-19, 2014.

30. Ramirez-Marquez, J., Hernandez, I., Rainwater, C., Pohl, E., and Medal*, H., "Robust Facility Location: Hedging Against Failure," *Reliability Engineering and System Safety*, Vol. 123, 73-80, March 2014.

31. Nachtmann, H. and Pohl, E., "Emergency Medical Response Services via Inland Waterways," *Journal of Risk Management,* Vol. 15, No. 4, 225-249, r 2013.

32. Nachtmann, H., Pohl, E., "Transportation Readiness Assessment and Valuation for Emergency Logistics," *International Journal of Emergency Management,* Vol. 9, No.1, 2013.

33. Schneider*, K., Rainwater, C., Pohl, E., Hernandez, I., and Ramirez-Marquez, J.,, "Social Network Analysis via Multi-State Reliability and Conditional Influence Models," *Reliability Engineering and System Safety*, Vol. 109, 99-109, 2013.

34. Miman*, M. and Pohl, E. "Multi-Objective Optimization of a Contingency Logistic Network through Physical Programming," *International Journal of Collaborative Enterprises: Special Issue on Transportation Modeling and Evacuation Planning,* Vol. 3, No. 1, 2013.

35. Kamali*, B., Mason, S., and Pohl, E., "An Analysis of Special Needs Student Busing," *Journal of Public Transportation*, Vol. 16, No. 1, 2013.

36. Varghese, V., Rossetti, M., Pohl, E., Apras, S., and Marek, D., "Applying Actual Usage Inventory Management Best Practices in a Healthcare Supply Chain," *International Journal of Supply Chain Management*, Vol. 1, No. 2, 1-10, 2012.

37. Guzman*, M., Pohl, E., Schneider, K.*, and Rainwater, C., "Application of Reliability Methods to Social Networks," *Journal of Military Operations Research*, Vol. 17, No. 4, 51-58, 2012.

38. Ertem*, M., Buyurgan, N., and Pohl, E., "Using Announcement Options in the Bid Construction Phase for Disaster Relief Procurement," *Journal of Socio-Economic Planning Sciences:* Special Issue on Disaster Planning and Logistics, Vol. 46, 306-314, 2012.

39. Nachtmann, H., Pohl, E., and Farrokhvar*, L., "Decision Support for Inland Waterways Emergency Response," *Engineering Management Journal:* Special Issue on Transportation Management, Vol. 24, 3-14, 2012.

40. Hall, K., Xiao*, D., Pohl, E., and Wang, K., "Reliability-based Mechanistic Empirical Pavement Design using Statistical Methods," *Transportation Research Record (TRR) Journal of Transportation Research Board,* No. 2305 Pavement Management Vol. 2, 121-130., 2012.

41. Zhang*, F., Chimka, J., and Pohl, E., "Global vs. Sequential Learning Styles Related to Attitudes About On-Line Learning," *Computers in Education Journal*, Vol. 3, No.2, 83-94, June 2012.

Refereed Journals (cont.)

42. Xiang*, Y., Cassady, C., and Pohl, E., "Optimal Maintenance Policies for Systems Subject to a Markovian Operating Environment," *Computers & Industrial Engineering*, Vol. 62, No. 1, 190-197, February 2012.

43. Smith*, B.K., Nachtmann, H., and Pohl, E., "Improving Healthcare Supply Chain Processes via Data Standards," *The Engineering Management Journal*, Vol. 24, No. 1, March 2012.

44. Smith*, B.K., Nachtmann, H., and Pohl, E., "Quality Measurement in the Healthcare Supply Chain," *The Quality Management Journal*, Vol. 18, No. 4, 50-60, 2011.

45. Nachtmann, H. and Pohl, E., Catastrophes and Complex Systems: Transportation, "The Inland Waterway Transportation Systems' Role in Response and Recovery," *Journal of Homeland Security*, Available On-line, June 2011.

46. Medal*, H., Sharp*, S.J., Pohl, E., Rainwater, C. and Mason, S.J., "Models for Reducing the Risk of Critical Networked Infrastructures," *International Journal of Risk Assessment and Management,* Vol. 15, Nos. 2/3, 99-127, 2011.

47. Jampani*, J., Pohl, E., Mason, S., and Monch, L., "Integrated Heuristics for Scheduling Multiple Jobs in a Complex Job Shop," *International Journal of Metaheuristics,* Vol. 1, No. 2, 156-180, 2010.

48. Gade*, D. and Pohl, E. "Sample Average Approximation Applied to the Capacitated Facilities Location Problem with Unreliable Facilities," *Journal of Risk and Reliability*, Vol. 223, No. 4, 259-268, 2009.

49. Miman*, M. and Pohl, E. "Uncertainty Assessment Techniques for System Availability," *International Journal of Reliability, Quality, and Safety Engineering*, Vol. 16, No. 1 39-57, 2009.

50. Miman*, M. and Pohl, E., "Modeling and Analysis of Risk and Reliability for Contingency Logistics Supply Chain," *Journal of Risk and Reliability*, Vol. 222 No. 4, 463-476, 2008.

51. Yeung*, T., Cassady, R., and Pohl, E., "Multi-State Selective Maintenance Decisions," *Journal of Military Operations Research,* Vol. 12, No. 1, 19-34, 2007.

52. Salman*, S., Cassady, C.R., and Pohl, E.A., "Evaluating the Impact of Cannibalization on Fleet Performance," *Journal of Quality and Reliability Engineering International*, Vol. 23, 445-457, 2007.

53. Iyoob*, I., Cassady, C.R., and Pohl, E., "Establishing Maintenance Resource Levels Using Selective Maintenance," *Engineering Economist*, Vol. 51, No. 2, 99-114, 2006.

54. Cassady, C.R., Iyoob, I.M., Schneider*, K., and Pohl, E.A., "A Generic Model of Equipment Availability under Imperfect Maintenance," *IEEE Transactions on Reliability*, Vol. 54, No. 4, 564-571, 2005.

55. Cassady, C.R., Pohl, E.A., and Jin, S., "Managing Availability Improvement Efforts with Importance Measures and Optimization," *IMA Journal of Management Mathematics: Special Issue on Maintenance, Replacement and Reliability,* Vol. 15, 161-174, 2004.

56. Cassady, C.R., Takashi, I.G., and Pohl, E.A., "Reliability Analysis for Intermittently Used Products," *International Journal of Modeling and Simulation,* Vol. 23, No. 4, 234-239, 2003.

57. Cassady, C.R., Murdock, W.P., and Pohl, E.A., "Selective Maintenance for Support Equipment Involving Multiple Maintenance Actions," *European Journal of Operational Research,* Vol. 129, No. 2, 252-258, 2001**.**

58. Cassady, C.R., Pohl, E.A., and Murdock, W.P., "Selective Maintenance Modeling for Industrial Systems," *Journal of Quality in Maintenance Engineering,* Vol. 7, No. 2, 104-117, 2001.

59. Vanden Bosh*, P.M., Dietz, D.C., and Pohl, E.A., "Moment Matching Using a Family of Phase-Type Distributions," *Communications in Statistics: Stochastic Models*, Vol. 16, No. 3-4, 391-398, 2000.

Refereed Journals (cont.)

60. Cassady, C.R., Bowden, R.O., Liew, L., and Pohl, E.A., "Combining Preventive Maintenance and Statistical Process Control: A Preliminary Investigation," *IIE Transactions*, Vol. 32, No. 6, 471-478, 2000.

61. Kramer, S.C., Neher, RE.*, Pohl, E.A., and Smith, E.P., "Surveillance Plan for Monitoring the Shelf Life of Systems with Degradation," *Quality Engineering*, Vol. 11, No. 2, 309-316, 1998-1999.

62. Vanden Bosch*, P.M., Dietz, D.C., and Pohl, E.A., "Choosing the Best Approach to Matrix Exponentiation," *Computers & Operations Research*, Vol. 26, No. 9, 871-882, 1999.

63. Pohl, E.A. and Dietrich, D.L. "Optimal Stress Screening Strategies for Multi-Component Systems Under Warranty: The Case of Phase-Type Lifetimes," *Annals of Operations Research Special Volume on Reliability and Maintainability in Production Control*, Vol. 91, No. 0, 137-161, 1999.

64. Reineke*, D.M., Pohl, E.A., and Murdock, W.P., "Maintenance Policy Cost Analysis for a Series System with Highly Censored Data," *IEEE Transactions on Reliability,* Vol. 48, No. 4, 413-419, 1999.

65. Durkee*, D.P, Pohl, E.A., and Mykytka, E.F., "Sensitivity Analysis of Availability Estimates to Input Data Characterization Using Design of Experiments," *Quality and Reliability Engineering International,* Vol. 14, No. 5, 311-317, 1998.

66. Ferrence*, A.A., Shelley, M.L., and Pohl, E.A., "A Methodology for Habitat Suitability Mapping through Integration of Multicriteria Evaluation Techniques with a Geographical Information System: A Pilot Study," *Journal of Military Operations Research*, Vol. 3, No. 5, 63-76, 1997.

67. Pohl, E.A. and Dietrich, D.L. "Environmental Stress Screening for Complex Systems: A 3-Level Mixed Distribution Model," *Microelectronics and Reliability,* Vol. 35, No. 4, 637-656, March 1995.

Book Chapters

1. Talafuse, T., Pohl, E. "Grey Systems in Reliability," Wiley *StatsRef-Statistics Reference Online*, 15 May 2018. https://doi.org/10.1002/9781118445112.stat08061.

2. Small, C., Parnell, G., Pohl, E., Goerger, S., Cottam, C., Specking, E., Wade, Z., "Engineering Resilience for Complex Systems." In: Madni A., Boehm B., Ghanem R., Erwin D., Wheaton M. (eds) *Disciplinary Convergence in Systems Engineering Research*. Springer, pp. 3-15, 2018.

3. Pohl, E., Goerger, S., and K. Michealson, "Chapter 4, Analyzing Resources," *Trade-off Analytics: Creating and Exploring the System Tradespace*, Editor, Greg Parnell, Wiley Series in Systems Engineering and Management, John Wiley and Sons, Hoboken N.J., pp. 91-154, 2017.

4. Rossetti, M., Buyurgan, N., and Pohl, E., "Chapter 10, Medical Supply Chain Logistics," in *The Handbook of Healthcare System Scheduling: Delivering Care When and Where it is Needed*, R. Hall, Editor, International Series in Operations research and Management Science Vol. 168, Springer Publishers, New York, NY, 2012.

5. Pohl, E.A., "Chapter 8, Reliability Engineering," *Decision Making in Systems Engineering and Management*, Gregory Parnell, Patrick Driscoll, and Dale Henderson, (Eds), John Wiley & Sons, Series in Systems Engineering and Management, Hoboken, NJ, 2nd Edition, pp. 227-272, 2011.

6. Pohl, E.A. and Nachtmann, H., "Chapter 5, Life Cycle Costing," *Decision Making in Systems Engineering and Management*, Gregory Parnell, Patrick Driscoll, and Dale Henderson, (Eds), John Wiley & Sons, Series in Systems Engineering and Management, Hoboken, NJ, 2nd Edition, pp. 137-182, 2011.

7. Hill, R.R. and Pohl, E.A., "Heuristics and Their Use in Military Modeling," *Encyclopedia of Operations Research and Management Science*, James J. Cochran, (Ed), John Wiley and Sons, Hoboken, NJ, 2011.

Book Chapters (cont.)

8. Hill, R.R. and Pohl, E.A., "Chapter 9, An Overview of Meta-Heuristics and Their Use in Military Modeling," *Handbook of Military Industrial Engineering*, Marlin U. Thomas and Adeji B. Badiru, (Eds), Taylor and Francis/CRC Press, Boca Raton, FL, 2009.

9. Cassady, C.R., Pohl, E.A., and Yeung, T., "Maintainability and Supportability in Logistics," *Logistics Engineering Handbook*, Don Taylor, (Ed), CRC Press, Taylor and Francis Group, Boca Raton, FL, 2008.

10. Pohl, E.A., "Chapter 7, System Effectiveness," *Decision Making in Systems Engineering and Management*, Gregory Parnell, Patrick Driscoll, and Dale Henderson, (Eds), John Wiley & Sons, Series in Systems Engineering and Management, Hoboken, NJ, 2008.

11. Pohl, E. and Nachtmann, H., "Chapter 5, Life Cycle Costing," *Decision Making in Systems Engineering and Management*, Gregory Parnell, Patrick Driscoll, and Dale Henderson, (Eds), John Wiley & Sons, Series in Systems Engineering and Management, Hoboken, NJ, 2008.

12. English, J., Usher, J., Pohl, E., and Taylor, D., "Availability Modeling of Powered Roller Conveyers," *Progress in Material Handling Research: 2006*, Material Handling Institute, Charlotte, NC, 2006.

13. Cassady, C.R., Murdock, W.P., and Pohl, E.A., **"**A Deterministic Selective Maintenance Model for Complex Systems," *Recent Advances in Reliability and Quality Engineering*, Hong Pham, Editor, World Scientific, Singapore, 311-324, 2001.

Conference Proceedings

1. Ruiz*, C., Liao H., and Pohl, E., "Selective Maintenance of Multi-Component Systems with Multiple Failure Modes", submitted for publication in the Proceedings of the 66th Annual Reliability and Maintainability Symposium, Long Beach, CA, January, 2020.

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1. **Ruiz*, C.,** Liao H., and Pohl, E., "Accelerated Reliability Growth Under Random Effects and Explanatory Variables", ISERC, Orlando, FL, May 19-21, 2019.

2. **Pohl, E.,** Parnell, G., and Specking, E. "Trade-off Analytics in System Design," ISERC, Orlando, FL, May 19-21, 2019

3. **Specking*, E.,** Parnell, G., Pohl, E., Buchanan, R., "Evaluating a Set-Based Design Tradespace Exploration Process," 17th Annual Conference on Systems Engineering Research, Washington, DC, April 2019.

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9. **Wade*, C.,** Parnell, G., and Pohl, E., "Designing Engineering Resiliency in Complex Systems Through Set-Based Design." 2018 Industrial and Systems Engineering Conference, Orlando, FL, May 19-22, 2018

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90. **Shbool*, M.,** Ulesich*, M., Pohl, E., Rossetti, M., Nachtmann, H., Varghese, V., "Comparing Education and Training Requirements for Retail and Healthcare Supply Chain Professionals," *2012 Industrial Engineering Research Conference*, Orlando, FL, May 2012.

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107. **Kilgore*, M.,** Nachtmann, H., and Pohl, E., "How Much is Supply Chain Costing Us?," *2011 Industrial Engineering Research Conference*, Reno, NV, May 2011.

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132. **Pohl, E.,** Guzman*, M., "A Probabilistic Programming Approach in the Analysis of Social Networks," *Institute for Operations Research and Management Science: INFORMS 2009,* San Diego, CA, October 2009.

133. **Kamali*, B**., Mason, S., Pohl, E., "Network Design Analysis for Special Needs Student Services," *Institute for Operations Research and Management Science: INFORMS 2009,* San Diego, CA, October 2009.

134. **Smith*, B.,** Nachtmann, H., Pohl, E., "Opportunities for Cost and Quality Improvements in Healthcare Logistics Revealed," *Institute for Operations Research and Management Science: INFORMS 2009,* San Diego, CA, October 2009.

135. **Townsley*, J.R.,** Smith, B.K., and Pohl, E.A., "Managing Financial Risk in a Clinical Setting Using System Dynamics," 30th *American Society of Engineering Management Conference*, Springfield, MO, October 2009.

136. **Smith*, B.K.,** Nachtmann, H., and Pohl, E.A., "The Need for Standardization in the Healthcare Supply Chain," (Best Paper Nominee) 30th *American Society of Engineering Management Conference*, Springfield, MO, October 2009.

137. Balya*, R. and **Pohl, E.A.,** "Resource Allocation in a Project Management Setting Based on Schedule Reliability," 30th *American Society of Engineering Management Conference*, Springfield, MO, October 2009.

Presentations (cont.)

138. **McCallion**, E.A.,** Taylor**, N.D., Mason, S., and Pohl, E.A., "Analysis of Transportation Network Design Strategies for Forced Transfer Bussing," *Industrial Engineering Research Conference*, Miami, FL, May 31 – June 3, 2009.

139. **Medal*, H.,** Rossetti, M., Varghese, V., and Pohl, E., "A Software Tool for Intermittent Demand Analysis," *Industrial Engineering Research Conference*, Miami, FL, May 31 – June 3, 2009.

140. **Smith*, B.K.,** Nachtmann, H., Pohl, E., and Townsley*, J.R., "Management Initiatives in Healthcare Logistics," *Industrial Engineering Research Conference (invited paper)*, Miami, FL, May 31- June 3, 2009.

141. **Mason, S**., Nachtmann, H., Pohl, E., "Integrated Distribution Planning and Forecasting for Medical Logistics," *Institute for Operations Research and Management Science: INFORMS 2008,* Washington, DC, October 2008.

142. **Pohl, E.,** Guzman*, M., "Analysis of Clandestine Networks Using Reliability Properties in Multi-State Systems," *Institute for Operations Research and Management Science: INFORMS 2008,* Washington, DC, October 2008.

143. **Pohl, E. and Driscoll, P**., "Tutorial: Decision Making in Systems Engineering", *Industrial Engineering Research Conference 2008,* Vancouver, BC, May 2008.

144. **Miman*, M**. and Pohl, E. "Exponential Weighted Moving Averages for Nonconformities with Short Runs", *Industrial Engineering Research Conference 2008,* Vancouver, BC, May 2008.

145. **Garman*, S**. and Pohl, E. "Team Assignment Strategies in Youth Sports: An Initial Investigation," *Institute for Operations Research and Management Science: INFORMS 2007,* Seattle, WA, November 2007.

146. **Medal*, H**. and Pohl, E., "Multi-Objective Simulation Optimization: A Preliminary Investigation," *Institute for Operations Research and Management Science: INFORMS 2007*, Seattle, WA, November 2007.

147. **Pohl, E.** and Gade*, D. "Reliable Supply Chains Considering Facility failures: A Stochastic Programming Approach," *Institute for Operations Research and Management Science: INFORMS* International, Puerto Rico, June 2007.

148. **Pohl, E. and Dietrich, D**. "Environmental Stress Screening," Tutorial presentation, *Applied Reliability Symposium*, San Diego, CA, June 2007.

149. **Miman*, M.** and Pohl, E., "Contingency Logistics Supply Chain Modeling and Reliability Assessment," *Society of Risk An*alysis, Baltimore, MD, December 2006.

150. **Pohl, E**. and Swaminathan*, R., "Simulation-Optimization of Control Chart and Preventive Maintenance Policies," *Institute for Operations Research and Management Science: INFORMS 2006*, Pittsburgh, PA, November 2006.

151. **Gade*, D**. and Pohl, E., "Reliable Supply Chain Design Considering Failures," *Institute for Operations Research and Management Science: INFORMS 2006*, Pittsburgh, PA, November 2006.

152. **Gade*, D.** and Pohl, E., "Reliable Supply Chain Design Considering Failures," *INFORMS Military Application Society Conference on Homeland Security*, Mystic, CT, July 2006.

153. **Parnell, G.** and Pohl, E.A., "Multi-Objective Decision Analysis Techniques for Systems Engineering," *16th Annual International Council on Systems Engineering Symposium*, Orlando, FL, July 2006.

154. **Pohl, E.A.** and Cassady, C.R., "Repairable Systems Model," *The Applied Reliability Symposium*, Orlando, FL, June 2006.

155. **Pohl, E.A.,** "Overview of U of A Research Efforts in Military Logistics," AFOSR, AFRL/HEAL, USTRANSCOM, Air Mobility Command, St. Louis, MO, March 2006.

Presentations (cont.)

156. **Miman*, M.** and Pohl, E.A., "Uncertainty Assessment for Availability: Importance Measures," *The International Reliability and Maintainability Symposium (RAMS)*, Newport Beach, CA, January 2006.

157. **Pohl, E.A.**, Driscoll, P.J., and Nachlas, J., "Information Uncertainty in a Sense and Respond Logistics Architecture," Presented at the *IFORS Tri- Annual Conference*, Honolulu, HI, July 2005.

158. **Pohl, E.A.**, "Risk Analysis for Rural Transportation," MBTC Professional and Academic Advisory Board, Fayetteville, AR, October 2005.

159. **Miman*, M**. and Pohl, E.A., "Resource Allocation for Improving System Availability Estimates," *Institute for Operations Research and Management Science: INFORMS 2005*, San Francisco, CA, November 2005.

160. **Yeung*, T.,** Cassady, C.R., Pohl, E., "Allocating and Deploying Maintenance Resources for a Set of Multi-State Systems," *Institute for Operations Research and Management Science: INFORMS 2005*, San Francisco, CA, November 2005.

161. **Maillart, L.M., and E.A. Pohl** "Introduction to Markov Chain Modeling and Analysis", *The International Reliability and Maintainability Symposium (RAMS),* Alexandria, VA, January 2005.

162. **Pohl, E.A.** and Driscoll, P.J., "The Impact of Uncertainty in Reliability System Design," *Institute for Operations Research and Management Science: INFORMS 2004*, Denver, CO, October 2004.

163. **Driscoll, P.J.,** Pohl, E.A., and Tortorella, M., "Information Reliability and Uncertainty in NCO Systems," *Institute for Operations Research and Management Science: INFORMS 2004*, Denver, CO, October 2004.

164. McGinnis, M., **Pohl, E.**, Parnel, G, Kwinn, M., McFadden, W., and McCarthy, D., "Meeting the Needs of the Customer: Systems Engineering at the United States Military Academy," *Presented at the International Conference on Systems Engineering*, Las Vegas, NV, September 2004.

165. **Cassady, C.R.,** Iyoob*, I., Pohl, E. A., and Schneider*, K., "A Generic Model of Equipment Availability Under Imperfect Maintenance," *Presented at the Fourth International Mathematical Methods in Reliability Conference,* Santa Fe, NM, June 2004.

166. **Pohl, E.,** Cassady, C.R., and Jin, S., "Managing Availability Improvement Efforts with Importance Measures and Optimization," *Fourth International Mathematical Methods in Reliability Conference,* Santa Fe, NM, June 2004.

167. Gorak, M., Kwinn, M., **Pohl, E.**, "Lead-the-Fleet: Transitioning Army Aviation maintenance program from a flight time based system to an operational usage based system," *Military Operations Research Society Symposium 72nd MORSS*, Monterey, CA, June 2004.

168. Kwinn, M. J., Brence, J., Morel, T., **Pohl, E.**, and Deckro, R., "Assessment in Afghanistan using Value Focused Thinking," *Military Operations Research Society Symposium, 72nd MORSS*, Monterey, CA, June 2004.

169. **Kwinn, M.J.,** Pohl, E., Deckro, R., and Ragsdale, D., "Using Quantitative Means to Measure Success and Identify Directions in Effects Based Operations," *Military Operations Research Society Symposium, 72nd MORSS*, Monterey, CA, June 2004.

170. **Driscoll, P.J**., E. Pohl, and Tortorella, M., "NCW Conceptual Framework and Uncertainty," *Joint International conference of the Canadian Operations Research Society (CORS) and the Institute for Operations Research and the Management Sciences (INFORMS)*, Banff, Canada, May 2004.

171. Kaczynski, W., Foote, B., and **Pohl, E.,** "A Utility Based Optimal Metric Coordinating mission Capability and Supply Level," *2004 Industrial Engineering Research Conference*, Houston, TX, May 2004.

Presentations (cont.)

172. Gorak, M., Kwinn, M., and **Pohl, E**., "Lead the Fleet: Transitioning the Army Maintenance Program from a flight time based system to an operational usage based system," *Proceedings of the 2004 Industrial Engineering Research Conference*, Houston, TX, May 2004.

173. **Kwinn, M.,** Ragsdale, D., Brence, J., Morel, T., Pohl, E., Goldman, S., Tollefson, E., Gorak, M., and Deckro, D., "Operation Enduring Freedom Assessment System Development," *Proceedings of the US South Korean Defense Department's Operations Research Symposium*, Seoul, South Korea, April 2004.

174. **Pohl, E.A., Kwinn, M.,** and Deckro, D., "Eliciting Information from the Decision Maker: Interfacing with Afghanistan Operations Decision Makers," *Military Operations Research Workshop on Decision Aids/Support to Joint Operations Planning*, Omaha, NE, November 2003.

175. Pohl, E.A., **Kwinn, M.,** and Deckro, D., "Establishing an Operational Assessment Decision Support Tool for Ongoing Operations," *8th United States/German Operations Research Symposium*, Dresden, Germany, November 2003.

176. Kwinn, M., **Pohl, E.A.,** and Parnell, G., "Rapid Framework Development and Analysis Using Technology," *The 2003 International Engineering Management Conference,* Albany, NY, November 2003.

177. **Cassady, C.R**., Orman, S., and Pohl, E.A., "Exploring the Effects of Cannibalization on Fleet Performance," *2003 Institute for Operations Research and Management Science (INFORMS) Conference*, Atlanta, GA, October 2003.

178. Pohl, E.A., **Cassady, C.R.,** and Kwinn, M., "A Selective Maintenance Model for Serial Manufacturing Systems Involving Multiple Maintenance Actions," *The 17th International Conference on Production Research*, Blacksburg, VA, August 2003.

179. **Pohl, E.A**., Ruflin, S., Murdock, W.P., and Cassady, C.R., "Mean Residual Life Analysis of Aging Systems," *2003 Industrial Engineering Research Conference*, Portland, OR, May 2003.

180. Foote, B.L., **Pohl, E.A**., and Glen, A.G., "Estimation of Parameters for Complex Circuits having Masked Data," *2003 Industrial Engineering Research Conference*, Portland, OR, May 2003.

181. **Pohl, E.A.,** "Threats, Security, and Opportunities for IE/OR," Presented to the Industrial Engineering Faculty, Wright State University, Dayton, OH, January 2003.

182. **Pohl, E.A**., "Threats, Security, and Opportunities for IE/OR," Presented to the Industrial Engineering Faculty, Auburn University, Auburn, AL, February 2003.

183. **Pohl, E.A.,** "Threats, Security, and Opportunities for IE/OR," Presented to the Industrial Engineering Faculty, University of Arkansas, Fayetteville, AR, February 2003.

184. **Pohl, E.A**., "Threats, Security, and Stochastic OR," panelist and presenter. INFORMS 2002, San Jose, CA, November 2002.

185. **Driscoll, P.J.** and Pohl, E.A., "Modeling the Decision Quality of Sensor to Shooter (STS) Networks," *7th International Conference on Information Quality*, Boston, MA, November 2002.

186. **Driscoll, P.J.** and Pohl, E.A., "A Mathematical Programming Approach to Reliability Systems Design," Presented at *the International Federation on Operations Research Symposium* (IFORS), Edinburgh, Scotland, July 2002.

187. Driscoll, P.J. and **Pohl, E.A.,** "Modeling the Decision Quality of Sensor to Shooter (STS) Networks," Presented at the *70th Military Operations Research Symposium*, Ft. Leavenworth, KS, June 2002.

188. **Durkee*, D.P**, Pohl, E.A., and Mykytka, E.F., "Input Data Characterization Factors Affecting Availability Estimation Accuracy," Presented at *the 2002 Reliability and Maintainability Symposium*, Seattle, WA, January 2002.

189. **Cassady, C.R.,** Murdock, W., and Pohl, E., "Selective Maintenance Modeling," Presented at the *2000 Industrial Engineering Research Conference,* Cleveland, OH, May 2000.

190. **Pohl, E. and Jarvis, W**., "Resource Planning and Coordination for RDT&E Programs Subject to Periodic Budget Constraints," Presented at the *Annual DoD Cost Analysis Symposium*, Williamsburg, VA, January 2000.

191. Reineke*, D.M., **Pohl, E.A.,** and Murdock, W.P., "Cost Analysis & Maintenance Policies for a Series System with Highly Censored Data" *Spring INFORMS*, Cincinnati, OH, May 1999.

192. **Murdock, W.P**., Boerigter*, D., Pohl, E.A., and Moore, A.H., "Robust Parameter Estimation of the Mixed Generalized Gamma Distribution," *Spring INFORMS*, Cincinnati, OH, May 1999.

193. **Cassady, C.,** Nachlas, J., Pohl, E., and Murdock, W., "Modeling Issues in Fleet Maintenance Optimization," presented at the *1999 Industrial Engineering Research Conference*, Phoenix, AZ, May 1999.

194. **Murdock, W.P.,** Reineke, D.M., Pohl, E.A., and Rehmert, I., "Improving Availability and Cost Performance for Complex Systems with Preventive Maintenance," *45th International Reliability and Maintainability Symposium (RAMS)*, Washington, DC, January 1999.

195. Tran*, T., Murdock, W.P., and **Pohl, E.A.,** "Bayesian Analysis for System Reliability Inferences," *45th International Reliability and Maintainability Symposium (RAMS)*, Washington, DC, January 1999.

196. **Durkee*, D.,** Pohl, E.A., and Mykytka, E., "Input Data Characterization Factors for Complex Systems Affecting Availability Estimation Accuracy," Presented at the *66th Military Operations Research Society Symposium*, Monterey, CA, June 1998.

197. **Pohl, E.A**., Ruflin*, S., and Murdock, W.P., "Non-Parametric Mean Residual Life Analysis for Highly Censored Data," Presented at the *1998 Industrial Engineering Research Conference*, Banff, Canada, May 1998.

198. **Pohl, E.A**., Ruflin*, S., and Murdock, W.P., "Optimum Preventive Maintenance Policies for Systems with Highly Censored Data," Presentation at Mississippi State University, Department of Industrial Engineering, Starkville, MS, April 1998.

199. Reineke*, D.M., **Pohl, E.A.,** and Murdock, W. P., "Survival Analysis and Maintenance Policies for a Series System Using Censored Data," Presented at the *1998 Reliability and Maintainability Symposium (RAMS)*, Anaheim, CA, January 1998.

200. Mumford*, D.M, **Pohl, E.A**., and Moore, A.H., "Minimum Distance Estimation for a Mixed Weibull Distribution," Presented at the *1997 Fall INFORMS conference*, Dallas, TX, October 1997.

201. **Pohl, E.A**., Durkee*, D., and Mykytka, E., "Sensitivity of Availability Estimates to Input Data Characterization," Presented to the Local ASA Chapter, Dayton, OH, April 1997.

202. **Durkee*, D**., Pohl, E.A., and Mykytka, E., "Sensitivity of Availability Estimates to Input Data Characterization," Presented at the *3rd ISSAT Conference on Reliability and Design*, Anaheim, CA, March 1997.

203. **Pohl, E.A. and Mykytka, E**, "Simulation Modeling for Reliability Analysis," Tutorial, *43rd Reliability and Maintainability Symposium*, Philadelphia, PA, January 1997.

204. **Williams* J.G.** and Pohl, E.A., "Missile Reliability Analysis with Censored Data," *43rd International Reliability and Maintainability Symposium*, Philadelphia, PA, January 1997.

205. Cain, J.P., **Pohl, E.A.,** and Moore, A.H. "Minimum Distance Estimation of Mixture Proportions," Presented at the *1996 Spring INFORMS Conf*erence, Washington, DC, May 1996.

Presentations (cont.)

206. **Pohl, E.A.** and Moore, A.H., "Reparameterization of the Weibull Distribution with Shape Parameter Known," Presented at the *1996 Spring INFORMS Conference*, Washington, DC, May 1996.

207. **Pohl, E.A**. and Dietrich, D.L., "Cost Effective ESS Strategies for Repairable Systems," Presented at the *Fall 1996 INFORMS Conference*, New Orleans, LA, October 1996.

208. **Pohl, E.A. and Hurst, D.J.,** "Simulation Modeling for Reliability Analysis," Tutorial, *42nd Reliability and Maintainability Symposium*, Las Vegas, NV, January 1996.

209. **Pohl, E.A.** and Dietrich, D.L., "Environmental Stress Screening for Multi-Component Systems with Weibull Failure Times and Imperfect Failure Detection," *41st International Reliability and Maintainability Symposium*, Washington, DC, January 1995.

210. **Pohl, E.A.,** "An Introduction to Reliability for System Design," Tutorial, *National Aerospace and Electronics Conference (NAECON)*, Dayton, Ohio, May 1995.

211. **Pohl, E.A**. and Nicholson, J., "A Comparative Study of Discrete Reliability Growth Models," Presented at the *Joint National Operations Research Society of America and the Institute of Management Science Conference*, Orlando, FL, October 1991.

212. **Pohl, E.A**., Robinson, D.G., and Jacobs, J., "Quality for System Design," Presented at the IEEE *National Aerospace and Electronics Conference (NAECON)*, Dayton, OH, May 1989.

PROFESSIONAL ACTIVITIES

Fellow, Institute of Industrial and Systems Engineers (IISE)
Fellow, Society of Reliability Engineers (SRE)
Fellow, American Society of Engineering Management (ASEM)
Diplomate, Society of Health Systems (SHS)
Senior Member, Institute for Electrical and Electronic Engineers (IEEE)
Senior Member, American Society for Quality (ASQ)
Member, International Council on Systems Engineering (INCOSE)
Member, Institute for Operations Research and Management Science (INFORMS)
Member, American Society for Engineering Education (ASEE)
Member, Military Operations Research Society (MORS)
Member, Society of Risk Analysis (SRA)

Co-Editor, *Engineering Management Journal*, 2018 – Present
Editorial Board, *Systems*, 2018 – Present
Editorial Board, *Journal of Military Operations Research*, 2018 - Present
Editorial Board, *IEEE Transactions on Engineering Management*, 2018 - Present
Associate Editor, *IEEE Transactions on Reliability*, 2003 – 2008, 2014- present
Associate Editor, *Journal of Quality Technology and Quantitative Management,* 2013- Present
Associate Editor, *Journal of Risk and Reliability*, 2005 - Present
Associate Editor, *Journal of Military Operations Research*, 2002 - 2018
Department Editor, Process Optimization, *IIE Transactions*, 2004 - 2005
Special Issue Editor, *IIE Transactions, Special Issue on Homeland Security*, 2004 - 2006

Served as a referee for *IEEE Transactions on Reliability, IIE Transactions on Quality and Reliability Engineering, Journal of Systems Engineering*, *Journal on Finite Elements in Analysis and Design*, *Journal of Construction Engineering, Journal of Quality and Reliability International*, the *Journal of Military Operations Research*, the *Journal of Defense Modeling and Simulation*, *Computers and Industrial Engineering, Quality Engineering,* the *Engineering Economist,* the *European Journal of Operational Research,* the *Annals of Operations Research, Naval Research Logistics, OMEGA, Systems Man and Cybernetics,* the *International Reliability and Maintainability Symposium*, the *International Council on Systems Engineering Symposium.*

TEACHING EXPERIENCE
Taught the following courses:

University of Arkansas (year taught) (text)(course evaluation)
Heuristic Optimization (2006/2011/2013/2018) (4.8, 4.7, 4.63/5.0)
Risk Analysis (2006/2008/2009/2011/2013) (*Modeling, Assessing and Managing Risk),* Haimes)
    (4.6, 4.2, 4.3, 4.1,5.0/5.0)
Nonlinear Programming (2005/2006/2007/2009/2012/2014/2017/2019) (*Engineering Optimization, Rao)*
    (4.6, 4.8, 4.6, 4.7, 4.5, 5.0/5.0)
Reliability Engineering (2005/2007/2012) (*Intro to Reliability and Maintainability Eng.,* Ebeling) (4.3,4.7/5.0)
Systems Engineering and Management (*Creative Problem Solving and Design*, Lumsdaine, Lumsdaine, Shelnutt*)*
    (2005/2006/2007/2008/2012/2013/2015) (4.0, 4.2, 4.4, 4.2, 4.3, 4.5, 4.3 /5.0)
Industrial Statistics (2004/2005/2006/2007/2011/2012/2013/2014/2015) (*Applied Statistics and Probability for Eng.*,
    Montgomery et al.) (4.1, 4.1, 3.9, 3.8, 4.0, 4.3, 4.2, 4.3/5.0)
Advanced Quality Control (2004) (*Intro to Statistical Quality Control*, Montgomery) (4.9/5.0)
Cost Estimation (2006/2009) (*Cost Analysis & Estimating for Engineering and Management*, Ostwald)
Project Management (2007/2008/2011) (*Project Management*, Merideth and Mantel) (3.9, 3.9/5.0)
Quality Engineering and Management (2008/2011) (*Statistical Quality Control,* Montgomery) (3.8/5.0)
Maintenance Management (2008) (*Productivity and Reliability-Based Maintenance Management,*   Stephens)
Quality Management (2007/2008/2009/2010) (*Managing for Quality & Performance Excellence*, Evans & Lindsey)
Supply Chain Management (2008/2009/2010/2011) (*Supply Chain Management*, Chopra & Meindl)
Global Competition (2010/2011/2012/2013/2014) (*International Business: Competing in the Global Marketplace*,
    Hill)(4.9, 5.0, 5.0/5.0)
Global Engineering and Innovation (2014, 2016) (5.0/5.0, 5.0/5.0)
Senior Design (2014/2015/2016)
Lean Six Sigma (2019) (4.69/5.0)
Leadership (2019)

United States Military Academy
Decision Support Systems (2001) (*Decision Support Systems & Intelligent Systems,* Turbon et al.)
Stochastic Processes (2002/2003) (*Probability Models*, Ross, *Applied Probability Modeling*, Mingh)
Intro to Engineering Design and Systems Management (2002) (*Systematic Systems Approach*, Athey)
Senior Capstone Design (2002/2003)

Air Force Institute of Technology
Dynamics (1995)
System Optimization (1995/1996/1997/1998) (*Engineering Optimization*, Rao)
Optimizing Engineering Designs (1997) (*Optimizing Engineering Designs*, Krottmaier)
Decision Analysis (1997) (*Making Hard Decisions*, Clemen)
Decision Analysis Practice (1996) *(Making Hard Decisions*, Clemen)
Laboratory Instrumentation (1996) (Personal Notes)
Systems Design and Analysis (1995) (*Systematic Systems Approach*, Athey)
Space Systems Integration and Design (1995) (*Space Mission Analysis and Design* Larson & Wertz)
Reliability for System Design (1996/1997) (*Reliability*, Leemis*)*
Reliability Engineering (1997) (*System Reliability Theory*, Hoyland et al.)
Advanced Topics for Reliability (1994/1997) (*Reliability Methods in Mechanical Design,* Wirsching)
Life Cycle Cost and Economic Analysis (1998) (*Life Cycle Cost and Economic Analysis,* Fabrycky)

University of Dayton (Adjunct Faculty Member, Engineering Management and Systems)
Probabilistic Models II (1995) (*Intro to Probability and Statistics for Engineers*, Milton & Arnold)
Production Engineering (1996) (*Modeling Manufacturing Systems*, Askin)
Operations Research I (1997) (*Introduction to Operations Research*, Hillier & Lieberman)
Operations Research II (1996/1997) (*Introduction to Operations Research*, Hillier & Lieberman)
Optimization I (1997) (*Introduction to Optimum Design*, Arora)

The George Washington University (Adjunct Faculty Member, Engineering Management)
Introduction to Systems Engineering (1999) (*Systems Engineering and Project Management*, Eisner)

George Mason University (Adjunct Faculty Member, Systems Engineering)
Systems Engineering Design & Integration (2000/2001) (*The Engineering Design of Systems,* Buede)
Stochastic Methods in Operations Research (2000) (*Operations Research*, Winston)

FUNDED RESEARCH (50 Research Grants exceeding $9.0 M)

Title: Integrated Multi-Objective/Multi-Discipline Jet Engine Design Optimization
Agency: Propulsion Laboratory, WL/POTA
Period of Support: October 1996 - September 1999
Amount: $65, 552
Role: Co- PI -25% responsibility

FUNDED RESEARCH (cont.)

Title: Vibration Analysis for Bladed Disk Assemblies
Agency: AFOSR
Period of Support: October 1998 -September 1999
Amount: $24,500
Role: Co- PI -20% responsibility

Title: AMRAAM Survivability Analysis
Agency: Aeronautical Systems Center/YA
Period of Support: October 1997 to December 1998
Amount: $56,480
Role: PI -100% responsibility

Title: Future Combat System Vulnerability Analysis
Agency: DARPA
Period of Support: October 2002 to September 2003

Amount: $75,000
Role: Co- PI -40% responsibility

Title: Embedded Training Decision Support
Agency: United States Army Tank Command
Period of Support: October 2003 to September 2004
Amount: $50,000
Role: PI -50% responsibility

Title: Risk Analysis for Cost and Schedule Estimation
Agency: Office of the Secretary of Defense/Program Analysis and Evaluation
Period of Support: October 2003 to December 2003
Amount: $20,000
Role: PI -100% responsibility

Title: Lead the Fleet Test Design and Analysis
Agency: United States Army/ATEC
Period of Support: October 2003 to September 2004
Amount: $125,000
Role: Co- PI -25% responsibility

FUNDED RESEARCH (cont.)

Title: Maintenance Decision-Making under Prognostic and Diagnostic Uncertainty
Agency: AFRL via TLI
Period of Support: September 2003 - January 2005
Amount: $120,907
Role: Co- PI - 25% responsibility

Title: Multi-State Selective Maintenance Decisions
Agency: AFRL via TLI
Period of Support: September 2003 - January 2005
Amount: $120,756
Role: Co-PI - 25% responsibility

Title: Quantifying the Impacts of Improvements to Prognostic and Diagnostic Capabilities
Agency: AFRL via TLI
Period of Support: September 2003 - January 2005
Amount: $110,647
Role: Co-PI - 25% responsibility

Title: Information Product Quality in Network Centric Operations
Agency: Office of the Secretary of Defense, Office of Force Transformation
Period of Support: July 2004 to May 2005
Amount: $150,000
Role: Co- PI - 30% responsibility

Title: Modeling, Assessing, and Managing Risk in Transportation Systems
Agency: MBTC
Period of Support: August 2004 to July 2007
Amount: $71,691
Role: PI- 100% responsibility

Title: C/KC-135 Weapon System Stockage Policy Analysis
Agency: National Science Foundation Grant No. EEC-0214478, Sub Project
Period of Support: August 2004 to March 2006
Amount: $135,629
Role: PI – 50% responsibility

Title: Decision Support for Logistics Response to Chemical, Biological, or Radiological Attacks
Agency: Defense Threat Reduction Agency/Air Force Research Lab
Period of Support: January 2006 - July 2007
Amount: $220,000
Role: PI - 35 % responsibility

Title: Adaptive Logistics Network Design and Optimization
Agency: Air Force Office of Scientific Research (AFOSR) via CELDi
Period of Support: January 2005 - December 2006
Amount: $267,775
Role: Co-PI - 25% responsibility

Title: Modeling and Simulation Based Framework for Sense and Respond Logistics Concepts
Agency: AFOSR via CELDi
Period of Support: January 2005 - December 2006
Amount: $303,830
Role: Co-PI - 20% responsibility

FUNDED RESEARCH (cont.)

Title: A Human Centered Approach to Sense and Respond Logistics
Agency: AFOSR
Period of Support: April 2005 - January 2006
Amount: $160,701
Role: PI - 50% responsibility

Title: Homeland Security for Rural Transportation Networks
Agency: MBTC
Period of Support: August 2006 - June 2007
Amount: $98,189
Role: Co-PI - 45% responsibility

Title: Routing Models for Rural Transportation Networks with Time-Varying Constraints
Agency: MBTC
Period of Support: August 2006 - December 2007
Amount: $100,147
Role: Co-PI - 25% responsibility

Title: Integration of Geographical Information Systems (GIS) and Logistics Planning Methods for Arkansas Rural Transportation Emergency Planning
Agency: MBTC
Period of Support: January 2006 - December 2007
Amount: $72,914
Role: Co-PI - 40% responsibility

Title: Adaptive Maintenance in a Sense-and-Respond Logistics Environment
Agency: AFOSR via CELDi
Period of Support: July 2006 - June 2008
Amount: $148,727
Role: CO-PI - 30% responsibility

Title: Design and Analysis of Operationally Robust Forecasting Techniques
Agency: AFOSR via CELDi
Period of Support: July 2006 - January 2008
Amount: $148,727
Role: Co-PI - 40% responsibility

Title: Rural Transportation Emergency Preparedness Plans
Agency: MBTC
Period of Support: August 2007 - June 2008
Amount: $106,870
Role: Co-PI - 45% responsibility

Title: An Intermittent Demand Forecasting Tool
Agency: CELDi
Period of Support: August 2007 - January 2008
Amount: $42,476
Role: Co-PI - 40% responsibility

Title: Emergency Response via Inland Waterways
Agency: MBTC
Period of Support: August 2008 - June 2009
Amount: $60,567
Role: Co-PI - 45% responsibility

FUNDED RESEARCH (cont.)

Title: Improving Forced Transfer and Special Needs Bussing in Rural Schools
Agency: MBTC
Period of Support: August 2007 - June 2008
Amount: $79,760
Role: Co-PI - 40% responsibility

Title: Identifying Opportunities for Cost and Quality Improvement in Healthcare Logistics
Agency: CIHL
Period of Support: August 2007 - June 2010
Amount: $200,000
Role: Co-PI - 40% responsibility

Title: Ensuring Continuity of Care: A Quantification of Risk in the Healthcare Supply Chain
Agency: National Science Foundation
Period of Support: August 2009 – December 2010
Amount: $150,000
Role: Co-PI 20%

Title: Designing Resilient and Sustainable Supply Chain Networks
Agency: Department of Homeland Security
Period of Support: January 2009 to December 2011
Amount: $225,000
Role: PI 50%

Title: Comprehensive Life Cycle Assessments for Fluid Dairy Systems
Agency: Dairy Industry
Period of Support: September 2009 – December 2010
Amount: $349,964
Role: Co-PI 10%

Title: Efficient Healthcare Consumer Response Update
Agency: Center for Innovation in Healthcare Logistics
Period of Support: January 2010- June 2011
Amount: $80,000
Role: Co-PI 40%

Title: A Value Based Approach for Quantifying Problem Solving
Agency: NSF SBIR via CELDI: Learning Chameleon
Period of Support: August 2009 – December 2011
Amount: $50,000
Role: PI 50%

Title: GAP Analysis between Healthcare and Retail Supply Chains
Agency: Center for Innovation in Healthcare Logistics
Period of Support: June 2010 – June 2013
Amount: $238,000
Role: PI 45%

Title: Mitigating Dynamic Risk in Multi-Modal Perishable Supply Chains
Agency: Department of Homeland Security, NTSCOE
Period of Support: August 2010 –December 2011
Amount: $170,000
Role: PI 35%

FUNDED RESEARCH (cont.)

Title: Supporting Secure and Resilient Inland Waterways
Agency: Department of Homeland Security, NTSCOE
Period of Support: August 2010 – June 2013
Amount: $420,000
Role: Co-PI 10%

Title: Resource Allocation for Dredge Scheduling and Procurement: A Mathematical Programming Approach
Agency: Coastal and Hydraulics Lab, U.S. Army Engineer Research and Development Center
Period of Support: June 2012 – October 2013
Amount: $99,547
Role: Co-PI 25%

Title: A Case Study Analysis of Inventory Cost and Practices for Operating Room Medical/Surgical Items
Agency: Covidien Inc.
Period of Support: July 2012- May 2013
Amount: $39,859
Role Co-PI 35%

Title: A Decision Support Tool for CRP/VMI Analysis at Covidien Inc.
Agency: Covidien Inc.
Period of Support: August 2013 – July 2014
Amount: $67,172
Role Co-PI 30%

Title: Reliability Growth Modeling.
Agency: AFIT/OSD/SOT
Period of Support: July 2013 – July 2014
Amount: $129,940
Role PI 50%

Title: Reliability Growth Modeling.
Agency: AFIT/OSD/SOT
Period of Support: March 2014 – Feb 2015
Amount: $99,992.00
Role PI 50%

Title: Quantifying Resilience to Enable Engineered Resilient Systems
Agency: Engineering Research and Development Center
Period of Support: March 2016 to Sept 2017
Amount: $149,000
Role: Co-Pi -50% responsibility, PI: G. Parnell (50%)

Title: Resource Constrained Accelerated Reliability Growth Testing Technology for Systems of Systems
Agency: Science of Test Consortium/ ORSA
Period of Support: Aug 2016 to July 2017
Amount: $136,000
Role: PI -33% responsibility, CoPi – Kelly Sullivan, Haitao Liao

Title: Resource Constrained Accelerated Reliability Growth Testing Technology for Systems of Systems
Agency: Science of Test Consortium/ ORSA
Period of Support: July 2017 to Dec 2017
Amount: $107,657
Role: PI -33% responsibility, CoPi – Kelly Sullivan, Haitao Liao

FUNDED RESEARCH (cont.)

Title: Poultry Excellence in China: Improving Food Safety in Poultry Supply Chains
Agency: Walmart Foundation
Period of Support: July 1 2016 to July 2019
Amount: $1,500,000
Role: PI- Y Li -30% Co-Pi's C. Rainwater (20%), J. Kent (20%), E. Pohl (10%), B. Fugate (10%), M.Kidd (10%)

Title: Modeling the Benefits of Global Standards within Healthcare Organizations
Agency: Medtronic
Period of Support: Aug 2016 to Sept 2017
Amount: $60,000
Role: Co-Pi -50% responsibility Pi: M. Rossetti (50%)

Title: Engineered Resilient Systems Frameworks and Quantification
Agency: ERDC/GTRI
Period of Support: October 2017 to September 2018
Amount: $189,433
Role: PI:Parnell, G (40%) Co-PI Pohl, E., (40%) Specking, E., (20%)

Title: Type I: University of Arkansas I-Corps Commercialization STEP (STEM Training in Entrepreneurship Practices)
Agency: National Science Foundation
Period of Support: 1 September 2017 to 31 August 2022
Amount: $249,792
Role: PI-Reeves, Co-Pi: Pohl, Sides, Beitle

Title: Resource Constrained Accelerated Reliability Growth Testing Technology for Systems of Systems
Agency: OSD Science of Test Consortium/ Mac-B
Period of Support: April 2018 to June 21 2022
Amount: $478,430.00
Role: PI -33% responsibility, CoPi – Kelly Sullivan, Haitao Liao

Title: Trade-Off Analytics for Infrastructure Preservation
Agency: DOT/MarTREC
Period of Support: 13 August 2018 to 12 August 2019
Amount: $189,433
Role: PI:Parnell, G (50%) Co-PI Pohl, E., (50%)

Title: Multidisciplinary Data Science Education to Prepare STEM Students for Data Science Careers
Agency: National Science Foundation
Period of Support: 1 October 2019 to 20 September 2024
Amount: $1,000,000
Role: PI-Chaovalitwongse, Co-Pi: Wu,, Hill, Pohl, Turner

CONSULTING

CJTF-180, Bagram Air Force Base, Afghanistan (2003)
  Defined and developed a prototype Theatre Assessment tool
  Decision support tool provides commander with the ability to assess progress
  and redirect resources as necessary in the AOR.

DARPA Future Combat System Vulnerabilities (2002)
  Served as a team member for organization and execution of vulnerabilities conference
  Co-authored White paper on conference

DARPA HAE UAV Program (1996-1997)
  Provided reliability analysis and support for the Global Hawk and Darkstar Programs
  Member of an Independent Review Team for Flight Readiness Review.

CONSULTING (cont.)

Headquarters Air Force Operational Test and Evaluation (1995-1997)
> Provided technical support for R&M issues.
> Sponsored three thesis students

AMRAAM JSPO (1995-1997)
> Provide reliability and maintainability support for AMRAAM program office.
> Sponsored one thesis student

SFC Fluidics (2013 – 2015)
> Providing reliability and quality assurance support for development of new medical products

STUDENTS ADVISED

Ph.D. Students Advised (7 completed, 3 in-progress)

Al-Karaeen, Fawaz, "Characterizing Battlefield Human Decision Making with Value Focused Thinking and Reliability Modeling," Wright State University, Co-Advisor with Ray Hill, October, 2006.

Miman, Mehmet, Ph.D. "Modeling and Analysis of the Reliability of Contingency Logistic Networks: A Multi-Dimensional Knapsack Approach," August 2008. (Assistant Professor, Toros University, Mersin Turkey)

Medal, Hugh, "Locating and Protecting Facilities Subject to Random Disruptions and Attacks," Co-Advisor with Manual Rossetti, August 2012. (Assistant Professor, Department of Industrial Engineering, University of Tennessee, Knoxville, TN)

Burbano, Angelica, "Modeling the Adoption of Identification Standards within the Healthcare Supply Chain," Co-Advisor with Ron Rardin, August 2012. (Profesora Tiempo Completo, Departamento Ingenieria Industrial, Universidad Icesi, Cali, Columbia)

Schneider, Kellie, "Reliability Analysis of Social Networks," Co-Advisor with Chase Rainwater, May 2013 (Associate Professor, Department of Engineering Management, University of Dayton)

Talafuse, Thomas, "Optimization and Modeling Methods for Reliability, Reliability Growth, and Planning," August 2016 (USAF Officer, Assistant Professor, AFIT)

Ghari, Amir, "Essays on Applications of Transportation Network Design and Optimization," May 2018.
(Senior Operations Research and Advanced Analytics Analyst, BNSF Railroad)

Cottom, Robert, "Establishing a Robust Value Hierarchy to Support Transportation Planning Decisions and Accommodate Connected and Automated Transportation Alternatives," anticipated December 2019.

Kegley, Lauren, "Bridging the Bandgap: Developing SIC Reliability Models & Understanding Key Quality Metrics, when Comparing SI- and SiC- Semiconductor packages," anticipated May 2020.

Torres, Cesar, "Models for Data Analysis in Accelerated Reliability Growth," May 2020

MS Thesis Advised (19 completed)

Neher, R.E., "Surveillance Plan for Monitoring the Shelf Life of Chemical Defense Coveralls," MS in Operations Research, Air Force Institute of Technology, March 1996. (Associate Director, Zimmerman Associates)

Mumford D .A., "Parameter Estimation for the Mixed Weibull," MS in Operations Research, Air Force Institute of technology, March 1997.

Durkee, D.P., "Sensitivity of Availability Estimates to Input Data Characterization," MS in Operations Research, Air Force Institute of technology, March 1997. (Senior Scientist, Applied Research Associates)

MS Thesis Advised (cont.)

Rummer, M., "Reliability Analysis of Telerobotics Systems," MS in Operations Research, Air Force Institute of Technology, March 1997. Manufacturing Engineer, Battelle Memorial Institute)

Tran, Thuan, "Using Bayesian Statistics in Operational Testing," MS in Operations Research, Air Force Institute of Technology, March 1998. (Col, USAF, Director of Joint Operational Unit, NSA)

Ruflin, Scott, "Optimum Preventive Maintenance Policies for the AMRAAM Missile," MS in Operations Research, Air Force Institute of technology, March 1998.

Payne, Mike, "A Variable-Complexity Modeling Approach to Scramjet Combustor Design Optimization," MS in Operations Research, Air Force Institute of Technology, March 1998 (co-advisor with Jim Chrisis).

Boerrigter, Dean, "Estimation of Mixtures of Generalized Gamma Distributions," MS in Operations Research, Air Force Institute of Technology, March 1998 (co-advisor with Al Moore). (Operations Analyst, US Space Command)

Schriver, Todd, "Application of Sequential Convex Programming to Large-Scale Structural Optimization," MS in Operations Research, Air Force Institute of Technology, March 1998 (co-advisor with Jim Chrisis).

Li, Xiaoping, "Modeling Equipment Availability for a System that Follows a Kijima Type II Imperfect Repair Process," M.S. in Industrial Engineering, University of Arkansas, December 2006. (Ph.D. Student, University

Gade, Dinakar, "The Impact of Considering Unreliable facilities in Supply Chain Network Design Models," M.S. in Industrial Engineering, University of Arkansas, August 2007. (Completed Ph.D. at the Ohio State University, Sabre Technologies)

Johnson, Rebekah, "Analysis of Distorted Risk Measures in Project Scheduling," M.S. in Industrial Engineering, University of Arkansas, May 2008. (Conoco Phillips, OK)

Guzman, Mauricio, "A Probabilistic Programming Approach in the Analysis of Social Networks," M.S. in Operations Research, August 2008. (Business Engineering Escuela Superior de Economia y Negocios (ESEN-El Salvador))

Medal, Hugh, "Multi-Objective Simulation: A comparison of Methods," M.S. in Industrial Engineering, University of Arkansas, December 2008. (Assistant Professor, Mississippi State University)

Balya, Rizki, "Modeling and Analysis of Project Reliability," M.S. in Industrial Engineering, University of Arkansas, May 2009.

Townsley, Jared, "Analyzing Healthcare Policy Reform through System Dynamics," M.S. in Industrial Engineering, University of Arkansas, August 2010. (Plant manager, Tyson)

Jiang, Leiying, "Accelerated Reliability Growth Models" M.S. in Industrial Engineering University of Arkansas, August 2014 (Supply Chain Analyst, Marshalltown Inc.)

Wong, Alex, "Use of response Surface in the Design of Simple Step Stress Accelerated Test Plans," M.S. in Industrial Engineering, University of Arkansas, May 2016. (Engineer, J.B. Hunt)

Kizito, Rodney, "Economic Cost Models for Regional Renewable Energy Decisions" August 2017.

Committee Member for Ph.D. Dissertations (53 completed, 4 in-progress)

Vanden Bosch, Peter, "Scheduling and Sequencing Arrivals to a Stochastic Service System," Ph.D. in Operations Research, Air Force Institute of Technology, August 1997.

Wilson, Kelce, "Effects of Clutter Height Distribution on the Performance of Interferometric Clutter Erasure," Ph.D. in Electrical Engineering, Air Force Institute of Technology, June 1998.

Committee Member for Ph.D. Dissertations (cont.)

Reineke, Dave, "Estimation and Goodness-of-Fit in the Case of Randomly Censored Lifetime Data," Ph.D. in Statistics, Air Force Institute of technology, June 1999.

Forsythe, Steven, "Computer-Based Methods for the Construction of Two-Level Fractional Factorial Experimental Designs," Ph.D. in Operations Research, Air Force Institute of Technology, December 1999.

Al-Rafi, Mohammed, "Inventory Optimization in Large Scale Multi-Echelon Spare Parts Inventory Systems," Ph.D. in Industrial Engineering, University of Arkansas, November 2005.

Yeung, Thomas, "Optimization Models for Capital Budgeting Under Uncertainty," Ph.D. in Industrial Engineering, University of Arkansas, December 2005.

Jampani, Jagadish, "Heuristics for Multiple Orders Per Job Scheduling Problems," Ph.D. in Industrial Engineering, University of Arkansas, August 2007.

Salman, Sinan, "The Container Loading Problem: A New Approach to the Modeling and Solution of Three Dimensional Packing Problems," Ph.D. in Industrial Engineering, University of Arkansas, August 2007.

Zambrano, Lyda, "Development of Decision Algorithms for Resource Allocation in Exploration and Production Facilities," Ph.D. in Chemical Engineering, University of Arkansas, August 2007.

Evans, Jeff, "Environment Assisted Crack Growth in NI-base Superalloys at Elevated Temperature," Ph.D. in Mechanical Engineering, August 2008.

Ertem, Mustafa Alp, "Procurement Auctions-Based Framework with Announcement Options for Resources Allocation in Disaster Relief Operations," Ph.D. in Industrial Engineering, University of Arkansas, August 2008.

AlOtaibi, Mazen, "Scheduling Disaster Relief," Ph.D. in Industrial Engineering, University of Arkansas, August 2008.

Jia, Jun, "Network Design for Forced Transfer Busing," Ph.D. in Industrial Engineering, University of Arkansas, December 2008.

Iyoob, Inamulla, "Evaluation of Multi-Unit Truckload Service Procurement Combinatorial Auctions with Two-Tier Capacity Constraints," Ph.D. in Industrial Engineering, University of Arkansas, December 2008.

Mahadeevan, Sriram, "Visualization Methods for at-a-glance Assessment in Collaborative Decision Making Environments," Ph.D in Industrial Engineering, Wright State University, May 2009.

Yang, Yisha, "Maintenance Planning for Systems Subject to Stochastic Behavior," Ph.D. in Industrial Engineering, University of Arkansas, August 2009.

Le, Ahn, "Lebesque Sampling in Feedback Control Systems," Ph.D. in Electrical Engineering, University of Arkansas, August 2009.

Le Thong, "Torque and Position Estimation in Switched Reluctance Motors Using Embedded Magnetic Field Sensors," Ph.D. in Electrical Engineering, University of Arkansas, August 2009.

Hazaro, Supta, "Calibration of Prediction Models for Remaining Life of Flexible Pavements in Arkansas," Ph.D. in Civil Engineering, University of Arkansas, December 2009.

Varghese, Vijith, "Forecasting Intermittent Demand in Large Scale Inventory Systems," Ph.D. in Industrial Engineering, University of Arkansas, December 2009.

Traore, Wendyam, "Development of Multi-Layered Magnetic Nanowires for Giant Magno-Resisitive Sensors," Ph.D. in Electrical Engineering, University of Arkansas, May 2010.

Committee Member for Ph.D. Dissertations (cont.)

Heath, Brian, "The History, Philosophy, and Practice of Agent-based Modeling and Development of the Conceptual Model for Simulation Diagrams," Ph.D in Systems and Industrial Engineering, Wright State University, May 2010.

Smith, Brian, "An Empirical Investigation of Supply Chain Excellence in Healthcare," Ph.D. in Industrial Engineering, University of Arkansas, August 2011

Unli, Yasin, "Inventory Models for Intermittent highly Variable Demand and Policy Parameter Adjustments to Meet Desired Service Level Requirements," Ph.D. in Industrial Engineering, University of Arkansas, December 2011.

Vergara, Hector, "Optimization Models and Algorithms for Truckload Relay Network Design", Ph.D. in Industrial Engineering, University of Arkansas, August 2012.

Xiao, Xingqiang Danny, "Calibration and Reliability Improvement of Mechanistic-Empirical Pavement Design Guide (MEPDG)," Ph.D. in Civil Engineering, University of Arkansas, August 2012.

Alaswad, Suzanne, "On the Maintenance Modeling and Optimization of Repairable Systems: Two Different Scenarios," Ph.D. in Industrial Engineering, University of Arkansas, December 2012.

Lehlou, Nabil, "Surveillance Planning Against Smart Insurgents in Complex Terrain", Ph.D. in Industrial Engineering, University of Arkansas, May 2013.

Okyay, Kaan, "Detailed Inventory record Inaccuracy Analysis," Ph.D. in Industrial Engineering, University of Arkansas, May 2014.

Tong, Jing Jing, "Disruption Response Support for Inland Waterway Transportation," Ph.D. in Industrial Engineering, University of Arkansas, August 2014.

Almaian, Rufaidah, "A Strategic Leadership Approach for Organizations to Effectively Manage Supplier Quality within the Construction Industry," University of Arkansas, August 2014.

JaBo, Joseph, "Reliability-Based Calibration of Resistance Factors and Monitoring Program for Driven Piles," Ph.D. in Civil Engineering, University of Arkansas, August 2015.

Almaian, Rufaidah, "A Strategic Leadership Approach for Organizations to Effectively Manage Supplier Quality within the Construction Industry," University of Arkansas, August 2015.

Huy Nhiem Nguyen, "LTL Transportation Strategies Considering Procurement Discounts," Ph.D. in Industrial Engineering, University of Arkansas, December 2014.

Race, Morgan, "Amount of Uncertainty in the Methods Utilized to Design Drilled Shaft Foundations," Ph.D. in Civil Engineering, University of Arkansas, May 2015.

Madadi, Mahboubeh, "Preventive Maintenance Decision Modeling in health and Service Systems", Ph.D. in Industrial Engineering, University of Arkansas, August 2015.

Kilinic, Mehmet, "Understanding Technology Diffusion and Spatial Accessibility in the Home Healthcare Industry," Ph.D. in Industrial Engineering, University of Arkansas, August 2015.

Schbool, Mohammad, "Essays in Physician Preference Items and Inventory Management within the Healthcare Supply Chain," Ph.D. in Industrial Engineering, University of Arkansas, May 2016.

Oztanriseven, Furkan, "Modeling Economic Impacts of the Inland Waterway Transportation System", Ph.D. in Industrial Engineering, University of Arkansas, August 2016.

Kirac, Emre, "Incorporating A New Class of Uncertainty in Disaster Relief Logistics Planning," Ph.D. in Industrial Engineering, University of Arkansas, August 2016

Committee Member for Ph.D. Dissertations (cont.)

Aibudula, Anniwaer, "Grouping Techniques to Manage Large-Scale Multi-Item Multi-Echelon Inventory Systems," Ph.D. in Industrial Engineering, University of Arkansas, December 2016.

Fan Wang, "Personalized Decision Modeling for Intervention and Prevention of Cancers among U.S. Females", Ph.D. in Industrial Engineering, University of Arkansas, 2017.

Zadah, Alirezah, "Developing Inventory Classification Approach for Large Scale Multi-Echelon Inventory Systems," Ph.D. in Industrial Engineering, University of Arkansas, August 2017.

Parsa, Payam, "Essays in Measuring, Controlling, and Coordinating Supply Chain Inventory and Transportation Operations," Ph.D. in Industrial Engineering, University of Arkansas, August 2017.

De Icaza Hugues, Rivelino, "Decision Support System for Container Port Selection using Multiple-Objective Decisions Analysis," Ph.D. in Industrial Engineering, University of Arkansas, August 2017.

Abdash, Fereydoun, "Methodologies for Solving Integrated Transportation and Scheduling Problems," Ph.D. in Industrial Engineering, August 2017.

Ahangar, Fourough, "Models and Methodologies to Address Emerging Needs In Network and Supply Chain Optimization," Ph.D. in Industrial Engineering, University of Arkansas, August 2017

Heydari, Mohammadhossein, "Optimal Allocation of Resources in Reliability Growth," Ph.D. in Industrial Engineering, University of Arkansas, May 2018.

Ahanger, Negin, "Modeling and Solution Approaches for Non-Traditional Network Flow Problems with Complicating Constraints," August 2018

Zhang, Jiingying, "Budget-Constrained Regression Model Selection Using Mixed Integer Nonlinear Programming, Ph.D. in Industrial Engineering, University of Arkansas, December 2018.

Al-Sarray, Muthanna, "H_2 Control for Improved Stability of Multi-area Electric Power System with High levels of Inverter-Based Gnereation," Ph.D. in Electrical Engineering, May 2019.

Yu, Pingjian, "Approximations and Heuristic Methods for the Optimization of Large Scale Multi-Echelon (r,Nq) Inventory Systems", Ph.D. in Industrial Engineering, University of Arkansas, anticipated December 2019.

Specking, Eric, "Quantitative Set-Based Design Techniques to Enable Preliminary Design Decisions," Ph.D. Industrial Engineering, anticipated May 2020.

Bright, Juliana, "TBD" Ph.D. in Industrial Engineering, University of Arkansas, anticipated 2020

Harvey, Winthrop, "TBD Ph.D. in Industrial Engineering, University of Arkansas, anticipated May 2021

Undergraduate Honors Thesis Students (15 completed, 2 in process)

Chambers, Lauren, "A study of Social Network Analysis Techniques Applied to Criminal and Terrorist Networks," May 2006. (Selected as a DHS Fellow for M.S. degree in Criminal Justice at Florida State University.)

Giesecke, Gregory, "A Research and Development Framework for High Technology Companies," December 2006.

Townsley, Jared, "Simulation of Multicultural Factors in Terrorism Networks," May 2008. (Attended University of Arkansas for MS, Plant Manager, Tyson).

Marhefka, Stephanie, "Team Selection Strategies for Youth Sports," May 2011.

Undergraduate Honors Thesis Students (cont.)

Frazier, Bailey, "Reliability Modeling of Rail Communications Links," May 2011.

Ulesich, Morgan, "A Course Scheduling Tool for the OMGT Program," May 2013 (Graduate Assistantship to Clemson University for MS).

Hilliard, Holly, "Multi-Objective Decision Analysis Framework for Global Nuclear Detection," May 2014

Daysi Guerra Garcia, "Information Reliability and Maintenance," December 2015

Henderson, Keegan, "Baseball Analytics: new performance measures," December 2015

Peter, Travis, "Modeling and Analysis of Disruptive Technology in Healthcare Supply Chain," May 2016

Bonfanti, John, "Modeling the Impact of UDI requirements on Healthcare Supply Chain," May 2016

Hazel, Jeff, "Modeling Supply Chain Resiliency," Co-Advise with G. Parnell, May 2016

Small, Colin, "Using Value Focused thinking for Engineered Resilient Systems," Co-Advise with G. Parnell, May 2016

Wade, Zephan, "Engineering Resilient Systems Model Applied to Network Design," Co-Advise with G. Parnell, May 2016

Woodruff, Tanner, "Service Learning in the College of Engineering," May 2017

Wells, Henley, "Baseball Analytics: Modeling and Analyzing the Shift," Anticipated December 2019

Nixon, Matt, "Modeling the Impacts of Blockchain for Healthcare," Anticipated December 2020\

Committee Member MS in Systems Engineering Design Studies (4 completed)

Carter, C.M., Fortmann, K.M., Hill, S.W., Latin, R.M., Masterson, E.J., Roh, J.A., and Setlur, S.W., "A Systems Engineering Approach to Environmental Risk Management: A Case Study of Depleted Uranium Test Area C-64, Eglin Air Force Base, Florida," MS in Systems Engineering, December 1994. Research Committee Member

Dewitt, B., Dusseault, C., Hagan, J., Cherry, M., and Peterson, B., "A Systems Engineering Approach to Aircraft Kinetic Kill Countermeasures Technology," MS in Systems Engineering, December 1995. Research Committee Member

Ashby, G.F., Buck, D.J., Carneal, R.W., Cokuysal, T., Donmez, A.T., From, J.A., Krueger, T.C., and Robinson, B.I., "A Preliminary Design of a Standardized Spacecraft Bus for Small Tactical Satellites," MS in Systems Engineering, December 1996. Research Committee Member

Cotter, P.J., Fischer, S.A., Fullingham, D., James, B.L., Seelinger, W.A., Valenti, J.M., and Walter, J.D., "A Systems Study on a Satellite Flywheel Energy Storage and Attitude Control System," MS in Systems Engineering, December 1997. Research Committee Member

M.S. Student Committees (71 completed, 1 in process)

Iyoob, Ilyas, M.S. in Industrial Engineering, UA, August 2004
Shee, Amit, M.S. in Industrial Engineering, UA, May 2005
Alaswad, Suzan, M.S. in Industrial Engineering, UA, December 2005
Erramilli, Vishnu, M.S. in Industrial Engineering, UA, December 2005
Cakici, Eray, M.S. in Industrial Engineering, UA, December 2005
Kim, Joo Hyoung, M.S. in Industrial Engineering, UA, May 2006
Jia, Jun, M.S. in Industrial Engineering, UA, May 2006
Cabrera Arispe, Patricia, M.S. in Industrial Engineering, UA, May 2006
Desai,Vikram, M.S. in Industrial Engineering, UA, May 2006
Honeycutt, Jason, M.S. in Industrial Engineering, UA, August 2006
Li, Min, M.S. in Civil Engineering, UA, August 2006
Schneider, Kellie, M.S. in Industrial Engineering, UA, December 2006
Nangia, Shikha, M.S. in Industrial Engineering, UA, December 2006
Xiang,Yisha, M.S. in Industrial Engineering, UA, December 2006
Celikkol,Selin, M.S. in Industrial Engineering, UA, May 2007
Yu, Long, M.S. in Industrial Engineering, UA, May 2007
Kulkarni, Rohan, M.S. in Industrial Engineering, UA, December 2007
Velpulah, Rahguhandra, M.S. in Industrial Engineering, UA, December 2007
Walker, Lindsey, M.S. in Industrial Engineering, UA, December 2007
Sharp, Steve, M.S. in Industrial Engineering, UA, May 2008
Ferguson, Jenny, M.S. in Industrial Engineering, UA, May 2008
Ye,Weiyang, M.S. in Industrial Engineering, UA, May 2008
Prabhu, Shyam, M.S. in Industrial Engineering, UA, May 2008
Wang, Qilu, M.S. in Industrial Engineering, UA, May 2008
Liu, Yanchou, M.S. in Industrial Engineering, UA, December, 2008
Stout, Jason, M.S. in Industrial Engineering, UA, January 2009
Keeley, Adam, M.S. in Industrial Engineering, UA, May 2009
Montgomery, Willie, M.S. in Industrial Engineering, UA, May 2009
Luttrell, Lance, M.S. in Industrial Engineering, UA, August 2009
Chu, Anh, M.S. in Electrical Engineering, UA, May 2010
Kamali, Behrooz, M.S. in Industrial Engineering, UA August 2010
Ni, Qingbiao, M.S. in Industrial Engineering, UA May 2010
Wasson, Jeremy, M.S. in Industrial Engineering, May 2010
Hong, Qin, M.S. in Industrial Engineering, UA, June 2010
Farrokhvar, Leily, M.S. in Industrial Engineering, UA, December 2010
Chenoweth, Matt, M.S. in Industrial Engineering, UA, December 2010
Wu, Jing, M.S. in Industrial Engineering, UA, May 2011
Server Apras, M.S. in Industrial Engineering, UA, May 2011
McCorkle, Tracy, M.S. in Engineering, UA, May 2011
Rimes, Sean, M.S. in Industrial Engineering, UA, December 2011
Spicer, Jessica, M.S. in Industrial Engineering, UA, May 2012
Chen, Yaohua, M.S. in Industrial Engineering, UA, May 2012
McGruder, Drake, M.S. in Engineering, UA, May 2012
Satter, Tanvir, M.S. in Industrial Engineering, UA, August 2012
Nelson, William, M.S.in Engineering, December 2012
Lara, Yeimer Bolanos, M.S. in Engineering, May 2013
Specking, Eric, M.S. in Industrial Engineering, May 2013
Allison, Joseph, M.S. in Engineering, May 2013
Yiemer, Bolanos, M.S. in Engineering, May 2013
Donahoo, Carl, M.S. in Engineering, May 2013
Euseppi, Kaleb, M.S. in Engineering, May 2013
Hossain, Muhammad, M.S. in Engineering, December 2013
Mauldin, Nova-Dawn, M.S. in Engineering, May 2013
Rana, Deepak, M.S. in Engineering, December 2013
Wilson, Joshua, M.S. in Engineering, May 2013
Panebianco, Frank, M.S. in Engineering, May 2014

M.S. Student Committees (cont.)

Long, Austin, M.S. in Engineering, May 2014
Pollard, Zackary, M.S. in Engineering, August 2014
Lewis, Allen, M.S. in Engineering, August 2014
Olmstead, Tyler, M.S. in Engineering, August 2014
McConnell, Wesley, M.S. in Engineering, August 2014
Sunkari, Pandarinath, M.S. in Industrial Engineering, May 2015
Dabhadkar, Gaurav, M.S. in Industrial Engineering, May 2015
Boudham, Othman, M.S. in Industrial Engineering, August 2015
Hasnat, Sultanul, M.S. in Operations Management, December 2017
Bolton, Josh, M.S. in Industrial Engineering, December 2017
Weisher, Colby, M.S. in Industrial Engineering, April 2018
Small, Colin, M.S. in Industrial Engineering, April 2018
Wade, Zephan, M.S. in Industrial Engineering, April 2018
Coco, Matt, M.S. in Industrial Engineering, April 2018
James, Braden, M.S. in Industrial Engineering, May 2019
Mullin, Erin, M.S. in Industrial Engineering, anticipated May 2020

M.S. Students Advised-Non-Thesis Option (21 Completed)

Pasquini, James, M.S.I.E., December 2004
Hurst, Travis, M.S.I.E., December 2004
Brain, Michelle, M.S.I.E., December 2004
Flores, Jorge, M.S.I.E., December 2004
Kempfer, Emily, M.S.I.E., December 2004
Nagarajan, Sriram, M.S.I.E., August 2007
Garman, Stephanie, M.S.I.E., December 2009
Kilgore, Mark, M.S.I.E., December 2011
Zhang, Fan, M.S.I.E., December 2012
Warhime, Richard, M.S.E., May 2013
Frank, George, M.S.E., December 2013
Carbajal, Osman, M.S.E., August 2014
McCarthy, Kevin, M.S.E., December 2014
Williams, Patrick, M.S.E., December 2014
Ibarra, Marcus, M.S.E., December 2014
Ibarra, Tim, M.S.E., December 2014
Ibarra, Daniel, M.S.E., December 2014
Jones, Teresa, M.S.E., December 2015
Lageqvist, Anton, M.S.E., May 2017
Wright, Alex, M.S.E., May 2017
Ruiz, Cesar, M.S.I.E., December 2017

Operations Management Student Comprehensive Exam Committees
In my capacity as Director of the Operations Management Program, I have served on and chaired **647** oral comprehensive exams for students completing the OMGT program. OMGT students are required to successfully pass an oral exam upon completion of 8 courses. A committee of three faculty members examines the students over the coursework they have a completed. A summary of committees chaired by year is provided below.

Year	Committees Chaired
2007	38
2008	145
2009	146
2010	104
2011	98
2012	88
2013	28
2014	24

SERVICE ACTIVITIES

Service to Profession

INFORMS
 Conference Program Committee, Contributed Sessions Co-Chair, 2017
 Meetings Committee, 2017-2019, 2019-2021
 Cluster Co-Chair, Supply Chain Risk, 2011, 2012, 2013
 INFORMS Selects Committee, Informs Analytics Conference, 2014, 2015, 2016, 2017, 2018, 2019
 INFORMS Consortium for Mathematics and Its Applications, COMAP Subcommittee, 2012-2016
 Awards Committee, Military Applications Section, 2011, 2012, 2013, 2014
 Awards Chair, Military Applications Section, 2009 - 2010
 President, Military Applications Section, 2007 - 2008
 INFORMS Sub-Division Council Member, 2004 - 2006
 Vice President/President Elect, Military Application Section, 2004, 2005, 2006

Military Operations Research Society
 Editorial Board, *The Journal of Military Operations Research*, 2002 - Present
 Working Group Co-Chair, Manpower & Personnel, MORS Conference, 2002

IEEE
 Editorial Board, *IEEE Transactions on Engineering Management*, 2018 –Present
 Associate Editor, *IEEE Transactions on Reliability*, 2003 – 2008, 2014 –Present
 Reliability and Maintainability Symposium (RAMS), IEEE representative, 1999-2011
  Member, Management Committee, 1999 – 2011
  Chairman, Board of Directors, 2012
  Conference Chair, 2011
  Conference Vice-Chair, 2010
  Program Chair 2007, 2009
  Arrangements Vice-Chair 1999, 2004
  Tutorial Program Vice-Chair 2000, 2003, 2008
  Publicity Vice-Chair 2001
  Program Vice-Chair 2002, 2006
  Registration Vice-Chair 2005
  Session Moderator, "Simulation Processes," Philadelphia, PA, January 1997
  Session Moderator, "Reliability Modeling and Simulation," Las Vegas, NV, January 1996
 National Aerospace and Electronics Conference, Dayton OH
  Vice President for Technical Program, July 1998
  Papers Chair, July 1997, May 1996
  Session Chair, "Training Systems," May 1986

Institute of Industrial and Systems Engineers
 Associate Editor, *IIE Transactions*, 2004 – 2005
 Board Member, Society of Engineering and Management Systems, 2014-2017
 Member, RAMS Board of Directors, IIE Representative, 2014- Present
 Quality Control and Reliability Engineering Division
  Director, 2003-2004
  Director Elect, 2002 - 2003
 Co-Chair, Homeland Security Track, Industrial and Systems Engineering Research Conf., 2012, 2013, 2014

Society of Reliability Engineers
 President, 2016 –2019
 Vice President, 2013-2015

American Society for Engineering Management
 Co-Editor, *Engineering Management Journal*, 2018 – Present
 Regional Director, 2014 – 2017
 Conference Chair, 31st American Society of Engineering Management Conference, 2010

Archival Journals (not affiliated with a professional society)
  Editorial Board, *Systems*, 2018 - Present
  Associate Editor, *Journal of Risk and Reliability*, 2005 - Present
  Associate Editor, *Quality Technology & Quantitative Management,* 2012 - Present

Other
  Review Board, Department of Operational Sciences, Air Force Institute of Technology, 2017
  Advisory Board, University of Dayton, Department of Engineering Management, 2004
  Capstone Design Conference Judge, USMA, 2003, 2004, 2005, 2006, 2007, 2008, 2009
  Session Chair, Zone 1 ASEE Conference, 2002
  INCOSE Point of Contact, Emerging Chapter, Dayton OH (1996, 1997)
  Session Chair, 3rd ISSAT Conference on Reliability and Quality in Design, Anaheim, CA, March 1997

Service to School

Co-Director, Emerging Institute for Advanced Data Analytics, University of Arkansas, 2014- 2016
Director of Distance Education, College of Engineering, University of Arkansas, 2010 - Present
Director, Operations Management Program, University of Arkansas, 2007 - 2014
Industrial Engineering Strategic Planning Committee, University of Arkansas, 2009, 2012, 2013
Industrial Engineering Personnel Committee, University of Arkansas, 2009 – 2010, 2012, 2013, 2014
Chair, Operations Management Graduate Committee, University of Arkansas, 2006- 2007
Graduate Curriculum Committee, University of Arkansas, 2005 – 2008, 2010- 2011, 2013-2014
Department Scholarship Committee, 2005 - 2011
Department International Education Programs Mentor, University of Arkansas, 2004 – Present
Dean of Graduate School Search Committee Member, 2010-2011
ROTC Programs Committee, University of Arkansas, 2004 – 2006, 2012-2014
Building Committee, University of Arkansas, 2013-2016
Undergraduate Curriculum Committee, University of Arkansas, 2004 - 2005
Plebe Sponsor, USMA, AY 2002, 2003
Company Academic Counselor, USMA, 2002, 2003
Department Academic Counselor, USMA, 2001, 2002, 2003
Department Honor Committee Representative, 2002, 2003
Hollis Award for Excellence in Operations Research, Judge, 2002
Capstone Design Conference Judge, United States Military Academy, 2002
GOAL Team, Continued Intellectual Development, United States Military Academy, 2001, 2002
Curriculum Committee, AFIT, Systems Engineering Program, 1995,1996,1997,1998
Curriculum Committee, AFIT, Space Operations Program, 1997, 1998

Service to Society

Northwest Arkansas, High School Hockey Club, Head Coach, 2007/2008/2009
Northwest Arkansas Youth Hockey, Assistant Coach, 2004/2005/2006/2010
Fayetteville Youth Baseball, Coach, 2004/2005/2006
North West Arkansas Science Fair Judge, 2004/2005/2006/2007/2008
Wright-Step Volunteer; Taught Introductory Engineering and Math Classes to Minority Students interested in science and
  engineering during summer. 1995, 1996, 1997
Lincoln Elementary School Mentor, Dayton, OH, Served as a mentor to a group of 6th Grade Students   interested in science
  and engineering. 1996, 1997, 1998
Oakwood High School Hockey Club, Assistant Hockey Coach, 1996/1997, 1997/1998
High School Sunday School Teacher, 1995, 1996, 1997, 1998, 2011, 2012
Elementary Sunday School Teacher, 2000, 2001, 2004, 2005, 2006, 2009, 2010
West District Science Fair Judge for the Ohio Junior Academy of Sciences, 1997, 1998
West Springfield Little League, Coach, 1999, 2000, 2001
West Point Youth Hockey, Coach, 2001/2002, 2002/2003; Referee, 2001/2002, 2002/2003;
West Point Little League, Coach, 2002, 2003

AWARDS and HONORS

Military

Defense Meritorious Service Medal
Air Force Meritorious Service Medal, 1 Bronze Oak Leaf
Air Force Commendation Medal, 1 Bronze Oak Leaf

Academic

2019 Best Paper Award, 11th International Conference on Mathematical Methods in Reliability
2019 Stan Ofsthun Award, SRE, Best Paper authored or co-authored by a student at RAMS
2018 **Elected Fellow**, American Society of Engineering Management
2016 ASEE John L. Imhoff Global Excellence Award for Industrial Engineering Education
2016 **Awarded Diplomat Status**, Society of Health Systems
2017 **SEC Academic Leadership Fellow**
2015 **Elected Fellow**, Society of Reliability Engineers
2014 University of Arkansas Alumni Award for Outstanding Service
2014 **Elected Fellow**, Institute of Industrial Engineering
Academic (cont.)

2014/2015 Holder of the John L. Imhoff Chair, Department of Industrial Engineering
2013 Outstanding Research Award, Department of Industrial Engineering
2013 Outstanding Teaching Award, Selected by the Students in Industrial Engineering
2012 Outstanding Faculty member, Department of Industrial Engineering
2012 Outstanding Teaching Award, Selected by the Students in Industrial Engineering
2012 **A.J. Golomski Award, QCRE Division of IIE, Best Paper** Presented at RAMS 2011
2010 Outstanding Service to Students, Department of Industrial Engineering
2009 Outstanding Faculty member, Department of Industrial Engineering
2008/2009 Held the John L. Imhoff Chair, Department of Industrial Engineering
2007, Outstanding Service to Students, Department of Industrial Engineering
2006, Outstanding Service to Students, Department of Industrial Engineering
2005, Outstanding Faculty Member, Department of Industrial Engineering
2004, Outstanding Instructor, Department of Industrial Engineering
2004 **Alan O. Plait Award for Tutorial Excellence**, 2003 RAMS
1998 Gage H. Crocker Outstanding Professor Nominee, AFIT School of Engineering
1998 **Alan O. Plait Award for Tutorial Excellence**, 1997 RAMS.

Ashlea Bennett Milburn, PhD

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4207 Bell Engineering Center
Fayetteville, AR 72701
(479)-575-3702, ashlea@uark.edu

Education

Doctor of Philosophy, Industrial and Systems Engineering, Georgia Institute of Technology, 2009
Master of Science, Industrial and Systems Engineering, Virginia Tech, 2004
Bachelor of Science, Industrial Engineering, *summa cum laude*, University of Arkansas, 2003

Academic Appointments

Department of Industrial Engineering, University of Arkansas
Associate Professor of Industrial Engineering, August 2018-present
Assistant Professor of Industrial Engineering, 2010-2018

Sponsored Research Grants

1. National Science Foundation Award 1026179, Workshop: Healthcare Systems Engineering Research and Education Leadership, Rardin (25%), Milburn (25%), Buyurgan (25%), Pohl (25%), 05/2010-08/2010, $28,233
2. Center for Innovation in Healthcare Logistics, Characterizing the Home Health Medical Equipment Supply Chain, Milburn (50%), Mason (50%), 05/2010-05/2011, $64,911
3. Department of Homeland Security, National Transportation Security Center of Excellence, Mitigating Dynamic Risk in Multi-Modal Perishable Commodity Supply Chains, Pohl (25%), Milburn (25%), Rainwater (25%), Mason (25%), 07/2010-06/2012, $170,000
4. Center for Innovation in Healthcare Logistics, Quantifying Nurse Involvement in the Home Healthcare Supply Chain, Milburn (50%), Mason (50%), 05/2010-05/2011, $51,957
5. Mack Blackwell Transportation Center, Rail Transportation Models for Rural Populations, Rainwater (50%), Milburn (50%), 07/2010-08/2011, $76,445
6. Mack Blackwell Transportation Center, Models for Real-Time Disaster Relief Shelter Location and Supply Routing, Milburn (50%), Rainwater (50%), 08/2011-06/2012, $47,076
7. Medline Industries, Center for Excellence in Logistics and Distribution, Scheduling Workers in a Warehouse Based on Labor Productivity, Milburn (100%), 01/2013-08/2013, $29,163
8. University of Arkansas Honors College, Analysis of the Suitability of the Trauma Center Location Configuration in the State of Arkansas, Honors College Research Grant Mentor Award, Milburn (100%), 08/2013-12/2013, $1,000
9. University of Arkansas Honors College, Models for Incorporating Block Scheduling in Blood Drive Staffing Problems, Honors College Research Grant Mentor Award, Milburn (100%), 08/2013-12/2013, $1,000
10. Center for Innovation in Healthcare Logistics, What is the Impact of Various Service Objectives on Home Health Operational Logistics Efficiency? Milburn (100%), 08/2013-08/2014, $28,974
11. Center for Innovation in Healthcare Logistics, Measuring the Potential Spatial Accessibility of Home Health Services, Milburn (100%), 08/2013-08/2014, $41,591

12. National Science Foundation, Non-Traditional Designs for Order-Picking Warehouses, Milburn (33%), Gue (33%), Smith (33%), 08/2013-07/2015, $113,381
13. Medline Industries, Center for Excellence in Logistics and Distribution, Scheduling Workers in a Warehouse Based on Labor Productivity Phase II, Milburn (100%), 08/2013-08/2014, $60,000
14. Medline Industries, Center for Excellence in Logistics and Distribution, An Analysis of Current and Alternative Forecasting Practices, Milburn (100%), 08/2014-08/2015, $60,000
15. University of Arkansas Office of the Provost, Provost's Collaborative Research Grant: Quantifying Surge Capacity of the Home Health Sector for Public Health Emergencies, 11/2014-06/2015, Milburn (50%), McNeill (50%), $1,374
16. National Science Foundation Award 1554412, CAREER: Information Accuracy and the Use of Social Data in Planning for Disaster Response, Milburn (100%), 02/2016-02/2021, $500,000
17. University of Arkansas Honors College, Distribution of Strategic National Stockpile Supplies in a Public Health Emergency, Honors College Research Grant Mentor Award, Milburn (100%), 02/2017-06/2018, $1,000
18. University of Arkansas Honors College, Understanding Strategies Governing the Use of Social Data in a Disaster Response Operation, Honors College Research Grant Mentor Award, Milburn (100%), 02/2017-06/2018, $1,000
19. Arkansas Department of Higher Education, Dispensing Medical Countermeasures in Public Health Emergencies via Home Health Agencies and Points of Distribution, SURF Award Mentor Portion, Milburn (100%), 01/2017-06/2018, $750
20. University of Arkansas Honors College, Dispensing Medical Countermeasures in Public Health Emergencies via Home Health Agencies and Points of Distribution, SURF Award Honors College Supplemental Mentor Award, Milburn (100%), 01/2017-06/2018, $250
21. Arkansas Department of Higher Education, Optimal Location of Shelters for Disaster Response Considering Population Vulnerabilities, SURF Award Mentor Portion, Milburn (100%), 01/2019-12/2019, $750
22. Arkansas Department of Transportation, Data Driven Methods to Assess Transportation System Resilience in Arkansas, Research Project Number TRC2003, Milburn (20%), Vavrik Hernandez (80%), 08/01/2019-07/31/2021, $199,921

Refereed Journal Articles

1. Bennett, A.R., Erera, A. 2011. Dynamic periodic fixed appointment scheduling for home health. *IIE Transactions on Healthcare Systems Engineering* **1**(1), 6-19.
2. Milburn, A.B., Mason, S.J., Spicer, J. 2012. Characterizing the home healthcare supply chain. *Home Health Care Management & Practice* **24**(6), p. 266-274.
3. Milburn, A.B., Mason, S.J. 2013. How much time do home health nurses spend on non-clinical supply chain duties? *Home Health Care Management & Practice* **25**(4), p. 160-168.
4. Spicer, J, Milburn, A.B. 2013. Multi-objective home health nurse routing with remote monitoring devices. *International Journal of Planning and Scheduling* **1**(4), p. 242-263.
5. Milburn, A.B., Braham, A., McClinton, J. 2014. Integrating qualitative components in quantitative courses using Facebook. *Interdisciplinary Journal of E-Learning and Learning Objects* **10**, p. 229-246.
6. Milburn, A.B., Hewitt, M., Griffin, P., Savelsbergh, M.W.P. 2014. The value of remote monitoring systems for treatment of chronic disease. *IIE Transactions on Healthcare Systems Engineering* **4**(2), p. 65-79.
7. Kirac, E., Milburn, A.B., Wardell, C.L. 2015. The traveling salesman problem with imperfect

information with application in disaster relief tour planning. *IIE Transactions* **47**(8), p. 783-799.

8. Lian, K., Milburn, A.B., Rardin, R. 2016. An improved multi-directional local search algorithm for the multi-objective consistent vehicle routing problem. *IIE Transactions* **48**(10), p. 975-992.

9. Kilinc, M., Milburn. A.B. 2016. A study of home telehealth diffusion among US home healthcare agencies using system dynamics. *IIE Transactions on Healthcare Systems Engineering* **6**(3), p. 140-161.

10. Milburn, A.B., McNeill, C. 2017. Quantifying supply of home health services for public health emergencies. *Home Health Care Management & Practice* **29**(1), p. 20-34.

11. Milburn, A.B., Kirac, E., Hadiannassar, M. 2017. Growing pains: a case study for large-scale vehicle routing. *INFORMS Transactions on Education* **17**(2), p. 81-84.

12. Kilinc, M., Milburn, A.B., Heier Stamm, J. 2017. Measuring potential spatial accessibility of home healthcare services. *Socio-Economic Planning Sciences* **59**, p. 13-25.

13. Gedik, R., Kirac, E., Milburn, A.B., Rainwater, C. 2017. A constraint programming approach for the team orienteering problem with time windows. *Computers & Industrial Engineering* **107**, p. 178-195.

14. Li, B., Hernandez, I., Milburn, A.B., Ramirez-Marquez, J. 2018. Integrating uncertain user-generated demand data when locating facilities for disaster response commodity distribution. *Socio-Economic Planning Sciences* **62**, p. 84-103.

15. Kirac, E., Milburn, A.B. 2018. A general framework for assessing the value of social data for disaster response logistics planning. *European Journal of Operational Research* **269**(2), p. 486-500.

16. Kilinc, M., Milburn, A.B., Heier stamm, J. 2018. Using spatial data analytics to identify associations between home healthcare services accessibility and socioeconomic factors. *IISE Transactions on Healthcare Systems Engineering* **8**(4), p. 250-267.

Journal Articles in Review

1. Li, B., Milburn, A.B., Mason, S.J., Shepardson, D. A heuristic for scheduling unrelated parallel machines subject to job splitting. Under revisions with *International Journal of Production Economics*.

2. McNeill, C., Milburn, A.B. In-home strategic national stockpile dispensing via home health agencies: an alternative means of dispensing to vulnerable populations. Under revisions with *Disaster Medicine and Public Health Preparedness*.

3. Mullin, E., Milburn, A.B. Logistics to the Rescue. Under revisions with *INFORMS Transactions on Education*.

Book Chapters

1. Milburn, A.B. 2012. Operations research applications in home healthcare. In R. Hall (ed.), *Handbook of Healthcare System Scheduling* (pp. 281-303). New York: Springer.

Refereed Conference Proceedings

1. Thompson, B., Bennett, A.R. Reducing length of stay for congestive heart failure patients. *International Annual Conference for the American Society for Engineering Management*, October 2011, Lubbock, TX.

2. Bennett, A.R., Hewitt, H. Estimating the value of remote monitoring systems (2 page peer-reviewed abstract). *Proceedings of INFORMS Healthcare*, June 2011, Montreal, Canada.
3. Hewitt, M., Bennett, A.R. Home health care scheduling and routing (2 page peer-reviewed abstract). *Proceedings of INFORMS Healthcare*, June 2011, Montreal, Canada.
4. Milburn, A.B., Wardell, C.L. Evaluating the impact of incorporating information from social media streams in disaster relief routing. *World Wide Web 2012 Companion*, April 16-20, 2012, Lyon, France, p. 707-708.
5. Braham, A., Milburn, A.B., McClinton, J. Using LinkedIn in the classroom. *Proceedings of the American Society for Engineering Education Midwest Section Annual Conference*, September 2013, Salina, KS.
6. Kirac, E., Milburn, A.B., Wardell, C.L. How social media information is changing disaster relief routing plans. *Proceedings of the Industrial and Systems Engineering Research Conference*, May 2013, San Juan, Puerto Rico.
7. Kirac, E., Milburn, A.B., Wardell, C.L. How social media can aid disaster relief routing plans. *Proceedings of the International Institute of Industrial Engineers Conference*, June 2013, Istanbul, Turkey.
8. Kirac, E., Milburn, A.B. Uncertain social media information with application in multi-objective disaster relief tour planning. *Proceedings of the Industrial and Systems Engineering Research Conference*, May 2015, Nashville, TN.
9. Li, B., Milburn, A.B., Rossetti, M. Methods for analyzing fiscal calendar effects within an ERP system. *Proceedings of the Industrial and Systems Engineering Research Conference*, May 2016, Anaheim, CA.
10. Mullin, E., Milburn, A.B. Disaster response routing with social data in stylized demand scenarios. Under review for the *Proceedings of the Industrial and Systems Engineering Annual Meeting*, May 2018, Orlando, FL.

Other Publications

1. Bennett, A.R., Mason, S.J., Kamali, B., Hilborn, J., Phan, E. 2011. Characterizing the home healthcare supply chain: phase I project report. Prepared for the Center for Innovation in Healthcare Logistics at the University of Arkansas.
2. Rainwater, C., Milburn, A.B., Gwaltney, J. 2011. Rail transportation models for rural populations. Prepared for the Mack-Blackwell Rural Transportation Center at the University of Arkansas.
3. Milburn, A.B., Rainwater, C., Boudhoum, O., Young, S. 2013. Models for disaster relief shelter location and supply routing. Prepared for the Mack-Blackwell Rural Transportation Center at the University of Arkansas.
4. Li, B., Milburn, A.B. 2014. Scheduling workers in a warehouse based on productivity performance. Medline project final report. Prepared for the Center for Excellence in Logistics and Distribution at the University of Arkansas.

Presentations

1. Bennett, A.R., Erera, A. Home health nurse routing and scheduling. Presented at MIT ORC Healthcare Conference, Cambridge, MA, May 2007.
2. Bennett, A.R., Erera. A. Scenario-based planning for the dynamic periodic home health nurse scheduling problem. Presented at INFORMS Annual Meeting, Seattle, WA, November 2007.

3. Bennett, A.R., Erera, A. Dynamic periodic routing of home health practitioners. Presented at INFORMS Annual Meeting, Washington D.C., November 2008.
4. Bennett, A.R., Erera, A. The home health nurse routing and scheduling problem. Presented at the University of Arkansas Center for Innovation in Healthcare Logistics Seminar, Fayetteville, AR, 2008.
5. Bennett, A.R. The development and assignment of service district boundaries for long-term health service liaisons. Presented at INFORMS Annual Meeting, San Diego, CA, November 2009.
6. Bennett, A.R., Erera, A. Determining service districts for home health workers. Presented at the Industrial Engineering Research Conference, Cancun, Mexico, May 2010.
7. Taylor, N., Mason, S., Bennett, A.R. Industrial engineering analysis to improve phlebotomy lab operations. Presented at the Industrial Engineering Research Conference, Cancun, Mexico, May 2010.
8. Bennett, A.R., Mason, S.J., Hilborn, J., Phan, E. Home health supply chain project update. Presented at the CIHL Semi-Annual Sponsors Meeting, Fayetteville, AR, June 2010.
9. Bennett, A.R., Hewitt, M. The promise and value of remote monitoring devices. Presented at the INFORMS Annual Meeting, Austin, TX, November 2010.
10. Kamali, B, Bennett, A.R., Erera, A. Evaluating operating costs in routing problems with fixed appointment times. Presented at the INFORMS Annual Meeting, Austin, TX, November 2010.
11. Hewitt, M., Bennett, A.R., Nowak, M. Impact of consistency of care on home healthcare routing. Presented at the INFORMS Annual Meeting, Austin, TX, November 2010.
12. Bennett, A.R., Mason, S.J., Hilborn, J., Phan, E. Home health supply chain project update. Presented at the CIHL Semi-Annual Sponsors Meeting, Fayetteville, AR, December 2010.
13. Milburn, A.B., Mason, S.J., Kamali, B. Characterizing the home healthcare supply chain. Presented at the Society for Health Systems Conference, Orlando, FL, February 2011.
14. St. John, D., Spicer, J., Rainwater, C., Pohl, E., Milburn, A.B., Mason, S.J. Mitigating dynamic risk in multi-modal perishable commodity supply chain networks. Presented at the Fifth Annual Department of Homeland Security University Network Student Day, Washington, D.C., March 2011.
15. Spicer, J., Milburn, A.B., Hewitt, M. Impact of remote monitoring technologies on home health nurse routing. Presented at the Industrial Engineering Research Conference, Reno, NV, May 2011.
16. Milburn, A.B., Mason, S.J., Kamali, B. Characterizing the home healthcare supply chain. Presented at the Industrial Engineering Research Conference, Reno, NV, May 2011.
17. Milburn, A.B., Hewitt, M. Estimating the value of remote monitoring systems. Presented at the INFORMS Health Applications Conference, Montreal, Canada, June 2011.
18. Hewitt, M., Milburn, A.B. Home health care scheduling and routing. Presented at the INFORMS Health Applications Conference, Montreal, Canada, June 2011.
19. Milburn, A.B. Evaluating the impact of the Medicare hospice face to face encounter requirement. Presented at the Hospice and Palliative Care Association of Arkansas Fall Conference, Little Rock, AR, September 2011.
20. Thompson, B., Milburn, A.B. Reducing length of stay for congesting heart failure patients. Presented at the Annual Conference for the American Society for Engineering Management, October 2011.
21. Milburn, A.B., Mason, S.J., Spicer, J. How do home health nurses spend their time (poster). Presented at the INFORMS Annual Meeting, Charlotte, NC, November 2011.
22. Lin, Y.S., Erera, A., Milburn, A.B. Multi-scenario heuristics for a dynamic traveling sales-

man problem with fixed appointment times. Presented at the INFORMS Annual Meeting, Charlotte, NC, November 2011.

23. Spicer, J., Milburn, A.B., Mason, S.J. Patient and nurse considerations in home health routing with telehealth devices (poster). Presented at the INFORMS Annual Meeting, Charlotte, NC, November 2011.

24. Rainwater, C., Gwaltney, J., Milburn, A.B. Rail transportation models for rural populations. Presented at the Mack-Blackwell Rural Transportation Center Advisory Board Meeting, Fayetteville, AR, November 2011.

25. St. John, D., Bright, J., Rainwater, C., Pohl, E., Milburn, A.B., Mason, S.J. Mitigating dynamic risk in multi-modal perishable commodity supply chain networks (poster). Presented at the Mack-Blackwell Rural Transportation Center Advisory Board Meeting, Fayetteville, AR, November 2011.

26. Boudhoum, O., Milburn, A.B., Rainwater, C. Models for disaster relief and supply routing (poster). Presented at the Mack-Blackwell Rural Transportation Center Advisory Board Meeting, Fayetteville, AR, November 2011.

27. Wardell, C.L., Milburn, A.B. Evaluating the impact of incorporating information from social media streams in disaster relief routing. Presented at the First International Workshop on Social Web for Disaster Management, Lyon, France, April 2012.

28. Milburn, A.B., Mason, S.J., Spicer, J. Quantifying nurse involvement in the home health supply chain. Presented at the Industrial and Systems Engineering Research Conference, Orlando, FL, May 2012.

29. Milburn, A.B., Rainwater, C., Boudhoum, O., Young, S. Models for disaster relief shelter location and supply routing. Presented at the Industrial and Systems Engineering Research Conference, Orlando, FL, May 2012.

30. Milburn, A.B. Logistics for the common good. Presented at the Engineering Campus, Christ University, Bangalore, India, July 2012.

31. Milburn, A.B., Rainwater, C. Online point of distribution location in disaster relief. Presented at the INFORMS Annual Meeting, Phoenix, AZ, October 2012.

32. Kirac, E., Milburn, A.B., Wardell, C.L. Can social media information improve disaster relief routing plans? Presented at the INFORMS Annual Meeting, Phoenix, AZ, October 2012.

33. Wardell, C.L., Milburn, A.B., Kirac, E. Crisis, data, and decision making: when does accuracy matter? Presented at the Fourth Annual International Conference of Crisis Mappers, Washington, D.C., October 2012.

34. Spicer, J., Milburn, A.B. Patient and nurse considerations in home health routing with remote monitoring devices (poster). Presented at the University of Arkansas From Abstract to Contract Graduate Student Research Competition, Fayetteville, AR, October 2012.

35. Kirac, E., Milburn, A.B., Wardell, C.L. How social media information is changing disaster relief routing plans. Presented at the Industrial and Systems Engineering Research Conference, San Juan, Puerto Rico, May 2013.

36. Kirac, E., Milburn, A.B., Wardell, C.L. How social media can aid disaster relief routing plans. Prsented at the International Institute of Industrial Engineers Conference, Istanbul, Turkey, June 2013.

37. Milburn, A.B., Mason, S.J. Uncovering hidden costs in home health supply chains. Presented at INFORMS Healthcare, Chicago, IL, July 2013.

38. Braham, A., Milburn, A.B., McClinton, J. Using LinkedIn in the classroom. Presented at the American Society for Engineering Education Midwest Section Annual Conference, Salina, KS, September 2013.

39. Lian, K., Milburn, A.B., Rardin, R. Patient-focused considerations in home health nurse

Ashlea Bennett Milburn, PhD

routing problems. Presented at the INFORMS Annual Meeting, Minneapolis, MN, October 2013.

40. Kirac, E., Milburn, A.B. Social media usage in disaster relief routing. Presented at the INFORMS Annual Meeting, Minneapolis, MN, October 2013.

41. Kirac, E., Milburn, A.B. Incorporating needs from social media in static disaster relief routing plans (poster). Presented at the INFORMS Annual Meeting, Minneapolis, MN, October 2013.

42. Li, B., Milburn, A.B. Scheduling workers in a warehouse based on productivity performance. Presented at the INFORMS Annual Meeting, Minneapolis, MN, October 2013.

43. Li, B., Milburn, A.B. Scheduling workers in a warehouse based on productivity performance (poster). Presented at the Center for Excellence in Logistics and Distribution Industrial Advisory Board Meeting and Research Symposium, Chicago, IL, April 2014.

44. Kirac, E., Milburn, A.B., Wardell, C.L. Humanitarian relief routing using social data. Presented at the Industrial and Systems Engineering Research Conference, Montreal, Canada, June 2014.

45. Li, B., Hernandez, I., Milburn, A.B., Ramirez-Marquez, J. Integrating uncertain data in disaster relief facility location. Presented at the Industrial and Systems Engineering Research Conference, Montreal, Canada, June 2014.

46. Kilinc, M., Milburn, A.B. Does home care accessibility depend on place or related variables? Presented at the Industrial and Systems Engineering Research Conference, Montreal, Canada, June 2014.

47. Lian, K., Milburn, A.B., Rardin, R. Study on home health care nurse routing problem. Presented at the Industrial and Systems Engineering Research Conference, Montreal, Canada, June 2014.

48. Milburn, A.B., Li, B. Scheduling workers in a warehouse based on productivity performance: phase II. Presented at the Center for Excellence in Logistics and Distribution Industrial Advisory Board Meeting and Research Symposium, Dallas, TX, October 2014.

49. Li, B., Milburn, A.B. Scheduling workers in a warehouse based on productivity performance: phase II (poster). Presented at the Center for Excellence in Logistics and Distribution Industrial Advisory Board Meeting and Research Symposium, Dallas, TX, October 2014.

50. Lian, K., Milburn, A.B., Rardin, R. Patient-focused considerations in home health nurse routing problems. Presented at the INFORMS Annual Meeting, San Francisco, CA, November 2014.

51. Kilinc, M., Milburn, A.B. Measuring the efficiency of home health agencies. Presented at the INFORMS Annual Meeting, San Francisco, CA, November 2014.

52. Hadiannassar, M., Milburn, A.B. Growing Pains (a teaching case study). Presented at the INFORMS Annual Meeting, San Francisco, CA, November 2014.

53. Kirac, E., Milburn, A.B. Social media usage in disaster relief routing. Presented at the INFORMS Annual Meeting, San Francisco, CA, November 2014.

54. Kirac, E., Miburn, A.B., Wardell, C.L. Social media usage in static disaster relief routing plans (poster). Presented at the INFORMS Annual Meeting, San Francisco, CA, November 2014.

55. Li, B., Hernandez, I., Milburn, A.B., Ramirez-Marquez, J. Integrating uncertain data in disaster relief facility location. Presented at the INFORMS Annual Meeting, San Francisco, CA, November 2014.

56. Hadiannassar, M., Milburn, A.B. Dillards store delivery project. Presented at the University of Arkansas From Abstract to Contract Graduate Research Competition, Fayetteville, AR, November 2014.

57. Kilinc, M., Milburn, A.B. Measuring spatial access to home healthcare services. Presented

at the University of Arkansas From Abstract to Contract Graduate Research Competition, Fayetteville, AR, November 2014.

58. Milburn, A.B., Li, B., Rossetti, M. An analysis of current and alternative forecasting. Center for Excellence in Logistics and Distribution Industrial Advisory Board Meeting and Research Symposium, Chicago, IL, 2015.

59. Kirac, E., Milburn, A.B. Social media usage in static disaster relief routing plans (poster). University of Arkansas Faculty Poster Showcase for Cyber, Smartgrid and Logistics, Fayetteville, AR, 2015.

60. Milburn, A.B. The logistics of home health care. University of Arkansas Center for Innovation in Healthcare Logistics Collaboration Meeting, Fayetteville, AR, 2015.

61. Milburn, A.B. The logistics of home health care. University of Arkansas Supply Chain Management Research Center Fall Symposium, Fayetteville, AR, 2015.

62. Milburn, A.B. The logistics of home health care. University of Arkansas Freshman Engineering Program Honors Research Colloquium, Fayetteville, AR, 2015.

63. Kilinc, M., Milburn, A.B. Comparing efficiency and quality in the home health care industry. Industrial and Systems Engineering Research Conference, Nashville, TN, 2015.

64. Hadian, M., Milburn, A.B. Inventory routing problem with time windows. Industrial and Systems Engineering Research Conference, Nashville, TN, 2015.

65. Gedik, R., Kirac, E., Milburn, A.B., Rainwater, C.E. A constraint programming approach for the team orienteering problem with time windows. Industrial and Systems Engineering Research Conference, Nashville, TN, 2015.

66. Li, B., Milburn, A.B., Mason, S.J. Parallel machine scheduling with unrelated machines and job splitting. Industrial and Systems Engineering Research Conference, Nashville, TN, 2015.

67. Kirac, E., Milburn, A.B. Uncertain social media with application in multi-objective disaster relief tour planning. Industrial and Systems Engineering Research Conference, Nashville, TN, 2015.

68. Lian, K., Milburn, A.B., Rardin, R. Study on multi-objective periodic vehicle routing problem with service consistency. Industrial and Systems Engineering Research Conference, Nashville, TN, 2015.

69. Kilinc, M., Milburn, A.B., Heier Stamm, J. Measuring the potential spatial accessibility of home healthcare services. Industrial and Systems Engineering Research Conference, Nashville, TN, 2015.

70. Li, B., Milburn, A.B., Mason, S.J. Heuristic approach for an unrelated parallel machine scheduling problem with ready times and due dates. INFORMS Annual Meeting, Philadelphia, PA, 2015.

71. Lian, K., Milburn, A.B., Rardin, R. Study on multi-objective periodic vehicle routing problem with service consistency. INFORMS Annual Meeting, Philadelphia, PA, 2015.

72. Gedik, R., Kirac, E., Milburn, A.B., Rainwater, C.E. A constraint programming approach for the team orienteering problem with time windows. INFORMS Annual Meeting, Philadelphia, PA, 2015.

73. Kirac, E., Milburn, A.B. Multiple-scenario approach for a dynamic disaster relief routing problem with uncertain social data. INFORMS Annual Meeting, Philadelphia, PA, 2015.

74. Li, B., Milburn, A.B., Rossetti, M.D. An analysis of current and alternative forecasting (poster). Center for Excellence in Logistics and Distribution Industrial Advisory Board Meeting and Research Symposium, Chicago, IL, 2015.

75. Li, B., Milburn, A.B., Rossetti, M.D. An analysis of current and alternative forecasting (poster). Center for Excellence in Logistics and Distribution Industrial Advisory Board Meeting and Research Symposium, Atlanta, GA, 2015.

Ashlea Bennett Milburn, PhD

76. Milburn, A.B. Engineering solutions for home health care logistics challenges. Center for Innovation in Healthcare Logistics Driving Value through Innovation Conference, Fayetteville, AR, 2016.
77. Milburn, A.B. Incorporating uncertain social data in disaster response logistics planning. University of Arkansas Industrial Engineering Honors Experience class, Fayetteville, AR, 2016.
78. Li, B., Milburn, A.B., Rossetti, M. Methods for analyzing fiscal calendar effects within an ERP system. Industrial and Systems Engineering Research Conference, Anaheim, CA, 2016.
79. Conley, A., Milburn, A.B., McNeill, C. Quantifying home health sector surge capacity considering nurse willingness and ability to report to work (poster). Arkansas Louis Stokes Alliance for Minority Participation Spring Research Conference, Little Rock, AR, 2016.
80. Milburn, A.B. Home healthcare logistics planning. University of Arkansas Industrial Engineering Honors Experience class, Fayetteville, AR, 2017.
81. Kirac, E., Milburn, A.B. The dynamic team orienteering problem. Institute of Industrial and Systems Engineering Annual Meeting, Pittsburgh, PA. 2017.
82. Hudgeons, A., Milburn, A.B., McNeill, C. Dispensing medical countermeasures in public health emergencies via home health agencies and Points of Distribution. Institute of Industrial and Systems Engineers Annual Meeting, Pittsburgh, PA. 2017.
83. McNeill, C., Milburn, A.B. Home health surge capacity: the supply side. Southern Nursing Research Society Annual Conference, Dallas, TX. 2017.
84. Kilinc, M., Milburn, A.B. A study of telehealth diffusion among US home healthcare agencies using system dynamics: IISE Transactions on Healthcare Systems Engineering Best Paper Award presentation. IISE Annual Meeting, Pittsburgh, PA. 2017.
85. Milburn, A.B. Publishing cases in INFORMS Transactions On Education: author experience. INFORMS Annual Meeting, Houston, TX. 2017.
86. Hudgeons, A., Milburn, A.B., McNeill, C. Dispensing medical countermeasures in public health emergencies via home health agencies and Points of Distribution. INFORMS Annual Meeting, Houston, TX. 2017.
87. Kirac, E., Milburn, A.B. Multiple plan approach for the dynamic team orienteering problem. INFORMS Annual Meeting, Houston, TX. 2017.
88. Taylor, J., Milburn, A.B. Understanding strategies governing the use of social data in a disaster response operation. INFORMS Annual Meeting, Houston, TX. 2017.
89. Milburn, A.B. Building capabilities for a social data integrated disaster response. Arkansas Emergency Management Conference, Rogers, AR. 2017.
90. Milburn, A.B. Can data posted to social platforms improve disaster response? Smith College Math Symposium, Northampton, MA. 2017.
91. Milburn, A.B. Can data posted to social platforms improve disaster response? Mount Holyoke College Math/Stat Club, South Hadley, MA. 2017.
92. Milburn, A.B. Can data posted to social platforms improve disaster response? University of Arkansas Industrial Engineering Honors Experience class, Fayetteville, AR. 2017.
93. Kirac, E., Milburn, A.B. A general framework for assessing the value of social data for disaster response logistics planning. Production and Operations Management Society Annual Conference, Houston, TX, 2018.
94. McNeill, C., Milburn, A.B., Hudgeons, A. Evaluating a model for medical countermeasures dispensing that is inclusive of home health care and nursing school assets. Southern Nursing Research Society Annual Conference, Atlanta, GA, 2018.
95. Goss, O., Milburn, A.B. Multi-tiered distribution modeling for mass dispensing during public health emergencies. IISE Annual Meeting, Orlando, FL, 2018.

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96. Kirac, E., Milburn, A.B., McNeill, C. Comparing alternative models for in-home dispensing during public health emergencies. IISE Annual Meeting, Orlando, FL, 2018.
97. Mullin, E., Milburn, A.B. Disaster response routing with social data in stylized demand scenarios. IISE Annual Meeting, Orlando, FL, 2018.
98. Milburn, A.B. Situational awareness during large disasters - what might we be missing? Arkansas Emergency Management Conference, Hot Springs, AR, 2018.
99. Milburn, A.B., Kirac, E., McNeill, C. Modeling the logistics capabilities of home health agencies to provide in-home dispensing to vulnerable populations during public health emergencies. INFORMS Annual Meeting, Phoenix, AZ, 2018.
100. Mullin, E., Milburn, A.B. A dynamic team orienteering model of dynamic urban search and rescue deployment decision-making with social data inputs. INFORMS Annual Meeting, Phoenix, AZ, 2018.
101. Milburn, A.B., Heier Stamm, J.L., Kilinc, M. Using spatial data analytics to identify associations between home healthcare accessibility and socioeconomic factors. INFORMS Annual Meeting, Phoenix, AZ, 2018.
102. McNeill, C., Milburn, A.B., Kirac, E. Assessing the feasibility of an in-home medical countermeasures dispensing model for vulnerable homebound populations. Natural Hazards Research and Applications Workshop, Broomfield, CO, 2019.
103. Milburn, A.B., McNeill, C., Kirac, E. Modeling the logistics capabilities of home health agencies to provide in-home dispensing to vulnerable populations during public health emergencies. Washington County Local Emergency Planning Committee Meeting, Fayetteville, AR, 2019.
104. Taylor, J., Milburn, A.B. Locating emergency shelters in consideration of spatial and aspatial elements of accessibility. INFORMS Annual Meeting, Seattle, WA, 2019.
105. Alseth, A., Milburn, A.B. Routing plans in the wake of hurricanes: practitioner guided scenarios. INFORMS Annual Meeting, Seattle, WA, 2019.

Courses Taught

INEG 2313: Applied Probability and Statistics for Engineers I, University of Arkansas
    Spring 2010, enrollment 73, rating 3.70/5.0
    Fall 2011, enrollment 80, rating 4.31/5.0
    Fall 2013, enrollment 92, rating 4.73/5.0
    Fall 2015, enrollment 93, rating 4.68/5.0
    Fall 2018, enrollment 84, rating 4.53/5.0
    Spring 2019, enrollment 117, rating 4.47/5.0

INEG 410V: Introduction to Healthcare Systems Engineering, University of Arkansas
    Fall 2010, enrollment 12, 4.30/5.0
    Fall 2014, enrollment 28, 4.70/5.0

INEG 4633: Introduction to Transportation Logistics, University of Arkansas
    Spring 2011 (cross-listed with INEG 5533), enrollment 17, rating 3.95/5.0
    Spring 2012, enrollment 17, rating 4.81/5.0
    Spring 2013, enrollment 20, 4.71/5.0
    Spring 2015, enrollment 55, 4.43/5.0
    Spring 2016, enrollment 39, 4.99/5.0
    Spring 2017, enrollment 41, 4.95/5.0

Spring 2018, enrollment 40, 4.96/5.0
Fall 2018, enrollment 28, 4.81/5.0

GNEG 4103: Globalization and Innovation, Christ University, Bangalore, India
Summer 2012, enrollment 7, rating 5.0/5.0

INEG 514V: Research in Healthcare Systems Engineering, University of Arkansas
Fall 2011, enrollment 5, 4.91/5.0

INEG 5533: Network Optimization in Transportation Logistics, University of Arkansas
Spring 2011 (cross-listed with INEG 4633), enrollment 20, rating 3.95/5.0
Spring 2013, enrollment 22, 4.79/5.0
Spring 2015, enrollment 22, 4.6/5.0
Spring 2016, enrollment 4, no rating available due to enrollment size
Spring 2018, enrollment 10, 4.79/5.0

Dissertations and Master's Theses Directed

1. Jessica Spicer, MSIE, Incorporating Patient Service Considerations in Home Health Nurse Routing, 2012
2. Mina Hadiannassar, MSIE, Inventory Routing Problem with Time Windows, 2015
3. Mehmet Kilinc, PhD, Understanding Technology Diffusion and Spatial Accessibility in the Home Healthcare Industry, 2015
4. Emre Kirac, PhD, Incorporating Uncertain User-Generated Data in Disaster Relief Routing, 2016
5. Kunlei Lian, PhD, Service Consistency in Vehicle Routing, 2017
6. Bin Li, PhD, Quantitative Methods for Select Problems in Facility Location and Logistics, 2018
7. Erin Mullin, PhD Student, In Progress
8. Andrew Alseth, PhD, In Progress
9. Justin Taylor, MSIE, In Progress

Master's and Doctoral Committee Service

1. Jeff Gwaltney, MSIE, Thesis Committee, Chaired by C. Rainwater, 2011
2. Fan Zhang, MSIE, Oral Exam Committee, Chaired by M. Rossetti, 2011
3. James Hilborn, MSIE, Oral Exam Committee, Chaired by A.B. Milburn, 2011
4. Coby Durham, MSIE, Oral Exam Committee, Chaired by A.B. Milburn, 2012
5. Crystal Wilson, MSIE, Thesis Committee, Chaired by S. Root, 2013
6. Martha Gonzalez, MSIE, Thesis Committee, Chaired by H. Nachtmann, 2013
7. Karthik Chirala, MSIE, Oral Exam Committee, Chaired by G. Parnell, 2016
8. Mohammad Shbool, PhD, Dissertation Committee, Chaired by M. Rossetti, 2016
9. Anh Pham, MSIE, Thesis Committee, Chaired by S. Zhang, 2016
10. Tiffany Yang, MSIE, Thesis Committee, Chaired by K. Sullivan, 2016
11. Ram Gadde, MSIE, Oral Exam Committee, Chaired by G. Parnell, 2017
12. Aniela Garay Sianca, MSIE, Project Committee, Chaired by S. Nurre, 2017
13. Mahmut Tutam, PhD, Dissertation Committee, Chaired by J.A. White, 2018

14. Murthy Bhavaraju, MSIE, Oral Exam Committee, 2018
15. Olivier Kwizera, MSIE, Oral Exam Committee, 2018
16. Rohith Ravichandran, MSIE, Oral Exam Committee and Chair, 2019
17. Aniela Garay Sianca, PhD, Dissertation Committee, Chaired by S. Nurre, TBD

Undergraduate Honors Theses Directed

1. Othman Boudhoum, BSIE, Disaster Relief Models: Location of Points of Distribution, 2013
2. Adeola Yusuf, BSIE, Cost Distribution Analysis of Remote Monitoring System Use in the Treatment of Chronic Diseases, 2013
3. Katy Accurso, BSIE, Analysis of the Suitability of the Trauma Center Location Configuration in the State of Arkansas, 2014
4. Christopher Bayles, BSIE, Uncertainty in Relief Supply Distribution, 2014
5. Yulong Su, BSIE, Models for Incorporating Block Scheduling in Blood Drive Staffing Problems, 2014
6. Olivia Goss, BSIE, Transportation and Distribution of Strategic National Stockpile Supplies in a Public Health Emergency, 2018
7. Anna Hudgeons, BSIE, Dispensing Medical Countermeasures in Public Health Emergencies via Home Health Agencies and Points of Distribution, 2018
8. Justin Taylor, BSIE, Understanding Strategies Governing the Use of Social Data in a Disaster Response Operation, 2018
9. Alexander Johnson, BSIE, Optimal Location of Emergency Response Shelters Considering Health and Mobility Vulnerabilities, expected 2019

Undergraduate Honors Committee Service

1. Natassia Taylor, BSIE, Chaired by S. Mason, 2010
2. Blake Puryear, BSCS, Chaired by C. Thompson, 2013
3. Brian Trussell, BSIE, Chaired by S. Zhang, 2016
4. Alexis Gaddy, BSIE, Chaired by S. Nurre, 2017

Professional Service

National Service
ISERC, Healthcare Systems Engineering Track Co-Chair, 2010-2011
INFORMS Healthcare Conference, Session Chair, 2011 & 2013
ISERC, Session Chair, 2010-2014, 2017
IIE Society for Health Systems, Student Paper Competition Faculty Coordinator, 2011-2013
IIE Society for Health Systems Conference, Applied Research Track Chair, 2012-2013
IIE Society for Health Systems Conference, Panel Moderator, 2012-2013
INFORMS Annual Meeting, Session Chair, 2012-2014, 2016-2017
Healthcare Systems Engineering Alliance Treasurer, 2014-current
National Science Foundation Review Panelist, 2016
Peer Review, various journals, 2010-current
Mentor, INFORMS WORMS Coffee & Conversations Program, 2017-2018
Board Member, *INFORMS Transactions on Education*, 2018-current
Associate Editor, *INFORMS Transactions on Education*, 2018-current
INFORMS Social Media Analytics Section Leadership Team, 2018-current

IISE Logistics and Supply Chain Division Student Case Competition Review Committee, 2019
National Science Foundation Review Panelist, 2019
INFORMS Transportation and Logistics Society Conference Scientific Committee, 2019

University Service
University of Arkansas Student Health Center Advisory Committee, 2011-2015
Reviewer for Honors College Study Abroad Grant Proposals, 2013
Participation in the University of Arkansas CAREER Proposal Workshop as a Panelist, 2017
Reviewer for Honors College Fellowships, 2018
Participation in College of Engineering Summer Camps, 2017-2018
Graduate School Dean's 5-Year Review Committee, 2018-2019

Departmental Service
Committee on the Evaluation of Teaching, 2010-2011
Graduate Committee, 2010-2013, 2015-current
Arkansas Chapter of Alpha Pi Mu, **Faculty Advisor**, 2010-2015
Graduate Optimization Curriculum Subgroup, **Co-chair**, 2011-2012
Undergraduate Committee, 2013-2015
Endowed Faculty Position Search Committee, 2013-2016, 2018-2019
Student Awards Banquet, **Chair**, 2013-current
Scholarship Committee, **Co-Chair**, 2013-current
Daniel E. Ferritor Award INEG Nomination Committee, 2017

Industry Experience

Visiting Nurse Health System, Atlanta, GA, Graduate Student Assistant, Sep 2008-May 2009
The Boeing Company, St. Louis, MO, Pricing Intern, May-Aug 2002
JB Hunt, LLC, Lowell, AR, Engineering Services Intern, May 2001-Apr 2002

Awards and Recognitions

- National Science Foundation Graduate Research Fellowship, 2003 - 2008
- INFORMS Doctoral Student Colloquium, 2008
- Georgia National Defense Transportation Association Fellowship, 2008
- Richard P. Covert HIMSS Foundation Scholarship for Management Systems, 2009
- Industrial Engineering Research Conference New Faculty Colloquium, 2010
- University of Arkansas Department of Industrial Engineering Outstanding Teacher, 2013
- "Growing Pains" teaching case selected as finalist in INFORMS Case Competition with graduate student co-author Mina Hadiannassar, 2014
- Won 2nd place in INFORMS Annual Meeting Interactive Sessions Competition with graduate student co-author Emre Kirac, 2014
- University of Arkansas Department of Industrial Engineering Outstanding Researcher, 2015
- University of Arkansas Department of Industrial Engineering Outstanding Faculty Advisor (selected by graduate students), 2015
- University of Arkansas Department of Industrial Engineering Outstanding Faculty Advisor (selected by graduate students), 2016
- National Science Foundation CAREER Award, 2016
- Arkansas Academy of Industrial Engineers (AAIE) Outstanding Faculty Member, 2016

- Institute of Industrial & Systems Engineering (IISE) Logistics and Supply Chain Division Teaching Award, 2016
- University of Arkansas Department of Industrial Engineering Outstanding Teacher, 2016
- *IISE Transactions on Healthcare Systems Engineering* Best Paper Award, 2017
- John. L. Imhoff Chair in Industrial Engineering, Department of Industrial Engineering, University of Arkansas, 2017-2018
- University of Arkansas Department of Industrial Engineering Outstanding Teacher, 2018
- University of Arkansas Department of Industrial Engineering Best Teacher (selected by undergraduate students), 2018
- Selected as finalist for Production and Operations Management Society (POMS) College of Humanitarian Operations and Crisis Management (HOCM) Best Paper Competition with former graduate student co-author Emre Kirac, 2018
- Inducted into the Arkansas Academy of Industrial Engineers, 2019
- University of Arkansas College of Engineering Rising Teacher Award, 2019

Awards by Supervised Students

- The Arkansas Alpha Chapter of Alpha Pi Mu won 3rd place in the 2011 National Outstanding Chapter Competition
- The Arkansas Alpha Chapter of Alpha Pi Mu won 2nd place in 2012 National Outstanding Chapter Competition
- Graduate student Jessica Spicer was awarded 1st place in the 2012 From Abstract to Contract Graduate Student Research Competition at the University of Arkansas
- The Arkansas Alpha Chapter of Alpha Pi Mu won 5th place in 2013 National Outstanding Chapter Competition
- Undergraduate honors student Katy Accurso was awarded an Honors College Research Grant in 2013
- Undergraduate honors student Yulong Su was awarded an Honors College Research Grant in 2013
- The Arkansas Alpha Chapter of Alpha Pi Mu won 3rd place in 2014 National Outstanding Chapter Competition
- "Growing Pains" teaching case selected as finalist in INFORMS Case Competition with graduate student co-author Mina Hadiannassar, 2014
- Won 2nd place in INFORMS Annual Meeting Interactive Sessions Competition with graduate student co-author Emre Kirac, 2014
- The Arkansas Alpha Chapter of Alpha Pi Mu won 4th place in 2015 National Outstanding Chapter Competition
- Doctoral student Emre Kirac won the University of Arkansas Department of Industrial Engineering Graduate Research Award, 2015
- Doctoral student Emre Kirac won the University of Arkansas Department of Industrial Engineering Outstanding Teaching Assistant Award, 2016
- Doctoral student Emre Kirac won the University of Arkansas Department of Industrial Engineering Outstanding Graduate Student Award, 2016
- Aliyah Conley won 2nd place in Arkansas Louis Stokes Alliance for Minority Participation Spring Research Conference Poster Competition, 2016
- Brooks Walker and Luke Turner won 1st place in the Public Safety Track of the University of Arkansas Freshman Engineering Program 8th Annual Honors Research Symposium for their poster entitled *Mapping Social Data for Disaster Relief Response*, 2016

- Anna Hudgeons was awarded a SURF Award in 2016
- Olivia Goss was awarded an Honors College Research Grant in 2017
- Justin Taylor was awarded an Honors College Research Grant in 2017
- Alexander Johnson was awarded a SURF Award in 2018
- Doctoral student Erin Mullin won a scholarship from the Arkansas Academy of Industrial Engineering, 2018
- Doctoral student Erin Mullin was selected for the RISE Bridge Program at the University of Arkansas, 2018
- Master's student Justin Taylor was selected for the RISE Bridge Program at the University of Arkansas, 2018
- Undergraduate student Zachariah Neumeier won Overall Best Project in the University of Arkansas Freshman Engineering Program 11th Annual Honors Research Symposium for his research entitled *Quantifying Strategic National Stockpile (SNS) Supply Transport Time for In-Home Dispensing in Public Health Emergencies*, 2019

Professional Affiliations

Member, Institute of Industrial and Systems Engineers (IISE)
Member, Alpha Pi Mu Industrial Engineering Honor Society
Member, Institute for Operations Research and Management Science (INFORMS)

Ashlea Bennett Milburn, PhD

Vita

GREGORY S. PARNELL, Ph. D., CSEP
Professor of Practice
Director, M.S. in Operations Management Program
Director, M.S. in Engineering Management Program
Department of Industrial Engineering
4207 Bell Engineering Center
University of Arkansas
Fayetteville, AR 72701
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PROFESSIONAL SUMMARY

TEACHING

Director, M.S. in Operations Management and M.S. in Engineering Management, and Professor of Practice, Department of Industrial Engineering, College of Engineering, University of Arkansas. Previous academic positions: U.S. Military Academy at West Point (Professor Emeritus), U.S. Air Force Academy (Distinguished Visiting Professor), Virginia Commonwealth University, and the Air Force Institute of Technology (AFIT). Served as the first Class of 1950 Chair of Advanced Technology at West Point and Department Head at AFIT.

RESEARCH

Received $2.5 M research funding. Publications in leading archival journals and conference proceedings; editor, Trade-off Analytics textbook, lead editor for Wiley Systems Engineering text (2 editions); lead author for Wiley Handbook of Decision Analysis; and author of 20 book chapters. Current research is on decision and risk analysis, trade-off analyses for improved systems decision-making, and intelligent adversary decision and risk analysis.

PROFESSIONAL SERVICE

Serve on three editorial boards and referee for several journals. Previous service includes: President of the Decision Analysis Society of the Institute for Operations Research and Management Science (INFORMS); President of the Military Operations Research Society (MORS); Editor of the Military Operations Research journal; and board of Society for Decision Professionals (SDP).

Served on four National Academies studies; chair of Committee on the Review and Update of Bureau of Safety and Environmental Enforcement Offshore Oil and Gas Operations Inspection Program (2018-19), chair of Methodological Improvements to the DHS's Biological Agent Risk Analysis (2007-8), member of Metrics for Cooperative Threat Reduction Committee (2011-12), and member of Evaluating the Effectiveness of the Global Nuclear Detection Architecture Committee (2012-13). Participant in eight National Security Agency Advisory Board panels to advise NSA senior leaders since 911.

AWARDS

Several professional awards including Frank P. Ramsey Medal, Distinguished Contributions, INFORMS Decision Analysis Society (2014) and Wanner Award, Outstanding Contributions to Military Operations Research, MORS (2013). Elected Fellow of MORS, INFORMS, International

Committee on Systems Engineering (INCOSE), SDP, and Lean Systems Society.   West Point Professor Emeritus (2017).

EDUCATION

Ph.D., Engineering-Economic Systems, Stanford University, 1985
M.S., Systems Management, University of Southern California, 1980
M.E., Industrial & Systems Engineering, University of Florida, 1974
B.S., Aerospace Engineering, State University of New York at Buffalo, 1970

ACADEMIC EXPERIENCE

Professor of Practice, 2019 – present
Director, M.S. in Engineering Management, Department of Industrial Engineering, University of Arkansas, 2017 –
Director, M.S. in Operations Management Program, Department of Industrial Engineering, University of Arkansas, 2014 –
Research Professor, Department of Industrial Engineering, University of Arkansas, 2014 -2019
Visiting Professor of Industrial Engineering, Department of Industrial Engineering, University of Arkansas, 2013-2014
Professor of Systems Engineering, Department of Systems Engineering, USMA, 2003- 2013
Distinguished Visiting Professor, Department of Management, U.S. Air Force Academy, 2011-2012
Class of 1950 Chair of Advanced Technology, USMA, 1999-2005
Associate Professor, Systems Engineering Department, USMA, 1999-2003
Associate Professor, Mathematical Sciences Department, VCU, 1998-1999
Assistant Professor, Mathematical Sciences Department, VCU, 1995-1998
Head & Assistant Professor, Operational Sciences Department, AFIT, 1993-1995
Part-time Instructor, University of Southern California Systems Management Program (later managed by Capitol University) in Washington, DC, 1989-1992
Assistant Professor, Operational Sciences Department, AFIT, 1985-1988
Senior Fellow, National Defense University, 1988-1989
Fellow, Center for International Security & Arms Control, Stanford University, 1984-85

COURSES TAUGHT (33 Courses)   (* New courses developed)

Undergraduate Courses
INEG 4433, Systems Engineering and Management
INEG 4443, Project Management
INEG 4904, Industrial Engineering Design
OR310, Systems Analysis
SE310, Introduction to Systems Engineering
SE 300, Introduction to Systems Engineering *
SE 301, Fundamentals of Engineering Design and Systems Management *
SE 385, Decision Analysis
SE 401, Introduction to Systems Design
SE 402, Systems Design I
SE 403, Systems Design II

SE 420, Production Operations Management
SE 489, Independent Study
EM 384, Analytical Methods for Engineering Management *
EM 381, Engineering Economy
MAT 327, Mathematical Modeling *
HON 399, Multiple Objective Decision Analysis *
HON 399, Decision Analysis *

Graduate Courses
INEG 6443, Advanced Decision Analysis *
OMGT 5003, Introduction to Operations Management
INEG/OMGT 5443, Decision Models
MAT 643, Decision & Risk Analysis *
MAT 647, Multiple Objective Decision Analysis *
MAT 691, Special Topics in Mathematics: Multiattribute Utility Theory *
MAT 641, Mathematical Programming
MAT 527, Mathematical Foundations of Operations Research I
STA 503, Introduction to Stochastic Processes
OPER 645, Decision Analysis *
OPER 646, Environmental Decision & Risk Analysis *
OPER 520, Probabilistic Modeling
OPER 555, Knowledge Systems Engineering *
OPER 562, Introduction to Management Science
OPER 592, Space Operations Planning
OPER 655, Artificial Intelligence & Operations Research *
OPER 666, Systems Simulation
OPER 763, Stochastic Methods in Operations Research
EENG 592, Artificial Intelligence
SSM 525, Probabilistic Decision-Making
SSM 553, Systems Acquisition Management

REFEREED PUBLICATIONS (51 publications in 20 journals) *Student

1. *Specking, E., Cottam, B., Parnell, G., Pohl, E., Cilli, M., Buchanan, R., Wade, Z., and Small, C., "Assessing Resilience via Multiple Measures," *Risk Analysis*, Vol. 39, No. 9, 2019, pp. 1899-1912.
2. *Colin Small C., Parnell, G.S., Pohl, E., Goerger, S. R., Cilli, M., Specking, E., "Demonstrating Set-Based Design Techniques: A UAV Case Study," *Defense Modeling and Simulation*, Online First, September 10, 2019, pp. 1-17
3. *Wade Z, Goerger, S., Parnell, G., Pohl, E., and Specking, E., "Incorporating Resilience in an Integrated Analysis of Alternatives", *Military Operations Research Journal*, 2019, Vol 24 No 2 pp. 5-16.
4. *Cottam, B., Specking, S., Small, C ., Pohl, E., Parnell, G., and Buchanan, R., 'Defining Resilience for Engineered Systems," *Engineering Management Research*, Vol. 8, No. 2, August 2019
5. *Wade, Z., Parnell, G.S., Goerger, S., Pohl, E., & Specking, E., "Convergent Set-Based Design for Design of Complex Resilient Systems," *Environment Systems and Decisions*, 2019, Vol 39, No 2, pp.118-127

6. *De Icaza, R. R., Parnell, G. S., & Pohl, E. A., "Gulf Coast Port Selection using Multiple Objective Decision Analysis", *Decision Analysis*, 2019, Vol 16, No .2, pp. 87-104.
7. *Specking, E., Parnell, G., Pohl, E., and Buchanan, R., "Early Design Space Exploration with Model-Based System Engineering and Set-Based Design," *Systems*, 2018, Vol 6, No 4.
8. Buchanan, R.K., Goerger, S.R., Rinaudo, C.H., Parnell, G., Ross, A., and Sittlerle, V., "Resilience in Engineered Resilient Systems," *The Journal of Defense Modeling and Simulation: Applications, Methodology, Technology*, by the Society for Modeling & Simulation International (29 May 2018). http://journals.sagepub.com/doi/full/10.1177/1548512918777901
9. *Specking, E., Whitcomb, C., Parnell, G., Goerger, S., Pohl, E., Kundeti, N., "Literature Review: Exploring the Role of Set-Based Design in Trade-off Analytics," *Naval Engineers Journal*, American Society of Naval Engineers, Volume 130, Number 2, 1 June 2018, pp. 51-62.
10. *De Icaza, R. R., Parnell, G. S., Container Port Selection in West Africa: A Multi-Criteria Decision Analysis, *Engineering Management Research*, Vol. 7, No. 1; 2018
11. *Cilli, M., Parnell, G., Cloutier, R., and Zighd, T., "Measuring Perceived Risk of Pitfalls Associated with Systems Engineering Tradeoff Analyses," *Engineering Management Research*, Vol. 6, No. 1, 2017, pp. 68-83.
12. *Cilli, M., Parnell, G., Cloutier, R., and Zighd, T., "A System Engineering Perspective on the Revised Defense Acquisition System," *Systems Engineering,* Vol 18, Issue 6, November 2015, pp. 584-603.
13. *Hilliard, H., Parnell, G., and Pohl E., "Evaluating the Effectiveness of the Global Nuclear Detection Architecture Using Multiobjective Decision Analysis," *Systems Engineering*, Vol 18, No 5, 2015, pp. 441-452.
14. Parnell, G., Butler, R., Wichmann, S., Tedeschi, M., & Merritt, D., Air Force Cyberspace Investment Analysis, *Decision Analysis*, Vol 12, No 2, 2015, pp. 81–95
15. Parnell, G. S., Hughes, D. W., Burk, R. C., Driscoll, P. J., Kucik, P., Morales, B. L., & R. Nunn, L. R., Survey of Value-Focused Thinking: Applications, Research Developments, and Areas for Future Research, *Multi-Criteria Decision Analysis*, Vol 20, 2013. Pp. 49–60.
16. Parnell, G. S., Buckley, M., Ernesto, A., McGrath, D., Miller, M., Acquisition Program Information Assurance Assessment Model, *Military Operations Research,* Vol 16, No. 4, 2011, pp. 41-56.
17. Merrick, J. and Parnell, G., A Comparative Analysis of PRA and Intelligent Adversary Methods for Counterterrorism Risk Management, *Risk Analysis*, Vol 31, No 9, 2011, pp. 1488-1510.
18. Geis, J. P. II, Parnell, G. S., Newton, H., Bresnick, T. A., "Towards Blue Horizons," *Interfaces*, June-July 2011, Vol 41, No 4. Pp. 338-353.
19. Dees, R., Dabkowski, M., and Parnell, G., "Decision-Focused Transformation of Additive Value Models to Improve Communication," *Decision Analysis*, June 2010, Vol 7, pp. 172-184
20. Parnell, G.S., Smith, C. M., Moxley, F. I., Intelligent Adversary Risk Analysis: A Bioterrorism Risk Management Model, *Risk Analysis*, January 2010, pp 32-48.
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Buckshaw, D.L., Parnell, G.S., Unkenholz, W.L., Parks, D.L., Wallner, J.M., & Saydjari, O.S. (2004) Mission Oriented Risk and Design Analysis of Critical Information Systems. IDI Technical Report 2004-02, Contract Number MDA904-02-D-0402

Buckshaw, D. L., Parnell, G. S., Unkenholz, W. L., Parks, D. L., Wallner, J. M. and Saydjari, O. S., *Mission Oriented Risk and Design Analysis of Critical Information Systems*, Technical Report 2004-03, Innovative Decisions Inc., September 30, 2004

Buckshaw, D. L., Parnell, G. S., Unkenholz, W. L., Parks, D. L., *A Comparison of Aggregation Techniques for Mission Oriented Risk and Design Analysis (MORDA) Attack Values*, Technical Report 2004-04 Innovative Decisions Inc., September, 2004

Parnell, G., Harris, J. Hoops, B. Gardner, S., and Mounts, R., *BRAC 2005 Implementation Decision Support Tools*, ,Operations Research Center Technical Report, DSE-TR-0409, DTIC # ADA-426284, United States Military Academy, August 2004.

Stokes B., Parnell, G. S., & Klimack, W. K., *Alternative Resource Allocation Techniques*, Operations Research Center Technical Report, DSE-TR-02-05, DTIC # ADA-405460, United States Military Academy, August 2002

Engelbrecht, J., Parnell, G., Szafranski, R., and Westphal, D., *Future Value Analysis: NRO Technology Enterprise Value Model*, Toffler Associates, Technical Report for the National Reconnaissance Office, December 1999

Parnell, G., Kloeber, J., Westphal, D., Fung, V., *INEEL Subsurface Disposal Area CERLCA-based Decision Analysis for Technology Screening and Remedial Alternative Evaluation*, Toffler Associates Technical Report, Idaho National Environmental Engineering Laboratory, Subcontract No. K99-568044, Lockheed Martin Idaho Technologies Company (LMITCO), September 30, 1999.

Parnell, G., Jackson, J., Kloeber, J., and Deckro, R., *Improving DOE Environmental Management: Using CERCLA- Based Decision Analysis for Remedial Alternative Evaluation in the RI/FS Process*, Technical Report, VCU-MAS-99-1, Department of Mathematical Sciences, Virginia Commonwealth University, April 15, 1999

Parnell, G., Jackson, J., Kloeber, J., and Deckro, R. *Improving DOE Environmental Management: Using CERCLA- Based Decision Analysis for Remedial Alternative Evaluation in the RI/FS Process*, Technical Report, VCU-MAS-97-2, Department of Mathematical Sciences, Virginia Commonwealth University, October 2, 1997

Frimpon, M. F., Parnell, G. S., and Barnes, J. A., *Nuclear Waste Remediation: In-Situ Vitrification Risk Analysis,* Technical Report VCU-MAS-97-3, Department of Mathematical Sciences, Virginia Commonwealth University, October 8, 1997

Barnes, J. and Parnell, G., *A Comparative Evaluation of the System Cost Model (SCM) and Other Cost, Performance, and Development Risk Analysis Methods*, Department of Mathematical Sciences and Center for Environmental Studies, Virginia Commonwealth University, Report

Number CES-MSE-96-3, Integrated Economic Analysis Program**,** Subcontract #96-C337-CR, MSE Technology Applications, Inc., September 1, 1996

     Parnell, G. , *Cost And Development Risk Guidance For Principal Investigators In The Department Of Energy's Office Of Science And Technology (EM-50),* Department of Mathematical Sciences and Center for Environmental Studies, Virginia Commonwealth University, Report Number CES-MSE-96-2, Integrated Economic Analysis Program**,** Subcontract #96-C337-CR, MSE Technology Applications, Inc., August 31, 1996

     Auclair, P., Parnell, G., Stytz, M., *Air Force Modeling Simulation and Analysis*, Center for Modeling, Simulation, and Analysis, Air Force Institute of Technology, August 1993

MAJOR CONTRIBUTION TO REPORTS WITHOUT IDENTIFIED AUTHORS

     Homeland Security Risk Assessment, Volume I. Setting, Homeland Security Institute, RP05-024-01a, May 2006

     Homeland Security Risk Assessment, Volume II. Methods, Techniques, and Tools, Homeland Security Institute, RP05-024-01b, May 2006

     Department of Defense Report to the Defense Base Closure and Realignment Commission, May 2005, *Vol III, Department of the Army Analysis and Recommendations BRAC 2005,* Appendix B, Military Value Analysis.

OTHER PUBLICATIONS (12 publications)

     Parnell, G. S. and Cilli, M. V., Integrated Trade-Off Analytics, Systems Engineering Newsletter (SyEN), Project Performance International, April, 2018

     Parnell, G. S., Decision Analysis in One Chart, Decision Line, Newsletter of the Decision Sciences Institute, May, 2009

     Ewing, P. L., Tarantino, W., Dell, R., and Parnell, G. S., "Army BRAC 2005: Analysis Transformation," Phalanx, June 2006

     Parnell, G. S., The INFORMS Student Newsletter, Spotlight on Subdivisions of INFORMS: The Decision Analysis Society – The Science of Better (Decisions), Vol 9, Summer/Fall 2005

     Kwinn, M. J., Edward Pohl, Gregory Parnell, Patrick Magras, Richard Richkowski., Building Achilles: Vulnerabilities of the Future Combat System. A White Paper Summary of 16-17 January 2002 Workshop. West Point, New York: Department of Systems Engineering, January 2002

     Parnell, G., Ezell, B., Haimes, Y., Lambert, J., Schussell, K., & Solcoski, M., "Designing a OOTW Knowledge Hierarchy for a OOTW Decision Support System for Military Planners," Phalanx, January 2001

     Parnell, G., "Space-Imaging and Virtual Modeling & Simulation for Education," Beyond 2000 Column for Imaging Notes, Spring 2000

     Parnell, G., Kelso, T., Burk R., Sovaiko, S., "A Methodology to Assess the Contribution of the Global Positioning System to Air Combat Outcomes," Air Force Test and Evaluation Center, AFOTEC RP 190-1, Volume 6, Number 1, July 1996

     "A Methodology for Analyzing Global Reach--Global Power," White Paper, AF Center for Studies & Analyses, co-authored with R. Eilers, 1990

     "Improving Decision Support for Air Force Resource Allocation," White Paper, AF Center for Studies & Analyses, 1992

     <u>Large Bilateral Reductions in Superpower Nuclear Weapons</u>, Ph.D. Dissertation, Stanford University, July 1985

Inadvertent War in Europe: Crisis Simulation, Center for International Security & Arms Control, Stanford University, co-authored with Alexander George, June 1985

WORKING PAPERS

Snyder, F. J., Parnell, G. S., & Klimack, W. K., "Modeling the Cost Objective in Multiple Objective Decision Analysis, United States Military Academy at West Point, November 2002

SPONSORED RESEARCH (Total $2.103M)

Engineering Resilient Systems. Engineer Research and Development Center, perform research on engineering resilient systems including developing trade-off analytics to quantify resilience to improve the DoD Analysis of Alternatives process and demonstrate the use of set-based design concepts. (140k+189k) [2016- 2018]

Army Stationing Military Value Analysis. Conducting research for the Center for Army Analysis on military value analyses for Army stationing. ($111 K) [2014 – 2016]

Small Unmanned Aviation Systems (UAS). Conducted capstone research on min UASs for the Army's Aviation and Missile Research, Development, and Evaluation Center at Redstone Arsenal in Huntsville, AL. Developing simulation models to evaluate the effectiveness of swarming UAS. ($20k) [2012 – 2013]

Air Force Space Command Cyber Model. Conducted research on Air Force Space Command cyberspace investment planning for Air Force's 3.5B annual cyberspace budget. Developed the Air Force Cyber Value Model using multiple objective decision analysis and probabilistic modeling to assess Air Force cyberspace programs and guided model implementation for cyberspace FY15-24 resource allocation decision making. [2011-2012]

Ground Combat Vehicle Trade Studies. Provided decision analysis support to Army Armament Research and Development Center for development of the Armament Analytics Multiple Objectives Decision Tool. ($15k) [2011-2012]

Mini Unmanned Aviation Systems (UAS). Conducted capstone research on min UASs for the Army's Aviation and Missile Research, Development, and Evaluation Center at Redstone Arsenal in Huntsville, AL. Developing simulation models to evaluate the effectiveness of swarming UAS. ($80k) [2010 – 2011]

Systems of Systems Engineering Cost Benefit Analysis. Performed a cost benefit analysis for the Assistant Secretary of the Army Acquisition, Technology and Logistics, ASA (AT&L) office of Systems of System Engineering office. The mission of the SoSE office is to architect and enable the incremental delivery of relevant, integrated and affordable capabilities in support of the Army's modernization strategy and Army Force Generation model. We assessed the benefits and costs of five alternative manning levels for the office ($20k).

Ground Combat Vehicle (GCV) Analysis of Alternatives. Conducted review of the AoA methodology for TRAC Ft Leavenworth and facilitated the development of a new value model

using Value-Focused Thinking and multiobjective decision analysis. Provided decision analysis technical guidance to the AoA team leaders. Gave presentation at the first meeting with stakeholders to implement the new value model.

Army Utilities Privatization Budget Estimate Tool. The Army resource community challenged the budget for the Army Utilities Privatization (UP) Program. ASA(I&E) and Installations Command required a new budget estimate that was more credible. We developed a UP budget estimate tool using cost estimating relationships based on installation system data from Army databases.   An Excel tool was provided to calculate the cost, develop budget options, and perform sensitivity analysis. ($250k), [2008-2010]

Swarming Small Unmanned Aviation Systems (UAS). Conducting capstone research on arming small UASs, swarming UASs, and mini UASs for the Army's Aviation and Missile Research, Development, and Evaluation Center at Redstone Arsenal in Huntsville, AL. Developing simulation models to evaluate the effectiveness of swarming UAS. ($200k) [2008 – 2010]

Weaponization of Lightweight Unmanned Aviation Systems (UAS). Conducted capstone research project for the Army's Aviation and Missile Research, Development, and Evaluation Center at Redstone Arsenal in Huntsville, AL. Developed and evaluation lethal and nonlethal weapons concepts for small UASs in urban operations. ($50k) [2007 – 2008]

Hypersonic Technologies for Counter Rockets, Artillery, and Mortar. Conducted two capstone research projects for the Army's Aviation and Missile Research, Development, and Evaluation Center at Redstone Arsenal in Huntsville, AL. The first project involves a technology assessment and life cycle cost model for hypersonic technologies. The second project involves a capability assessment for the use of hypersonic, directed energy, and conventional technologies for countering rockets, artillery, and mortars. ($50k) [2006 – 2007]

Army Residential Community Imitative Study.   Conducted a study of the Residential Communities Initiative (RCI) Portfolio and Asset Management (PAM) process to identify potential conflicts of interest, assess if the Army is getting the best value for its RCI resources, benchmark with private real estate developers, and assess current RCI training program. Recommendations were presented to ASA(I&E) and many of the recommendations were implemented. [2005 – 2006]

Army Installation Management Agency Study. *Study of the Installation Management Agency CONUS Regional Structure.* At the request of the Assistant Secretary of the Army for Installations and Environment, ASA (I&E), conducted an organizational analysis of the IMA continental United States regional structure for the ASA(I&E) and the Assistant Chief of Staff for Installation Management to evaluate the effectiveness and efficiency of the current structure and provide recommendations for potential alternative structures. Recommendations presented to ASA(I&E). [2004]

Army Base Realignment and Closure (BRAC) 2005 Study. Performed stakeholder analysis with senior army leader and developed develop Army Military Value Methodology. This research provided BRAC 2005 infrastructure analysis support to Deputy Assistant Secretary of the Army (Infrastructure Analysis) and the Total Army Basing Study (TABS) Group. A key task was

the development and implementation of the Installation Military Value model to analyze the military value of Army infrastructure for BRAC 2005. FY 03-05 funding was $300k. [2003 – 2005]

Land Warrior Soldier System, *Storage Systems and Infantry Capability Model.* Our research has two objectives. The first objective was to develop a methodology for the design and analysis of Land Warrior equipment storage systems. The methodology was developed and presented to the program office. The second objective is to develop an analytical model to evaluate the technology alternatives for the Land Warrior system. This research will be conducted in AY03. The project was funded by the Program Element Office: Soldier System. Funding has been $20k. [2001 – 2003]

Army G-3 Operations, *Prioritization of the Army Budget*. Our research has two objectives. The first objective is to develop techniques to improve Army POM prioritization process. The techniques must be an objective, credible, and traceable *analytical process and use* optimization to determine the best program. The second objective is to develop a methodology to effectively capture Army senior leader guidance. The methodology should not be labor intensive for senior leader and should use the Army resource framework construct. The project was funded by the Department of the Army for $25k. [2001 – 2003]

National Ground Intelligence Center, *Intelligence Support to Operations other Than War (OOTW),* OOTWs have become an increasing challenge to military and intelligence planners. The Intelligence Community does not know with certainty where future OOTWs will occur, what the operation will involve, when they will occur, or how much advance warning will be provided. To prudently deal with these challenges, the Army's National Ground Intelligence Center (NGIC) has developed a plan to systematically identify knowledge needs to support future OOTWs. The NGIC team includes researchers from the Center for Risk Management of Engineering Systems at the University of Virginia and the Department of Systems Engineering at the United States Military Academy at West Point. We developed a preliminary knowledge framework for collection of intelligence information to help national security planners plan for future OOTWs. Total funding was $80,000 over two years [1999- 2001]

National Science Foundation, *Multiple Objective Decision Analysis of Upham Brook Watershed*: Developed an urban planning model to apply to a polluted watershed flowing from a declining inner city to a growth-oriented county. A Multiple Objective decision analysis model was developed to assess alternative urban land management practices to improve stream water quality and enhance species richness and aquatic diversity. Model inputs cover physical infrastructure, catchment hydrology, aquatic biodiversity, resident attitudes and practices, and local governmental policy. The model includes biological processes that sustain plant and animal life, social processes that foster community growth, human psychology behind sustaining health-threatening behaviors, and the political momentum that generates institutional barriers to new land management policies. Total funding was $500,000 over three years. [1998-2000].

MSE Technology Applications Inc. *Decision & Risk Analysis Project.* VCU Principal Investigator for research to establish a decision and risk analysis methodology for the EM-50 Focus Areas in the Department of Energy's (DOE) Environmental Management Program. Decision & risk analyses are being performed for Idaho National Environmental Engineering Laboratory (INEEL) and the Paducah sites. Three technical reports were completed in 1996 involving cost and risk guidance for EM-50s Principal Investigators, lessons learned from

commercialization of new environmental technologies, comparison of environmental cost models. Two technical reports were completed in 1997 on a CERCLA-based Decision and Risk analysis methodology and a technology risk analyses for INEEL. Helped EM-50 Office of Science & Technology develop a Multiple Objective value model that was successfully used to prioritize Focus Area Work Packages for the FY 00 budget. Currently updating the Work Package Ranking System for use in FY 01 budget. Total funding was $230,000 [1996-1999].

Computer Sciences Corporation, *Development of an Air and Missile Defense Joint Mission Area Architecture Multiple Objective Value/Cost Analysis and Assessment Tool*. VCU Principal Investigator for research to develop a Multiple Objective decision analysis methodology for analysis of ballistic missile defense architectures. The purpose of the tool is to conduct Air and Missile Defense architecture, architecture functions, systems, and system function trade-off analyses and assessments. Total funding was $85,000 [1998-1999].

CONTINUING EDUCATION COURSES TAUGHT (74 courses)

1. "Systems Engineering," Principal Financial Group, 7-9 Aug 2019, Des Moines, IA
2. "Multiple Objective Decision Analysis," 29 Jul – 1 Aug, 2019, Open Enrollment, Innovative Decisions Inc., Vienna, VA
3. "Systems Engineering," Principal Financial Group, 6-8 Jun 2019, Des Moines, IA
4. "Systems Engineering," Principal Financial Group, 16-18 Dec 2018, Des Moines, IA
5. "Multiple Objective Decision Analysis," 4-8 Jun, 2018, Marine Corps Concept Development Command, Quantico, VA
6. "Systems Decision Making with Multiple Objective Decision Analysis," 18-21 May 2015, NAVAIR Systems Command, Patuxent River, MD
7. "Multiple Objective Decision Making with Value-Focused Thinking," 21-24 Aug 2014, NAVAIR Systems Command, Patuxent River, MD
8. "Decision Analysis for Policy Analysis," 14-18 Jul 2014, Argonne National Laboratory, Lemont, IL.
9. "Introduction to Decision Analysis for Policy Analysis," 11 Jul 2014, Argonne National Laboratory, Lemont, IL.
10. "Systems Decision Making," 23-27 Jun 2014, NAVAIR Systems Command, Patuxent River, MD
11. "Multiple Objective Decision Analysis with Value-Focused Thinking," 19-22 Aug 2013, Marine Corps Systems Command, Quantico, VA
12. "Multiple Objective Decision Analysis with Value-Focused Thinking," 12-16 Aug 2013, Marine Corps Concept Development Command, Quantico, VA
13. "Multiple Objective Decision Analysis with Value-Focused Thinking," 23-26 Jul 2012, Marine Corps Systems Command, Quantico, VA
14. "Multiple Objective Decision Analysis with Excel," 25-29 Jul 2011, US Army Logistics University, Fort Lee, VA
15. "Value-Based Decision Making for Systems Engineering and Management," 31 May -3 Jun, 2011, Lockheed-Martin, Palmdale, CA

16. "Value-Based Decision Making for Systems Engineering and Management," 14-17 Mar, 2011, Lockheed-Martin Aeronautics, Ft Worth, TX
17. "Value-Based Decision Making for Systems Engineering and Management," 30 Nov – 3 Dec 2010, Lockheed-Martin, Suffolk, VA with Pat Driscoll
18. "Multiple Objective Decision Analysis and Value-Focused Theory," 21- 24 Sep 2010, Marine Corps Systems Command, Quantico, VA with Pat Driscoll
19. "Value-Focused Thinking using Multiple Objective Decision Analysis," 26-30 Jul 2010, United States European Command, Patch Barracks, Stuttgart, Germany
20. "Value-Focused Thinking using Multiple Objective Decision Analysis," 19-23 Jul 2010, US Army Logistics University, Fort Lee, VA
21. "Value-Based Decision Making for Systems Engineering and Management," 18-20 May, 2010, Lockheed-Martin Aeronautics, Ft Worth, TX
22. "Value-Focused Thinking using Multiple Objective Decision Analysis," March 15-18, 2010, Lockheed Martin Missiles and Fire Control, Dallas, TX
23. "Value-Focused Thinking using Multiple Objective Decision Analysis," October 19, and October 23, and November 23, 2009, MIT Lincoln Laboratories, Burlington, MA
24. "Value-Focused Thinking using Multiple Objective Decision Analysis," 6, 10, and 19 Nov 2009, Lockheed-Martin Aeronautics, Ft Worth, TX
25. "Value-Focused Thinking using Multiple Objective Decision Analysis," Aug 3-7, 2009, Center for Army Analysis, Ft Belvoir, VA
26. "Strategic Decision Analysis," Jul 15-17, 2009, UNI Strategic, Novotel Singapore Clarke Quay, Singapore
27. "Value-Focused Thinking using Multiple Objective Decision Analysis," Jul 6-10, 2009, Marine Corps Systems Command, United States Marine Corps, Quantico, VA
28. "Value-Focused Thinking using Multiple Objective Decision Analysis," Jun 1-5, 2009, Lockheed-Martin Aeronautics, Marietta, GA
29. "Value-Focused Thinking using Multiple Objective Decision Analysis", March 16-20, 2009, US Army Logistics Management College, Fort Lee, VA
30. "Systems Decision Process," Jan 4-5, 2009, U.S. Army Training and Doctrine Command (TRADOC), Ft Eustis, VA
31. "Decision Analysis for Leaders, November 21, 2008, Center for Devices and Radiological Health, Food and Drug Administration, Rockville, MD
32. "Multiple Objective Decision Analysis using Value-Focused Thinking," July 28-August 1, 2008, US Army Logistics Management College, Hoffman Building, Alexandria, VA
33. "Multiple Objective Decision Analysis using Value-Focused Thinking," June 23-24, 2008, Naval Surface Warfare Center, Dahlgren, VA
34. "Value-Focused Thinking using Multiple Objective Decision Analysis," June 2-6, 2008, Marine Corps Systems Command, United States Marine Corps, Quantico, VA
35. "Value-Focused Thinking using Multiple Objective Decision Analysis March 17-21, 2008, US Army Logistics Management College, Fort Lee, Virginia
36. "Systems Decision Process," March 13-14, 2008, National Security Agency, Ft Meade, MD, with Pat Driscoll

37. "Systems Decision Process," January 10-11, 2008, National Security Agency, Ft Meade, MD, with Pat Driscoll
38. "Systems Decision Process," October 30, 2007, National Security Agency, Ft Meade, MD, with Tim Trainor and Pat Driscoll
39. "Value-Focused Thinking and Multiple Objective Decision Analysis for Stakeholders and Analysts", August 1, 2007, Mitre Corporation, Colorado Springs, CO
40. "Value-Focused Thinking using Logical Decisions," February 14-16, 2007, Battelle Crystal City Operations, DC, with Gary Smith
41. "Value-Focused Thinking and Multiple Objective Decision Analysis, January 18 – February 7, 2007 (one day per week) Lockheed-Martin Missiles and Fire Control, Dallas, TX
42. "Value-Focused Thinking and Multiple Objective Decision Analysis", June 5-9, 2006, Marine Corps Operational Test and Evaluation Activity, Quantico, VA
43. "Value-Focused Thinking and Multiple Objective Decision Analysis," February 14-15, 2006, Applied Research Associates, Arlington, VA
44. "Value-Focused Thinking and Multiple Objective Decision Analysis, January 16-20, 2006, Lockheed-Martin Missiles and Fire Control, Orlando, FL
45. "Decision Analysis Skills," December 13-15, 2005, Aerospace Corporation, Chantilly, VA (Co-taught with Dennis Buede and Freeman Marvin)
46. "Advanced Value-Focused Thinking and Multiple Objective Decision Analysis," June 16-17, 2005, Johns Hopkins Applied Physics Lab, Laurel, MD
47. "Value-Focused Thinking and Multiple Objective Decision Analysis, June 13-15, 2005, Johns Hopkins Applied Physics Lab, Laurel, MD
48. "Value-Focused Thinking and Multiple Objective Decision Analysis, March 16-18, 2005, Johns Hopkins Applied Physics Lab, Laurel, MD
49. "Value-Focused Thinking for Capability-Based Planning," September 13-14, 2004, J-8, Joint Staff, The Pentagon, Washington, DC
50. "Multiple Objective Decision Analysis with Spreadsheets," July 12-16, 2004, Office of Aerospace Studies, Kirtland AFB, NM
51. "Multiple Objective Decision Analysis with Spreadsheets," June 7-11, 2004, Marine Corps Systems Command, United States Marine Corps, Quantico, VA
52. "Multiple Objective Decision Analysis with Spreadsheets," U.S. Army Logistics Management College, December 8-12, 2003, Center for Army Analyses, Ft Belvior, VA
53. "Multiple Objective Decision Analysis with Spreadsheets," November 3-7, 2003, Hosted by Mitre Corporation, Colorado Springs, CO
54. "Introduction to Operations Research with Spreadsheet Modeling," Five Modules (Introduction to OR for Senior Leaders, Single Objective Decision Analysis, Optimization, ORoject Planning, and Monte Carlo Simulation), October 22-24, 2003, National Security Agency, Fort Meade, MD
55. "Multiple Objective Decision Analysis with Spreadsheets," U.S. Army Logistics Management College, September 22-26, 2003, Warrior Preparation Center, Sembach, Germany
56. "Multiple Objective Decision Analysis with Spreadsheets," U.S. Army Logistics Management College, August 18-22, 2003, U.S. Army Recruiting Command, Ft Knox, KY

57. "Multiple Objective Decision Analysis with Spreadsheets," July 7-11, 2003, Office of Aerospace Studies, Kirtland AFB, NM

58. "Analysis of Alternatives using Multiple Objective Decision Analysis," May 28-30 May, 2003, National Security Agency, Fort Meade, MD

59. "Multiple Objective Decision Analysis with Spreadsheets," U.S. Army Logistics Management College, March 17-21, 2003, Center for Army Analyses, Ft Belvoir, VA

60. "Multiple Objective Decision Analysis and Economic Analysis," U.S. Army Logistics Management College, October 17-18, 2002, Air Education & Training Command, Randolph AFB, TX

61. "Analysis of Alternatives using Multiple Objective Decision Analysis," March 25-27, 2002, National Security Agency, Fort Meade, MD

62. "Analysis of Alternatives using Multiple Objective Decision Analysis," February 27 – 1 March, 2002, National Security Agency, Fort Meade, MD

63. "Multiple Objective Decision Analysis with Spreadsheets," US Army Logistics Management College, January 7-11, 2001, United States Marine Corps, Quantico, VA

64. "Analysis of Alternatives using Multiple Objective Decision Analysis," November 28-30, 2001, National Security Agency, Fort Meade, MD

65. "Introduction to Multiple Objective Decision Analysis for Senior Leaders," November 16, 2001, National Security Agency, Fort Meade, MD,

66. "Single Objective and Multiple Objective Decision Analysis," National Security Agency, June 25-27, 2001, Fort Meade, MD

67. "Multiple Objective Decision Analysis with Spreadsheets," US Army Logistics Management College, June 4-8, 2001, Army War College, Carlisle Barracks, PA

68. "Multiple Objective Decision Analysis with Spreadsheets," US Army Logistics Management College, January 8-12, 2001, Joint Warfare Analysis Center, Dahlgren, VA

69. "Multiple Objective Decision Analysis with Spreadsheets," US Army Logistics Management College, August 7-11, 2000, Kirtland AFB, NM

70. "Multiple Objective Decision Analysis with Spreadsheets," US Army Logistics Management College, June 5-9, 2000, Joint Warfare Analysis Center, Dahlgren, VA

71. "Multiple Objective Decision Analysis with Spreadsheets," January 25-29, 1999, Air Combat Command & Air Force Space Command, Norfolk, Virginia.

72. "Multiple Objective Decision Analysis with Spreadsheets," 99-002, December 14-18, 1998, US Army Logistics Management College, Fort Lee, Virginia.

73. "Multiple Objective Decision Analysis with Spreadsheets," 98-002, December 15-19, 1997, US Army Logistics Management College, Fort Lee, Virginia.

74. "Decision Analysis Using DPL and Spreadsheets," 97-002, January 27-31, 1997, US Army Logistics Management College, Fort Lee, Virginia.

PROFESSIONAL SOCIETY TUTORIAL PRESENTATIONS

1. Parnell, G., "Trade-off Analytics: Creating and Evaluating the Tradespace, " MORS Annual Meeting, 15 Jun 19, USAFA, Colorado Springs, CO
2. Parnell, G., "Trade-off Analytics: Creating and Evaluating the Tradespace, " INCOSE International Symposium, 8 July 18, Washington, DC
3. Parnell, G., "Trade-off Analytics: Creating and Evaluating the Tradespace, " MORS Annual Meeting, USMA, 18 Jun 18, West Point, NY
4. Parnell, G., "Decision Analysis for Risk Analysts," Society for Risk Analysis Annual Meeting, Salt Lake City, UT, December 5, 2010
5. Parnell, G., "Decision Analysis for Risk Analysts," Society for Risk Analysis Annual Meeting, Baltimore, MD, December 6, 2009
6. Parnell, G., "Intelligent Adversary Risk Analysis: Defender-Attacker-Defender Probabilistic Risk Analysis Models" 90 minutes, Risk-Informed Decision Making for HLS Resource Allocation Workshop, April 13, 2009
7. Parnell, G., "Systems Decision Making", International INFORMS Meeting, San Juan, Puerto Rico, 90 minutes, July 11, 2007
8. Parnell, G. and Driscoll, P., "Systems Decision Making", Military Operations Research Society (MORS) Tutorial Meeting, John Hopkins Applied Physics Laboratory, Laurel, MD, Seven hours, February 2007
9. Parnell, G. and Pohl, E. "Multiple Objective Decision Analysis for Systems Engineering," TIES Presentation, INCOSE, Orlando, FL, Three hours, June 2006,
10. Parnell, G. and Grobman, J., Value-Focused Thinking for Capability-Based Planning, Military Operations Research Society, One hour, June 2005,
11. Parnell, G., "Marketing Operations Research", Military Operations Research Society (MORS), Monterey, California, Three Hours, June 1998
12. Parnell, G., Seiford, L., and Mumpower, J., "Marketing Operations Research", Institute for Operations Research/Management Science (INFORMS), Montreal, Quebec, Four Hours, April 1998

PROFESSIONAL SERVICE

- **UNIVERSITY/DEPARTMENT/COMMUNITY SERVICE**

Member, UA Vice Provost for Distance Education Search Committee, 2019
Member, Distance Education Committee, College of Engineering, 2014 – present
Member, Undergraduate Committee, Department of Industrial Engineering, 2014 – present
Advisor, College of Engineering Strategic Planning Task Force, University of Arkansas, 2014
Program Advisor, Core System Engineering Sequence, Department of Systems Engineering 2012-2013
Facilitator for USMA Dean's Strategic Planning Offsite, October 22, 2010
Member, USMA Dean's Transition Team, 2010
Member, Mathematical Sciences Title 10 Professor Search Committee, 2009
Member, United States Military Academy Social Domain Committee, 2008 – 2011
Member, United States Military Academy Head Librarian Search Committee, 2008
Facilitator, Strategic Planning Offsite, West Point Garrison Commander and leadership Team, February, 2008

President, Parish Council, West Point Community Chapel, 2003 – present
Program Advisor, Information Systems Engineering, Department of System Engineering, 2003-
    2005
Chair, United States Military Academy Library Committee, 2000 – 2005
Program Director, Information Systems Engineering, Department of System Engineering, 2000 -
    2003
Chair, West Point Higher Ground Men's Ministry, 2000 – 2003
Member, USMA, Head Librarian Search Committee, 2001-2002
Member, USMA, EE&CS Academy Professor Search Committee - 2001
Member, USMA Information Technology Goal Team – 2001-2002
Member, USMA Academic Freedom Committee, 1999- 2000
Member, USMA Library Committee, 1999-2000
Member, USMA Ethics Committee, 1999-2000
Title 10 Faculty Search Committee, Department of Systems Engineering, 2000-2001
Title 10 Faculty Search Committee, Department of Systems Engineering, 1999-2000
Member, VCU Center for Environmental Studies Advisory Committee, 1997- 1999
Member, VCU Mathematical Sciences Dept, Executive Committee, 1997-1999
Member, VCU Center for Environmental Studies Internal Advisory Committee, 1996-1997
Member, VCU H&S College Promotion & Tenure Review Committee, 1996-1997
Member, VCU Mathematical Sciences Dept, Undergraduate Credentials Committee, 1995-1997

- **PROFESSIONAL ORGANIZATIONS/SERVICE**

Vice Chair, INCOSE Fellows Committee, July 2018 -
Participant, Expert Meeting on Structural Health Monitoring for Innovative Asset Management
    of Waterways Infrastructure: Technology and Decision Analysis conducted for the U.S.
    Army Corps of Engineers, Keck Center of the National Academies of Sciences,
    Engineering, and Medicine June 13-14, 2017
Co-Chair, Decision Analysis Working Group, INCOSE, 2017 -
INCOSE Fellows Selection Committee: 1 Dec 2016 – 30 Nov 2019
President, Department of Engineering and Management Assessment Committee, Instituto
    Superior Técnico/University of Lisboa, Lisbon, Portugal 2016
Member, West Point Department of Systems Engineering Advisory Board, 2016
Attendee, National Science Foundation, Future of Teaching Systems Engineering, 13-15 October,
    2015
Member, Decision Analysis Society Ramsey Medal Committee, 2015
Member, INCOSE Corporate Advisory Board, 2014-
Member, Decision Analysis Society Practice Award Committee, 2013-2014
Chair, INCOSE Doctoral Award Committee, 2013, 2014, 2015
Member, All of Government Approach to Chemical, Biological, Radiological, Nuclear and
    Explosive (CBRNE) Consequence Management Steering Committee, National Research
    Council, 2013- 14
Body of Knowledge and Curriculum to Advance Systems Engineering (BKCASE) Editorial
    Committee, (includes Guide to the Systems Engineering Body of Knowledge (SEBoK) and
    Graduate Reference Curriculum for Systems Engineering (GRCSE), 2013 -
Peer Reviewer, National Science Foundation, Civil, Mechanical and Manufacturing Innovation,
    2013
Member, Institute of Industrial Engineers, 2013 – present

Chair, Decision Analysis Best Practice Award Committee, 2012

Editorial Board, "Environment, Systems, and Decisions," Springer,   Igor Linkov and James Lambert, Co-Editors, 2012 - 2015

Advisory Editor for Decision and Risk Analysis, Wiley Series in Operations Research and Management Science, 2012 -

Member, Committee on Evaluating the Effectiveness of the Global Nuclear Detection Architecture, National Academy of Science, 2012 - 2013

Member, United States Air Force Academy Engineering Program Advisory Council, November 2011

Chair, Decision Analysis Society Publications Committee, 2010 - 2011

Member, Committee on Improving Metrics for the Department of Defense Cooperative Threat Reduction Program, National Academy of Science, 2010 – 2011

Member, Department of Homeland Security, Office of Science and Technology, Center for Risk Analysis, Operations Research, and Economics Peer Review Committee, 2010

Member, INCOSE Foundation Doctoral Award Committee, 2010 - 2011

Member, Governance Council for the new Society of Decision Professionals, 2009 -2014

Member, Editorial Board, Decision Analysis Journal, 2009 – present

Participant, National Security Agency Advisory Board (Compliance Panel) 2009 - present

Member, Decision Analysis Society Practice Award Committee, 2009-2010

Chair, Decision Analysis Journal and Editor Review Committee, 2009

Editorial Board, A Taylor and Francis Book Series, Complex and Enterprise Systems Engineering, 2008 - present

INFORMS Strategic Planning Committee, 2008-2011

Participant, National Security Agency Advisory Board (Technology Directorate Panel), 2007 - 2014

Participant, National Security Agency Advisory Board (Information Assurance Panel), 2007 - 2011

Associate Editor, INFORMS Decision Analysis Journal, 2007 – 2009

Guest Editor, Military Operations Research Special Issue on Value-Focused Thinking, 2008

Past President, Decision Analysis Society, INFORMS, 2006-2008

Member, Decision Analysis Society Ramsey Medal Review Committee, 2006-2007

Participant, National Security Agency Advisory Board (Architecture Panel), 2006-2007

Participant, National Security Agency Advisory Board (Data Center Panel), 2006-2007

Chair, National Research Council Study on Methodological Improvements to the Department of Homeland Security's Biological Agent Risk Analysis, 2006-2007

Member, Department of Homeland Security, Office of Science and Technology, Critical Infrastructure Protection Decision Support System, Technical Review Panel, 2006

Member, INFORMS Decision Analysis Journal Editor Search Committee, 2006

Member, Distinguished Review Board for the Air Force Institute of Technology's Center for Operational Analysis, 2005 - present

Participant, National Security Agency Advisory Board (Transformation Panel) 2005-2006

President, Decision Analysis Society, INFORMS, 2004-2006

Participant, National Security Agency Advisory Board (Technology Panel) 2003-2007

Vice President/President-Elect, Decision Analysis Society, INFORMS, 2002-2004

Participant, National Security Advisory Board (Signals Intelligence Directorate Technology Panel), 2001-2003

Member, INFORMS Subdivisions Council, 2002-2004

Council Member, Decision Analysis Society of INFORMS, 2000-2002

Advisor, MORS Decision Analysis Working Group, 1996-1998, 2000-2002

Editor, Military Operations Research, 1996-2001
Military Applications Society, Counselor at Large, 1998-2002
Member, International Council on Systems Engineering (INCOSE), 1999-present
Chairman, INFORMS Chapters Committee, 1999-2001
President, Richmond-Tidewater INFORMS Chapter, 1997-1998
Vice President, Richmond-Tidewater INFORMS Chapter, 1997
Treasurer, Richmond-Tidewater INFORMS Chapter, 1996-1997
Advisory Director, Military Operations Research Society, 1996-1998
Full Member, Institute for Operations Research/Management Science
Judge, INFORMS Decision Analysis Section, Student Paper Competition, 1993-1995
Decision Analysis Working Group Co-Chair, MORS Symposium, 1995-96
President, Military Operations Research Society, 1993-94
Vice President for Meeting Operations, Military Operations Research Society, 1992-93
Working Group/Composite Group Coordinator, MORS Symposium, 1991-1992
Director, Military Operations Research Society, 1989-94
Member, Military Operations Research Society, 1985-present

- **PROFESSIONAL JOURNAL REVIEWER/PAPER JUDGE**

INCOSE International Symposium, 2014, 2015
Operations Research, 2013
Conference on Systems Engineering Research (CSER) 2013
Systems Engineering, 1999 - present
Risk Analysis, 2001, 2006, 2007, 2010-present
Decision Analysis, 2004-present
Military Operations Research, 2001-present
MARA Student Decision Analysis Projects Judge, 2005-2006
Journal of Military Modeling & Simulation, 2004
Management Science, 1996, 1998, 2002
IEEE Transactions on Systems, Man, and Cybernetics, 2000
Interfaces, 1999
Multi-Criteria Decision Analysis, 1998-2000, 2003
Naval Research Logistics, 1998
IEEE Transactions on Knowledge and Data Engineering, 1998
Environmental Management, 1997

- **REVIEWS FOR NATIONAL STUDIES**

National Research Council Report, "Developing Modeling, Simulation, and Analysis: Meeting the Challenge," 2006

- **BOOK REVIEWS**

The Foundations of Decision Analysis, Ali Abbas and Ronald Howard, McGraw-Hill, 2006

CONSULTING

Argonne National Laboratory, *Consultant*, Provide decision and risk analysis guidance and peer review technical assistance. [2014 – 2017]

Innovative Decisions Inc. *Executive Senior Principal*. Perform strategic planning; decision analysis and risk analysis; systems engineering; and operations research studies for defense, intelligence, and commercial clients. Teach systems engineering; decision and risk analysis; and operations research short courses. [2003 – present]

Toffler Associates. *Principal*. Developed the Future Value Analysis Practice. Developed Multiple Perspective Portfolio Analysis for government R&D organizations. Performed a portfolio analysis for a large information services organization. Developed a decision analysis model to help the Air Force Space Battlelab generate, evaluate, and select initiatives to improve space support for joint warfighters. Developed resource allocation models to help a customer support organization prioritize its products and services. Developed a strategic planning model for an international air force. Developed a market segmentation plan for a customer support organization. Developed Multiple Objective decision models to support wargames. Advised a large defense corporation on how to establish a decision analysis internal consulting program. [1996 - 2003]

International Missions Board, Southern Baptist Convention. Provided strategic planning assistance to for international missions planning. Met with IMB staff and regional directors. Introduced them to Multiple Objective value models as a technique to help them decide how best to assign mission resources to achieve their strategic objectives. [1988-1999]

Air University, *Air Force 2025 Study***.** The purpose of this major CSAF-directed Air Force study was to identify and assess future systems and technologies. Assisted the Operational Analysis Team develop and perform the operational analysis. The *2025* operational analysis was the study's quantitative analysis to determine the most promising systems and highest leverage technologies. Three papers were published in technical journals. [1995 - 1996]

Institute for Defense Analyses, *Deep Attack Weapons Mix Study***.** The purpose of this study is to identify the best weapons mix**.** Phase I of the study uses factors for intelligence quality, weapons cueing, and battle damage assessment. For Phase II we developed an improved framework for modeling command, communications, computers, intelligence, surveillance and reconnaissance. Key events were defined as uncertain variables and the framework was modeled using DPL. [1996]

TASC, *Forward Focus II***.** Developed a multiattribute value model to capture operators' values for information in a wargame. The key functions were know, plan, and execute. The know tasks included detect, recognize, and understand. Critical objects types were identified and measures of merit for each object type. Several operational objectives were examined in the Forward Focus II wargame in July 1996. The value model was implemented using Logical Decisions. [1996]

MSE Technology Applications Inc. Identified cost methodologies and cost data requirements for the DOE environmental management focus areas. Summarized private industry and DoD analysis methodologies used in similar stage and gate R&D decision processes. [1996]

Air University, *SPACECAST 2020 Study*. The purpose of this major CSAF-directed Air Force study was to identify and assess future space systems and technologies. Led the Operational Analysis Team that developed and performed the operational analysis. The operational analysis was the study's quantitative analysis to determine the most promising systems and highest leverage technologies. Two papers were published in technical journals. [1994]

EXPERIENCE

Research Professor/Visiting Professor of Industrial Engineering. Department of Industrial Engineering, University of Arkansas, AR. Teach undergraduate and graduate courses in systems engineering, project management, decision analysis, and industrial engineering design. Perform research and service activities. Teach courses and supervised 9 senior design projects.

Professor/Associate Professor of Systems Engineering, Department of Systems Engineering, United States Military Academy at West Point. Taught undergraduate courses in decision analysis, systems engineering, engineering management, and operations research. Served on national advisory boards for the National Security Agency, the National Research Council, and the Department of Homeland Security. Supervised cadet capstone system engineering projects. Perform research and consulting. Taught 2 classes and supervised 2 capstone research projects per year. 1999-2013.

Distinguished Visiting Professor, Department of Management, United States Air Force Academy, Colorado Springs, CO. Taught undergraduate systems analysis and systems engineering courses. Supervised cadet capstone system project for On-Orbit Spacecraft Refueling for Air Force Space Command, academic year 2011-2012.

Associate/Assistant Professor of Mathematical Sciences, Department of Mathematical Sciences, College of Humanities and Sciences, Virginia Commonwealth University. Taught undergraduate and graduate courses in operations research, decision & risk analysis, mathematical programming, mathematical modeling, and mathematics. Performed research and consulting. Supervised seven MS theses. Taught four courses per year. 1995-1999

Head, Operational Sciences Department, Graduate School of Engineering, Air Force Institute of Technology. Supervised three 18 month MS programs (Operations Research, Operational Analysis, and Space Operations) and an Operations Research Ph.D. program. The programs averaged 45 MS and 5 Ph.D. students per year. Managed teaching, consulting, and research efforts of 16 full-time graduate faculty and 3 staff members. Taught four courses per year. 1993-95

Chief, Resource Analyses Division, AF Studies & Analyses Agency, The Pentagon. Provided analyses of combat capability and resources to the Secretary of the Air Force and Air Force Chief of Staff to support AF resource allocation decision-making. Supervised 35 analysts. 1991-93

Chief, Force Analyses Division, AF Center for Studies & Analyses, The Pentagon. Directed studies of strategic nuclear forces and strategic arms control. Lead AF analyst team supporting the SECDEF's B-2 Major Aircraft Review. Directed force structure drawdown studies that directly lead to START Treaty provisions. Supervised eight analysts. 1989-91

R&D Program Manager. Served in a variety of R&D management assignments. Held three key management positions at the Ballistic Missile Office: Chief, Missile Systems Engineering; Project Manager, M-X Transporter for the Multiple Protective Structures basing mode; and Project Manager, Minuteman III, Mark 12-A Re-entry Vehicle Production Program. Managed aircraft equipment development and production programs at Aeronautical Systems Division. 1972-80

Space Operations Officer. Assigned as a surveillance officer in the Space Defense Center. Coordinated the worldwide space surveillance network to detect foreign launches. Subsequently served as a systems controller in Diyarbakir, Turkey, supervised operation of space surveillance radars used to detect foreign launches. 1970-72

AWARDS AND HONORS

John Imhoff Fellow, Arkansas Academy of Industrial Engineering, 2019
Best Paper, Analysis of Alternatives Working Group, MORS Symposium, West Point, N.Y., 2017
Professor Emeritus, United States Military Academy at West Point, 2017
Frank P. Ramsey Medal, Decision Analysis Society, 2014
Best Paper, International Council on Systems Engineering (INCOSE) International Symposium,
        June 30-July 3, 2014, Las Vegas, NV, 2014
Department of the Army Exceptional Civilian Service Award, 2013
Wanner Award, Outstanding Contributions to Military Operations Research, Military Operations
        Research Society, 2013
Fellow, Lean Systems Society, 2012
Contributor to one of the ten most important accomplishments in risk analysis over past 30
        years; one of 146 papers noted. Found in: Greenberg, M., Haas, C., Cox A., Lowrie, K.,
        McComas, K., and North, W. "Ten Most Important Accomplishments in Risk Analysis,
        1980-2010." Risk Analysis, 2012; 32(5): 771-781.
Decision Analysis Publication Award Finalist, 2012
Fellow, Society for Decision Professionals, 2011
Award for "Contribution to Best Issue-Linked Paper Set" for debates in risk analysis, Risk Analysis
        Journal, Society for Risk Analysis, 2010
Fellow, International Council on Systems Engineering, (INCOSE), 2009
Fellow, Institute for Operations Research and Management Sciences (INFORMS), 2008
Koopman Prize, INFORMS Military Applications Society, 2007
Army Outstanding Civilian Service Award, 2006
Military Operations Research Journal Award, 2005
Dr. Wilbur B. Payne Memorial Award, Special Award, 2005
Who's Who in Engineering Education, 2005
United States Military Academy, Phi Kappa Phi Scholastic Achievement Award, 2004
Clayton Thomas J. Award Laureate, Military Operations Research Society, 2002
Class of 1950 Chair of Advanced Technology at USMA, 1999-2005
Fellow, Military Operations Research Society, 1997
Koopman Prize, INFORMS Military Applications Society, 1996

Air Force Institute of Technology Graduate School of Engineering, Instructor of the Quarter,
      Spring 1995
David Rist Prize for Outstanding Paper, Military Operations Research Society, 1991
Air Force Legion of Merit, 1995
Air Force Meritorious Service Award with 3 Oak Leaf Clusters
Air Force Commendation Medal with 3 Oak Leaf Clusters
Air Force Institute of Technology General Bernard A. Schriever Award, 1987
Air Force Systems Command, Certificate of Merit, 1981
Distinguished Graduate, Air Force Institute of Technology Civilian Institutions, 1974
Elected to Alpha Pi Mu, 1974
Distinguished Graduate, Air Force Reserve Officer Training Corps, 1970
Elected to Tau Beta Pi, Engineering Honor Society, 1968

Manuel D. Rossetti, Ph. D., P. E.

Professor of Industrial Engineering
E-mail: rossetti@uark.edu **Website:** sites.uark.edu/~rossetti

MISSION STATEMENT

My mission is to be a world-class scholar who promotes innovative teaching and research within an environment that values learning, hard work, intellectual curiosity, and collaboration.

SCHOLARLY INTERESTS

My research interests include the design, analysis, and optimization of logistics, manufacturing, health care, and transportation systems using computer simulation and operations research analytical techniques. I teach courses in computer simulation, inventory control, probability and statistics, database design, and transportation and logistics.

EDUCATIONAL BACKGROUND

Ph. D., Industrial and Systems Engineering – The Ohio State University, 1992
M.S., Industrial and Systems Engineering – The Ohio State University, 1988
B.S., Industrial Engineering – University of Cincinnati, 1985, Magna Cum Laude

PROFESSIONAL EXPERIENCE

Professor and Associate Department Head, University of Arkansas, 8/10 – present
Director, Center for Excellence in Logistics and Distribution, 8/13 - present
Associate Professor, Industrial Engineering, University of Arkansas, 8/03 - 8/10
Assistant Professor, Industrial Engineering, University of Arkansas, 8/99 - 8/03
Assistant Professor, Systems Engineering, University of Virginia, 9/93 - 6/99
Research Associate, Industrial & Systems Engineering, The Ohio State University, 9/89 - 9/92
Teaching Associate, Industrial & Systems Engineering, The Ohio State University, 9/86 - 6/89
Systems Engineer, Electronic Data Systems, Troy, MI, 7/85 - 5/86
Co-op Industrial Engineer, Union Metal Manufacturing Company, Canton, OH, 1/82 - 1/84

SELECTED HONORS AND AWARDS

- Outstanding Mentor, University of Arkansas, 2003, 2015, 2019
- Outstanding Faculty Advisor, IE Capstone Experience, 2017, 2018
- Voted Best IE Teacher by IE Students, 2007, 2009, 2017
- Industrial Engineering Outstanding Professor, 2015
- University of Arkansas Charles and Nadine Baum Teaching Award, 2013
- Elected into University of Arkansas Teaching Academy, 2013
- Elected as a Fellow for the Institute of Industrial Engineering, 2012
- John L. Imhoff College of Engineering Outstanding Teacher Award, 2011-12
- John L. Imhoff Chair in Industrial Engineering, 2012-2013
- Best Paper Award, Modeling and Simulation Track, IE Research Conference, 2004, 2008
- COE Outstanding Teacher Award, Department of Industrial Engineering, 2002, 2008, 2011

- COE Outstanding Service Award, Department of Industrial Engineering, 2010
- COE Outstanding Researcher Award, Department of Industrial Engineering, 2001
- UA Associated Student Government and Student Alumni Board Outstanding Teacher Nominee 2001, 2005
- University of Virginia Teaching Fellow 1997-98, $7000 award
- University Outstanding Teaching Award Nominee, University of Virginia, 1998
- Outstanding Capstone Faculty Advisor, Systems Engineering, University of Virginia, 1998

TEACHING AND ADVISING

I support the synergy between research and teaching through the use of active and collaborative teaching methods. I am committed to improving engineering education by developing, using, and disseminating innovative teaching practices and encouraging young people to choose engineering and science as a career.

Summary

- University of Virginia: 25 offerings, average student evaluations of 4.17/5.00
- University of Arkansas: 72 offerings, average student evaluations of 4.23/5.00
- National Science Foundation S-STEM Grant, $597, 316
- 8 STEM related refereed conference papers, 7 education related national conference presentations

Courses Taught

- *Undergraduate* – Principles of Industrial Engineering (INEG 1103), Engineering Statistics (INEG 3313), Data Processing Systems Engineering (INEG 3833), Transportation and Logistics (INEG 4633), Introduction to Simulation (INEG 4623), Simulation (INEG 3623), Database Concepts for Industrial Engineers (INEG 4833), INEG 4904 Senior Design, Design of Engineering Systems, Information Integration and Analysis, Discrete Event Stochastic Simulation, Systems Design I and II
- *Graduate* - Database Concepts for Industrial Engineers (INEG 5833), Systems Simulation 1 (INEG 5823), Systems Simulation 2 (INEG 6823), Analysis of Inventory Systems (INEG 5623), Simulation (INEG 5803), Lean Production and Inventory Control (OMGT 5613), Object-Oriented Modeling and Simulation, Discrete Event Stochastic Simulation, Case Studies for Systems Engineers, Queueing Theory

Doctoral, Masters, and Undergraduate Student Advising

- Doctoral Dissertations Chaired (8 completed, 3 in progress)
  - Mohammad H. Al-Rifai´ (2005), Vijith Varghese (2009), Yasin Unlu (2011), Hugh Medal (2012), Mohammad Shbool (2016), Anvar Abaydulla (2016), Payam Parsa (2017), Alireza Zadeh (2017), Pingjian Yu (TBD), Juliana Bright (TBD), Andrew Gibson (TBD)
- Doctoral Dissertation Committees (12 completed)
  - Luong Tran (1997), Ravi Kalaputapu (1998), Ashley Sigrest (1998), Alisha Youngblood (2003), Peng Qu (2004), Fernado Tovia (2004), Ghazi Magableh (2004), Navadon Sortrkul (2004), Mehmet Miman (2008), Yisha Xiang (2009), Jonathan White (2010), Jingming Liu (2019)

- Masters Student Committees Chaired (18 thesis (1 in progress), 10 projects, 7 course work)
  - Patrick Delaney (thesis, 1995), Keith Stanford (thesis, 1995), Tim Turrito (thesis, 1996), Amit Kumar (thesis, 1998), Francesco Seldanari (thesis, 1999), Greg Trzcinski (thesis, 1999), Ravi Kurgong (project, 2001), Yeu-San Tee (thesis, 2001), Hin-Tat Chan (project, 2002), Ryan Daniels (project, 2003), Soncy Thomas (project, 2004), Ashish Ashlerkar (thesis, 2004), Vijith Varghese (thesis, 2005), Kiran Chittoori (project, 2005), Stephen Farris (thesis, 2005), Vikram Desai (thesis, 2006), Shikha Nangia (thesis, 2006), Seda Gumrukcu (thesis, 2007), Doug Mettenberg (2007), Josh McGee (project, 2007), Shyam Prabhu (project, 2007), Merissa Purnomo (2008), Weiyang Ye (2008), Yanchao Liu (thesis, 2008), Amit Bhonsle (project, 2008), Jason Stout (thesis, 2009), Quingbao Ni (thesis, 2010), Server Apras (thesis, 2011), Ben Riley (2011), Doug Marek (2011), Tanvir Sattar (thesis, 2012), Yaohua Chen (project, 2012), Erik Seabold (2013), Brad Hobbs (TBD), Daisha Booth (project, 2015), Keith Webb (project, 2015), Luisa Janer (thesis, 2017), Maurice Kwizera (thesis, TBD)
- Masters Thesis Committees (20 completed)
  - Steve Spratt (1997), Bronwyn Jackson (1998), Shawn Morrow (1998), Y. Zhong (2000), Sen Lee (2001), James Oldham (2001), Derek Malstrom (2002), Chris Wessels (2005), Yisha Xiang (2006), John Sophabamixay (2007), Avishek Chhibber, (2006), Ronald Walker (2007), Hugh Medal (2008), M. Rizki, Balya, (2009), Lance Luttrel, (2009), Paiman Farrokhvar (2013), Luis Rojas (2014), Ahn Pham (2016), Barat Chivukula (2016), Yufei Gao (2017)
- Honors Students Thesis Chaired (5 completed, 1 in progress)
  - John DeForest (2008), Joseph Castrodale (2014), Luisa Janer (2015), David Cox (2018), Luke Turner (2019), Lawson Porter (TBD)
- Honors Student Thesis Committees (1 completed)
  - Stephen McCall (2007)
- Undergraduate Theses University of Virginia (22 completed)
  - Cheryl Taylor (1995), Dana Druckenmiller (1995), Terra Winston (1995), Jonathan Alboum (1995), Shannan Chandler (1995), Kathy Sheffield (1995), Marjorie Boursiquot (1996), Thomas Carney (1996), Leena Chitre (1996), Joshua Motter (1996), Roger Weisenberg (1996), Christopher Smeds (1996), Shavitra Sharma (1997), James Hardiman (1997), Stephen Claughton (1997), David Mettler (1997), Brian Wynne (1997), Greg Dodson (1997), Stacia Schlosser (1998), Jason Alambra (1998), Eri Iwasaki (1998), Bryan Lipson (1998)

RESEARCH AND GRANTSMANSHIP

I strive to develop new methods and techniques that can be applied within industrial engineering practice especially in the fields of logistics, manufacturing, and health-care. I do this by identifying and solving problems within these fields that require such techniques as simulation, statistics, probability, optimization, and software development.

Summary

- Investigator on a total of 60 projects totaling over $5.4 M
- Sole Investigator for 25 projects totaling $1,581,826
- Principal Investigator for 53 projects totaling $4,581,826

Funded Research Projects

1. Principal Investigator, "Field Automatic Data Collection on Transit Users Via Radio Frequency Identification," Transportation Research Board ($60,250), 1995-1996.
2. Principal Investigator, "Investigating Robotic Fleet Incentives for Mid-Sized Hospital Facilities," Helpmate Robotics ($18,564), Co-PI: R. Felder, 1997-1998.
3. Co-Principal Investigator, "Center for Mobile Information Technology: Research Center Feasibility Study," Virginia's Center for Innovative Technology ($25,000), PI: P. Beling, Co-PI: D. Brown, J. Liebeherr, M. Mayer, W. Scherer, R. Spekman, 1997-1999.
4. Principal Investigator, "Field Testing and Evaluation of the Transit Integrated Monitoring System," Transportation Research Board ($72, 684), 1998.
5. Principal Investigator, "Systems Analysis of Automatic License Plate Reading Technology," Virginia Department of Transportation ($7,384), Co-PI: W. Scherer, 1998.
6. Principal Investigator, "Java Simulation Library (JSL): An Object-Oriented Simulation Framework in Java," USENIX – The Advanced Computing Systems Association ($14,080), 1998-1999.
7. Principal Investigator, "Research Stipend for Pinkie Burrell," University of Virginia Health Sciences Department of Radiology ($15,000), 1998-1999.
8. Principal Investigator, "Research Stipend for Greg Trzcinski," University of Virginia Health Sciences Department of Emergency Medicine ($5,350), 1998-1999.
9. Principal Investigator, "Identification and Resolution of Materials Management Software Tracking Problems and Inventory Reconciliation," Pine Bluff Arsenal ($124,936), 1999-2000.
10. Principal Investigator, "The Analysis of Intermodal Choice Combinations and Pre-Positioning Strategies for Military Supplies and Material," Defense Logistic Agency ($75,000), Co-PI: T. Collins and E. Kutanoglu, 1999-2000.
11. Co-Principal Investigator, "Inventory Integrity Modeling and Benchmarking," Defense Logistic Agency ($105,000), PI: T. Collins, 1999-2000.
12. Principal Investigator, "Analysis of Solid Waste Collection Operations," City of Fayetteville ($9,932), 2000.
13. Principal Investigator, "Analysis of Fleet Operations and Maintenance," City of Fayetteville ($9,145), Co-PI: M. Cole, 2000.
14. Principal Investigator, "On-Line Benchmarking Database for Transportation Providers," Department of Transportation, Mack-Blackwell Center ($112,020), Co-PI: T. Collins, 2000-2001.
15. Principal Investigator, "Review of COTS for Transportation and Logistics Planning," Defense Logistics Agency ($50,000), Co-PI: E. Kutanoglu, 2000-2001.
16. Principal Investigator, "Object-Oriented Simulation of Supply Chain Networks," Arkansas Science Technology Authority ($59,778), 2000-2001.
17. Principal Investigator, "WebShipCost – Intermodal Transportation Linkage Cost Assessment via the WWW," Department of Transportation, Mack-Blackwell Center ($90,950), Co-PI: H. Nachtmann, 2001-2002.
18. Principal Investigator, "Training and Course Materials for Transportation Applications of GIS," Department of Transportation, Mack-Blackwell Center ($50,433), Co-PI: M. Cole, 2001-2002.
19. Principal Investigator, "Rick Malstrom Mack-Blackwell Fellowship for Julie Watson," Department of Transportation, Mack-Blackwell Center ($23,107), 2001-2002.
20. Co-Principal Investigator, "Wal-Mart Supercenter Staffing Study and Simulation Modeling," Wal-Mart through TLI ($50,000), PI: T. Collins, Co-PI: E. Fant, 2001-2002.
21. Co-Principal Investigator, "WebShipCost – Quantifying Risk in Intermodal Transportation," Department of Transportation, Mack-Blackwell Center ($78,934), PI: H. Nachtmann, 2002-2004.

22. Principal Investigator, "Readiness-Based Customer Wait Time Sparing within Manugistics Advanced Planning System", Naval Supply Systems Command, UA-Center for Engineering Logistics and Distribution, ($50,000), Co-PI: E. Kutanoglu, 2002-2003.
23. Principal Investigator, "DLA-DDC Analysis of Military Processing Center Operations", Defense Logistics Agency, UA-Center for Engineering Logistics and Distribution, ($50,000), Co-PI, T. Collins, 2002-2003.
24. Principal Investigator, "Hybrid Simulation/Analytic Models for Military Supply Chain Performance Analysis", Air Force Research Laboratory, Command, UA-Center for Engineering Logistics and Distribution, ($96,976), 2002-2004.
25. Principal Investigator, "Quantifying the Effect of Commercial Transportation Practices in Military Supply Chains", Air Force Research Laboratory, Command, UA-Center for Engineering Logistics and Distribution, ($96,258), Co-PI: S. Mason, 2002-2004.
26. Principal Investigator, "Modeling Sortie Generation, Maintenance, and Inventory Interactions for Unit Level Logistics Planners", Air Force Research Laboratory, Command, UA-Center for Engineering Logistics and Distribution, ($120,864), Co-PI: R. Hill, 2003-2004.
27. Co-Principal Investigator, "Quantification of Logistics Capabilities.", Air Force Research Laboratory, Command, UA-Center for Engineering Logistics and Distribution, ($119,697), PI: H. Nachtmann, 2003-2004.
28. Co-Principal Investigator, "Modeling and Analysis of Center Point Distribution Network," Wal-Mart UA-Center for Engineering Logistics and Distribution, ($50,000), PI: Scott Mason, 2003-04.
29. Principal Investigator, "WebShipCost – A Geographical Information System for Waterway Utilization," Department of Transportation, Mack-Blackwell Center, ($144,226) $69,658 + $74,568 match), Co-PI: H. Nachtmann, 2003-2004.
30. Principal Investigator, "A Constrained Clustering Algorithm for Spare Parts Segmentation", Naval Systems Supply Command, ($50,000), 2004-2005.
31. Principal Investigator, "Radio Frequency Identification and Productivity Improvements in Military Supply Chains", Defense Logistics Agency through CELDI, ($50,000), 2004-2005.
32. Principal Investigator, "CELDi/CHMR TIE Project: Examining Inventory Allocation in the Health Care Value Chain", National Science Foundation, ($100,000 = NSF $50,000 + UA $50,000), 2004-2006.
33. Principal Investigator, "CELDi/AFRL: Logistics Readiness and Sustainment", National Science Foundation, ($777,896), Co-PIs: H. Nachtmann, E. Pohl, S. Johnson, C.S. Nam, R. Cassady, J. English, 2004-2006.
    - Sub-Project: Principal Investigator, "Simulating Technology Improvements for Maintenance Excellence," ($137,576), 2004-2006.
    - Sub-Project: Co-Principal Investigator, "C/KC-135 Weapon System Stockage Policy Analysis," ($135,629), PI: E. Pohl, Co-PI: J. Chimka, 2004-2006.
34. Principal Investigator, "Improving Inventory Record Accuracy within Retail Store Operations", Wal-Mart, Inc, CELDi, ($50,000), Co-PIs: J. English, N. Buyurgan, 2005-2006.
35. Principal Investigator, "Modeling and Simulation Based Framework for Sense and Respond Logistics Concepts", AFOSR, ($303,830), Co-PIs: E. Pohl, R. Cassady, N. Buyurgan, 2005-2006.
36. Principal Investigator, "Integration of Geographical Information Systems (GIS) and Logistics Planning Methods for Arkansas Rural Transportation Emergency Planning", ($72,408) $36,408 + $36,000 match, Co-PIs: E. Pohl, F. Limp, 2006-2007.
37. Principal Investigator, "Developing and Evaluating Operationally Robust Forecasting Techniques in Military Logistics", AFOSR, ($119,577), Co-PI: E. Pohl, 2006-2007.

38. Principal Investigator, "An Intermittent Demand Forecasting Tool", CELDI National Science Foundation IUCRC, ($40,000), Co-PI: E. Pohl, 2007
39. Principal Investigator, "Inventory Models for Intermittent Highly Variable Demand and Safety Stock Adjustments to Meet Desired Service Level Requirements", Invistics Inc., CELDI National Science Foundation IUCRC, ($50000), 2008
40. Principal Investigator, "Simulating Transportation Modes in Large-Scale Evacuation Scenarios", Department of Homeland Security, ($50000), 2008-2009
41. Principal Investigator, "Simulation Methods for Ensuring Target Service Levels in Inventory Systems", Invistics Inc., CELDI National Science Foundation IUCRC, ($50000), 2009
42. Principal Investigator, "Supply Chain Network Simulator Using Cloud Computing". CELDI National Science Foundation IUCRC, ($53,334), 2010-11
43. Principal Investigator, "Scorecards for Lean Inventory Systems", Invistics Inc., CELDI National Science Foundation IUCRC, ($50000), 2010
44. Co-Principal Investigator, "Healthcare vs. Retail Supply Chain Gap Analysis" with Ed Pohl (PI), Heather Nachtmann (co-PI), Center for Innovation in Health Care Logistics, ($248,029), 2011-12
45. Principal Investigator, "Web Services for Inventory Management", Invistics Inc., CELDI National Science Foundation IUCRC, ($50000), 2011
46. Principal Investigator, "A Case Study Analysis of Inventory Cost and Practices for Operating Room Medical/Surgical Items", with Ed Pohl (co-PI), Vijith Varghese (co-PI), Covidien, Inc., $39,204, 2012
47. Principal Investigator, "Student Integrated Intern Research Experience (SIIRE)- A Pathway to Graduate Studies", with Kim Needy (co-PI), Micah Hale (co-PI), Ed Clausen (co-PI), Carol Gattis (co-PI), National Science Foundation, $597,316, 2012-2016.
48. Principal Investigator, "A Decision Support Tool for Continuous Replenishment Program Analysis", with Ed Pohl (co-PI), Shengfan Zhang (co-PI), Covidien, Inc., CELDi National Science Foundation IUCRC, $60,000, 2013-2014
49. Principal Investigator, "Impact of Lead Time Variability", DLA, CELDi National Science Foundation IUCRC, $60,000, 2013-2014
50. Principal Investigator, "Variation Identification System for Operational Risks (VISOR) in Inventory Systems", CELDi National Science Foundation IUCRC, $23,720, 2013-2014
51. Principal Investigator, "Analysis and Improvement of Sourcing Tools", Defense Logistics Agency, CELDi National Science Foundation IUCRC, $60,000, 2014-2015
52. Principal Investigator, "Order Fulfillment and Order Receiving Process Modeling for CRP and Non-CRP Customers", with Ed Pohl (co-PI), Shengfan Zhang (co-PI), Medtronic, Inc., CELDi National Science Foundation IUCRC, $60,000, 2014-2015
53. Principal Investigator, "Fabrication Division Logistics Process Modernization", with Harry Pierson, Red River Army Depot, CELDi National Science Foundation IUCRC, $60,000, 2014-15
54. Principal Investigator, "BCA Process Improvement and Cost Modeling", Defense Logistics Agency, CELDi National Science Foundation IUCRC, $60,000, 2015-2016
55. Principal Investigator, "Multi-Stop and Load Building Optimization Models", with Shengfan Zhang (co-PI), Medtronic, Inc., CELDi National Science Foundation IUCRC, $60,000, 2016
56. Principal Investigator, "Simulation Modeling of Bulk Petroleum Supply Chains", Defense Logistics Agency, CELDi National Science Foundation IUCRC, $60,000, 2016-2017
57. Principal Investigator, "Modeling the Benefits of Global Standards within Healthcare Organizations", with Ed Pohl (co-PI), Medtronic, Inc., CELDi National Science Foundation IUCRC, $60,000, 2017
58. Principal Investigator, "Fast Multi-Echelon Optimization via Grouping", with Thomas Knight (co-PI), $199,917, National Science Foundation, 2017-2019.

59. Principal Investigator, "SKU Classification (When Should DLA Create A SKU?)" Defense Logistics Agency, CELDi National Science Foundation IUCRC, $60,000, 2018-2019
60. Principal Investigator, "Evaluating Cross-Docking Operations for Medtronic)", with Shengfan Zhang (co-PI), Medtronic, Inc., CELDi National Science Foundation IUCRC, $60,000, 2018-2019

PUBLICATIONS AND PRESENTATIONS

Summary

- 1 text book, 2 editions
- 7 edited volumes or book chapters
- 37 articles published or accepted for publication in archival journals
- 85 refereed conference proceedings papers
- 6 articles under review for publication in archival journals
- 121 national/international conference presentations
- Citations (1772), h-index (21), i10-index (42) via Google Scholar

Text Books

1. *Simulation Modeling and Arena*, 1st Edition, 2010, John Wiley and Sons, Inc.
2. *Simulation Modeling and Arena*, 2nd Edition, 2016, John Wiley and Sons, Inc.

Archival Journals - Under Review

1. Rossetti, M. D. and Varghese, V. (2019), "The MCARTA Technique for Intermittent Demand Forecasting", submitted for publication.
2. Parsa, P. Shbool, M., Tanvir, S., Rossetti, M. D., Pohl, E. (2019) "A Collaborative Planning Forecasting and Replenishment (CPFR) Readiness Assessment Model", submitted for publication.
3. Sheikhzadeh, A., Rossetti, M. D., Scott, M. (2018) "Performance-Based Inventory Classification Methods for Large-Scale Multi-Echelon Replenishment Systems", submitted for publication.
4. Shbool, M., and Rossetti, M. D. (2018) "A Multi-Objective Decision Analysis Framework for Evaluating Physicians Preference Items" submitted for publication.
5. Shbool, M. and Rossetti, M. D. (2018) "Characterizing Physicians' Perspective for Managing Physician Preference Items", submitted for publication.
6. Sheikhzadeh, A., Farhangi, Hadi, Rossetti, M. D. (2018), "Inventory Grouping and Sensitivity Analysis in Multi-Echelon Spare Part Provisioning Systems", submitted for publication.

Archival Journals - Published or Accepted for Publication[1]

1. **Sheikh-Zadeh, A**., Rossetti, M. D. (2020), "Classification Methods for Problem Size Reduction in Spare Part Provisioning", *International Journal of Production Economics*, vol. 207, pp. 99-114.
2. **Parsa, P.,** Rossetti, M. D., Zhang, S. & Pohl, E. A., (2017) "Quantifying the Benefits of Continuous Replenishment Program for Partner Selection". *International Journal of Production Economics*, vol. 187, pp. 229-245
3. **Al-Rifai´ M. H.**, Rossetti, M. D., **Zadeh, A**. (2016) "A Heuristic Optimization Algorithm for Two-Echelon (R, Q) Inventory Systems with Non-Identical Retailers", *International Journal for Inventory Research*, vol. 3, No. 2., pp. 166-193

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[1] Bold indicates a student

4. **Medal, H**., E. Pohl, and M. Rossetti (2015). "Allocating Protection Resources to Facilities When the Effect of Protection is Uncertain", *IIE Transactions*, Published online: 04 Sep 2015, DOI**:**10.1080/0740817X.2015.1078013

5. Wu, D., Rossetti, M. D., **Tepper, J**. (2015) "Possibility of Inventory Pooling in China's Public Hospital and Appraisal about its Performance", *Applied Mathematical Modeling*, vol. 39, no. 23-24, pp. 7277-7290.

6. Xiang, Y. and Rossetti M. D. (2014) "The Effect of Backlog Queue and Load-building Processing in a Multi-echelon Inventory Network", *Simulation Modeling Practice and Theory*, Volume 43, Pages 54–66

7. **Medal, H.,** C. Rainwater, E. Pohl, and M. Rossetti (2014). A Bi-objective Analysis of the R-All-Neighbor P-Center Problem, *Computers and Industrial Engineering*, 72, 114–128.

8. **Medal, H.,** Pohl, E., Rossetti, M. (2014) "A Multi-objective Integrated Facility Location-Hardening Model: Analyzing the Pre- and Post-Disruption Tradeoff", *European Journal of Operational Research*, Volume 237, Issue 1, Pages 257–270

9. **Ni, Q.** and Rossetti, M. D. (2013) "Simulation Evacuation Modeling of a Commercial Shopping District", *International Journal of Mass Emergencies and Disasters*, vol. 31, no. 1

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11. Rossetti, M. D. and **Unlu, Y**. (2011) "Evaluating the robustness of lead time demand models", *International Journal of Production Economics*, Vol. 134, pp. 159-176, DOI:10.1016/j.ijpe.2011.06.010

12. Tovia, F., Cassady, C. R., Rossetti, M. D., Brooks, R. (2011) "Modeling and Analysis of Service Parts Logistics Systems," *International Journal of Operational Research*, Vol. 10, No. 1, pp. 60-81.

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14. Rossetti, M. D., Buyurgan, N., **Bhonsle, A., Gumrukcu, S., Chittoori, K**. (2010) "An Analysis of the Effect of Inventory Record Inaccuracy in a Two-Echelon Supply Chain", *International Journal for Inventory Research*, Vol. 1, No. 2, pp. 174-208, DOI: 10.1504/IJIR.2010.031462

15. **Ertem, A.,** Buyurgan, N., Rossetti, M. D. (2010) "Multiple-Buyer Procurement Auctions Framework For Humanitarian Supply Chain Management", *International Journal of Physical Distribution and Logistics Management,* Vol. 40, No. 3, pp. 202-227, DOI 10.1108/09600031011035092

16. Buyurgan, N., Rossetti, M. D., and **Walker, R. T**. (2010) "An Analysis of Imperfect RFID Visibility in a Multi-echelon Supply Chain", *International Journal of Logistics Systems Management*, Vol. 7, No. 4, pp. 431-455, DOI: 10.1504/IJLSM.2010.035631

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25. Rossetti, M.D., and G.M. Clark, (2003) "Estimating Operation Times from Arrival and Departure Events", *Computers in Industrial Engineering,* No. 44, 493-514.
26. Rossetti, M.D., and **Y. Tee,** (2002) "A Robustness Study of a Multi-Echelon Inventory Model via Simulation", *International Journal of Production Economics*, No. 80, 265-277.
27. Rossetti, M. D., and **Seldanari, F. (**2001) "Multi-objective analysis of Hospital Delivery Systems", *Computers and Industrial Engineering,* Vol. 41, pp. 309-333.
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31. Graves, S., Rossetti M., Holman J. W., **Estey C.,** Felder R., (1998) "Robotic Automation of Coagulation Analysis," *Clinica Chemica Acta*, Vol 278/2, pp. 269-279, Dec.
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1. Rossetti, M. D. (2016) "Introduction to Simulation Modeling", Wiley StatsRef: Statistics Reference Online, Balakrishnan, N., Brandimarte, P., Everitt, B., Molenberghs, G., Piegorsch, W., and Ruggeri, F. (editors), DOI: 10.1002/9781118445112
2. L. Yilmaz, W. K V. Chan, I. Moon, T. M. K. Roeder, C. Macal, and M. D. Rossetti, eds., Proceedings of the 2015 Winter Simulation Conference, Institute of Electrical and Electronics Engineers, Piscataway, New Jersey, ISBN 978-1-4673-9743-8

3. M. D. Rossetti, N. Buyurgan, E. Pohl (2011) "Medical Supply Logistics", Chapter 10 in *Healthcare System Scheduling: Delivering Care When and Where it is Needed*, edited by Randolph W. Hall, Springer Science + Business Media LLC, New York, NY

4. M. D. Rossetti, R. R. Hill, B. Johansson, A. Dunkin, and R. G. Ingalls (editors), (2009) *The Proceedings of the 2009 Winter Simulation Conference*, Institute of Electrical and Electronics Engineers, Piscataway, New Jersey.

5. English, J., **Yu, L.,** Rossetti, M. D., Buyurgan, N. (2008) "A Statistical Process Control Approach to Inventory Accuracy", Progress in Material Handling Research: 2008, Material Handling Industry of America, Ellis, K., Meller, R., Ogle, M., Peters, B., Taylor, G. D., Usher J. (editors), pp. 128-148.

6. R. G. Ingalls, M. D. Rossetti, J. S. Smith, and B. A. Peters (editors), (2004) *The Proceedings of the 2004 Winter Simulation Conference*, Institute of Electrical and Electronics Engineers, Piscataway, New Jersey, ISBN 0-7803-8786-4

7. Rossetti, M. D. (2008) "Logistics in Service Industries", in the *Logistics Engineering Handbook*, D. Taylor editor, Taylor & Francis, Group LLC.

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1. Rossetti, M. D. and **Bright, J.** (2019) "Analyzing Pre-Positioning within a Disrupted Bulk Petroleum Supply Chain", to appear in *Proceedings of the 2019 Winter Simulation Conference*, M. Rabe, A. A. Juan, N. Mustafee, A. Skoogh, S. Jain, and B. Johansson, eds., National Harbor, Maryland, Piscataway, New Jersey: Institute of Electrical and Electronics Engineers, Inc.

2. Gattis, C., Needy, K., Rossetti, M. D., Clausen, E., Lo, W. (2019) "Creating a Successful Pathway to Graduate Studies: The Student Integrated Intern Research Experience (SIIRE)", *Proceedings of the 2019 ASEE Annual Conference and Expo*, Tampa FL.

3. **Parsa, P**. and Rossetti, M. D. (2018) "A multi-functional metric for monitoring inventory and transportation efficiency in collaborative supply chains", *Proceedings of the IISE Annual Conference and Expo 2018*, Orlando, FL

4. Rossetti, M. D. and **Bright, J.** (2018) "Bulk Petroleum Supply Chain Simulation Modeling", *Proceedings of the 2018 Winter Simulation Conference*, M. Rabe, A. A. Juan, N. Mustafee, A. Skoogh, S. Jain, and B. Johansson, eds., Gothenburg, Sweden, Piscataway, New Jersey: Institute of Electrical and Electronics Engineers, Inc.

5. **Weishaar, C.,** Rossetti, M. D., Needy, K., **Specking, E**., **Dodson, T.** (2018) "Effectiveness of GRE Workshops to Increase Awareness", *Proceedings of the 2018 ASEE Annual Conference and Exposition*, Salt Lake City, Utah

6. **Janer, M. L.** and Rossetti M. D. (2018) "Simulation Modeling of a Prototype Designed to Address the Congestion of Passengers and Items at the Composure Area of Security Checkpoints", *Proceedings of the Transportation Research Board (TRB) 97th Annual Meeting.*

7. **Cox, D.** and Rossetti, M. D. (2017) "Simulation Modeling of Alternative Staffing and Task Prioritization in Manual Post-Distribution Cross Docking Facilities", *Proceedings of the 2017 Winter Simulation Conference*, W. K. V. Chan, A. D'Ambrogio, G. Zacharewicz, N. Mustafee, G. Wainer, and E. Page, eds., Las Vegas, NV, Piscataway, New Jersey: Institute of Electrical and Electronics Engineers, Inc.

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9. **Parsa, P**., Rossetti, M. D., Zhang, S (2017) "Multi-Stop Truckload Planning", Proceedings of the 2017 Industrial and Systems Engineering Conference, K. Coperich, E. Cudney, H. Nembhard, eds. *IISE Annual Conference and Expo 2017*, May 20-23, 2017, Pittsburgh, PA.

10. Rossetti, M. D. and Pierson H. (2017) "Analysis of Material Flow in a High-mix, Low-volume Job Shop: A Case Study", *Proceedings of the American Society for Engineering Management 2017 International Annual Conference E-H. Ng, B. Nepal, and E. Schott eds.*

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14. **Sheikhzadeh, A.,** and Rossetti, M. D. (2016), "Inventory Segmentation Performance Improvement for Multi-Echelon Repairable Items Logistics Systems", In Proceedings of The 2016 Industrial and Systems Engineering Research Conference (ISERC), Anaheim, CA, USA.

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53. **Bhonsle, A.,** Rossetti, M., Robinson, D. (2005) "Identifying and Setting Safety Stocks Levels via Multiple Criteria," The *Proceedings of the 2005 Industrial Engineering Research Conference*, R. Georgia-Ann Klutke (ed.), Atlanta, GA.

54. **McGee, J**., Rossetti, M. D., Mason, S. (2004) "Simulating Transportation Practices in Multi-Indenture Multi-Echelon (MIME) Systems", *Proceedings of the 2004 Winter Simulation Conference*, R. G. Ingalls, M. D. Rossetti, J. S. Smith, and B. A. Peters, eds., Piscataway, New Jersey: Institute of Electrical and Electronics Engineers.

55. **Zhe, L.,** Nachtmann, H., and Rossetti, M. (2004) "WebshipCost – Quantifying Risk in Intermodal Transportation," The *Proceedings of the 2004 Industrial Engineering Research Conference*, R. King, B. Norman (eds.), Houston, TX.

56. Rossetti, M. and **Achlerkar, A.** (2004) "A Constrained Clustering Algorithm for Spare Parts Segmentation," The *Proceedings of the 2004 Industrial Engineering Research Conference*, R. King, B. Norman (eds.), Houston, TX.

57. **Farris, S.** and Rossetti, M. (2004) "A Neural Network Approximation for the Expected Waiting Time in a GI/G/m Queue," The *Proceedings of the 2004 Industrial Engineering Research Conference*, R. King, B. Norman (eds.), Houston, TX.

58. **Sophabmixay, J.,** Mason, S., and Rossetti, M. D. (2004) "Strategic Optimization of a Transportation Distribution Network," The *Proceedings of the 2004 Industrial Engineering Research Conference*, R. King, B. Norman (eds.), Houston, TX.

59. Rossetti, M. D., and **H. T. Chan.** (2003) "A Prototype Object-Oriented Supply Chain Simulation Framework", in *The Proceedings of the 2003 Winter Simulation Conference,* S. Chick, P. J. Sánchez, D. Ferrin, and D. J. Morrice, eds, Piscataway, New Jersey: Institute of Electrical and Electronic Engineers

60. Rossetti, M. D., **Purnomo, M.** (2003) "Redesigning a First-Year, First Semester Introductory IE Course to Use Active and Cooperative Learning", The *Proceedings of 2003 American Society of Engineering Education Conference and Exposition,* June 22-25, 2003, Nashville, TN.

61. Rossetti, M. D., Sloan, N., **Tee, Y. S.** (2003) "Methods for Military Stock Positioning Analysis", *The Proceedings of the 2003 Industrial Engineering Research Conference*, M. Dessouky, S. Stettles, S. Bukkapatnam, S. Thompson, (editors), May 17-21, 2003, Portland, Oregon.

62. **Watson, J.** and Rossetti, M. D., (2003) "Interaction between Pricing and Inventory Management", *The Proceedings of the 2003 Industrial Engineering Research Conference*, M. Dessouky, S. Stettles, S. Bukkapatnam, S. Thompson, (editors), May 17-21, 2003, Portland, Oregon.

63. **Li, Z.,** Rossetti, M. D., Nachtmann, H., (2003) "WebShipCost-An Intermodal Transportation Web-based Application", *The Proceedings of the 2003 Industrial Engineering Research Conference*, M. Dessouky, S. Stettles, S. Bukkapatnam, S. Thompson, (editors), May 17-21, 2003, Portland, Oregon.

64. Rossetti, M. D. (2002) "Field Testing and Design of a Transit Integrated Monitoring System", in *9th Annual World Congress on Intelligent Transport Systems*, Chicago, Illinois.

65. Rossetti, M. D., **Sang, T**., Collins, T. (2002) "Online Benchmarking for Transportation Providers", *9th Annual World Congress on Intelligent Transport Systems,* Chicago, Illinois.

66. Sloan, N., Rossetti, M. D. (2002) "Examining Stock Positions in Military Logistics", *The Proceedings of the 2002 Industrial Engineering Research Conference*, J. Fowler and D. Montgomery (editors), Orlando, Florida.

67. **Malstrom, D.,** Collins, T., Nachtmann, H., and Rossetti, M. D. (2002) "An Inventory Cost Model of a Government Owned Facility Using Fuzzy Set Theory", *The Proceedings of the 2002 Industrial Engineering Research Conference*, J. Fowler and D. Montgomery (editors), Orlando, Florida.

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69. Rossetti, M. D., Cassady, C. R., **Schneider, K.** (2002) "Assessing an Industry-Based IE Senior Design Course", The *Proceedings of 2002 American Society of Engineering Education Conference and Exposition,* Montréal, Québec , Canada.

70. **Tee, Y. S.** and Rossetti, M. D. (2001) "Using Simulation to Evaluate A Continuous Review (R, Q) Two-Echelon Inventory Model", *Advances in Industrial Engineering Theory, Applications, and Practice, The 6th Annual International Conference on Industrial Engineering Theory, Applications and Practice*, J.E. Fernandez, R. J. Marley, A. Pennathur, A. Mital, T. K. Fredricks, and A. A. Fuentes, (editors), Nov18-20, 2001, San Francisco, CA.

71. Rossetti, M. D., Collins, T., **Kurgund, R.** (2001) "Inventory Cycle Counting – A Review", *The Proceedings of the 2001 Industrial Engineering Research Conference*, J. Rajgopal, K. Needy, Dallas, Texas.

72. Collins, T., Rossetti, M. D., **Oldham, J., Lehrman, A.** (2001) "Benchmarking for Best Practices in Inventory Integrity", *The Proceedings of the 2001 Industrial Engineering Research Conference*, J. Rajgopal, K. Needy, Dallas, Texas.

73. Collins, T., Rossetti, M. D., **Watson, J. A.** (2001) "A Balanced Scorecard Approach to Performance Measurement in the Government Sector", *The Proceedings of the 2001 Industrial Engineering Research Conference*, J. Rajgopal, K. Needy, Dallas, Texas.

74. Rossetti, M. D. and **Baker, J.** (2001) "Applications and Evaluation of Automated License Plate Reading Systems", *Proceedings of the Intelligent Transportation Society of America 11th Annual Meeting and Exposition*, Miami, Florida.

75. Collins, T., M. D. Rossetti, and **J. A. Watson**, (July, 2000) "The use of performance metrics as a strategic management tool," Proceedings of the Academy of Business & Administrative Sciences International Conference, Prague, Czech Republic.

76. Rossetti, M. D., **Aylor, B., Jacoby, R., Prorock, A., White, A.** (2000) "Simfone′: An object-oriented simulation framework", *The Proceedings of the 2000 Winter Simulation Conference,* J. Joines, R. Barton, P. Fishwick, and K. Kang, eds., Piscataway, New Jersey: Institute of Electrical and Electronic Engineers, pp. 1855-1864

77. Rossetti, M. D., and Nembhard, H. (2000) "Using Active and Collaborative Learning in Industrial Engineering Education", *2000 American Society of Engineering Education Conference and Exposition,* St. Louis, MO.

78. Rossetti, M. D., **Seldanari, F.** (2000) "Hospital Delivery System Comparison Via Computer Simulation", *The Proceedings of the 2000 Industrial Engineering Research Conference*, J. M. Usher, L. L. Crumpton-Young, Cleveland, Ohio.

79. Rossetti, M. D., **Trzcinski, G.,** and Syverud, S. (1999) "Emergency Department Simulation And Determination Of Optimal Attending Physician Staffing Schedules", *The Proceedings of the 1999 Winter Simulation Conference,* F. Farrington, H. B. Nembhard, D. T. Sturrock, and G. W. Evans, eds. Piscataway, New Jersey: Institute of Electrical and Electronic Engineers, pp. 1532-1540

80. Dywer, S., Berr, S., Williams, M., de Paredes, E., Fatouros, P., Scherer, B., Rossetti, M., and **Burrell, P.** (1998) "Modeling Screening Mammography Examinations", *Computer Based Medical System 11th IEEE Symposium*, June 12-14th, pp. 118-131.

81. Rossetti, M. D., **Kumar, A.** and Felder, R. (1998) "Mobile Robot Simulation of Clinical Laboratory Deliveries," *The Proceedings of the 1998 Winter Simulation Conference,* ed. M. Manivannan, D. J.

Medeiros, and E. Watson, J. Evans, eds. Piscataway, New Jersey: Institute of Electrical and Electronic Engineers, pp. 1415-1422.

82. Rossetti, M. D., and Nembhard, H. (1998) "Using Simulation to Activate Your Simulation Classroom", *The Proceedings of the 1998 Winter Simulation Conference*, D. J. Medeiros, E. F. Watson, J. S. Carson, M. S. Manivannan, , eds. Piscataway, New Jersey: Institute of Electrical and Electronic Engineers, pp. 67-74.

83. Rossetti, M. D. (1997) "Activate This Classroom at Time Now," in *The Proceedings of the 1997 Winter Simulation Conference*, S. Andradottir, K. J. Healy, D. H. Withers, and B. L. Nelson, eds. Piscataway, New Jersey: Institute of Electrical and Electronic Engineers, pp. 1383-1389.

84. Rossetti, M. D. and **Delaney, P. J**. (1995) "Control of Initialization Bias in Queueing Simulations Using Queueing Approximations," in *The Proceedings of the 1995 Winter Simulation Conference*, C. Alexopoulos, K. Kang, W. R. Lilegdon, and D. Goldsman, eds. Piscataway, New Jersey: Institute of Electrical and Electronic Engineers, pp. 322-329.

85. Rossetti, M. D., **Delaney, P. J.,** and White, K. P. (1995) "Generalizing the Half-Width Minimization Heuristic for Mitigating Initialization Bias," in *The Proceedings of the 1995 International Conference on Systems, Man and Cybernetics*, IEEE SMC.

Conference Presentations

1. Zhang, S., Parsa, P., and Rossetti, M. (2019) "Selecting Products for Cross Docking Facilities", IISE Annual Conference and Expo 2019, Orlando, FL

2. Parsa, P. and Rossetti, M. D. (2018) "A multi-functional metric for monitoring inventory and transportation efficiency in collaborative supply chains", IISE Annual Conference and Expo 2018, Orlando, FL

3. Rossetti, M. D. and **Bright J.** (2018) "Rough Cut Modeling of Bulk Petroleum Supply Chains", IISE Annual Conference and Expo 2018, Orlando, FL

4. **Smithey, K.,** Rossetti, M. D. and Pohl, E. (2018) "Expiration Management Practices Due to Data Standards within Healthcare", IISE Annual Conference and Expo 2018, Orlando, FL

5. **Bright J.** and Rossetti, M. D. (2018) "The Impact of Input Uncertainty on Inventory System Performance", IISE Annual Conference and Expo 2018, Orlando, FL

6. Sheikhzadeh, A., and Rossetti, M. D. (2017) "Heuristics Segmentation and Classification Methods for Problem Size Reduction in Multi-Echelon Spare Part Provisioning Systems", IISE Annual Conference and Expo 2017, May 20-23, 2017, Pittsburgh, PA.

7. Janer, M. L. and Rossetti, M. D. (2017) "Simulation Modeling of Experienced vs. Non-Experienced Passengers Under Non-Stationary Arrival Rates", IISE Annual Conference and Expo 2017, May 20-23, 2017, Pittsburgh, PA.

8. Kizito, R., Pohl, E., Rossetti, M. D. (2017) "Quantifying the Benefits of Data Standards: A Healthcare Providers Perspective", IISE Annual Conference and Expo 2017, May 20-23, 2017, Pittsburgh, PA.

9. Rossetti, M. D., **Bright J.** (2017) "Simulation Modeling for Capacity and Inventory Planning within the Bulk Petroleum Supply Chain", CELDi Spring 2017 Research Symposium, Fayetteville, AR.

10. Rossetti, M. D., **Parsa, P.,** and Zhang, S. (2016) "A Decision Support Tool for Partner Selections in a Continuous Replenishment Program", CELDi Spring 2016 Research Symposium, Atlanta GA.

11. Rossetti, M. D., **Bright, J.,** and Parnell G. (2016) Analysis and Improvement of Sourcing Tools, CELDi Spring 2016 Research Symposium, Atlanta GA.

12. Rossetti, M. D., **Bright, J.,** and Parnell G. (2016) A Multi-Objective Decision Analysis Framework for DLA Business Case Analysis, CELDi Fall 2016 Research Symposium, Columbia, MO.

13. Rossetti, M. D., **Parsa, P.,** and Zhang, S. (2016) A Multi-objective Route Selection Methodology for Multi-stop Trucking, CELDi Fall 2016 Research Symposium, Columbia, MO.

14. Rossetti, M. D. (2016) How should logisticians think about big data?, Newsletter for Analisis de Datos Industriales, LANIA Laboratorio Nacional de Informática Avanzada, October 5th, 2016, Xalapa, Veracruz, México

15. **Sheikhzadeh, A.,** and Rossetti, M. D. (2016) "Inventory Segmentation Performance Improvement for Multi-Echelon Repairable Items Logistics Systems", Industrial and Systems Engineering Research Conference (ISERC), Anaheim, CA, USA. (May 2016)

16. **Parsa, P.,** Rossetti, M. D., Zhang, S. (2016) "The Value and Cost of CRP Relationships", The Industrial and Systems Engineering Research Conference, Anaheim, CA (May 2016)

17. **Parsa, P**., **Bin L.,** Milburn, A., Rossetti, M. D. (2016) "Methods for Analyzing Fiscal Calendar Effects within an ERP Systems", Industrial and Systems Engineering Research Conference, Anaheim, CA (May 2016)

18. **Sheikhzadeh, A.** and Rossetti, M. D. (2015) "Segmentation Methods for Large-Scale Multi-Echelon Service Parts Logistics Systems", Presented at the 2015 Industrial and Systems Engineering Research Conference S. Cetinkaya and J. K. Ryan, eds., May 30 – June 2, 2015 in Nashville, Tenn.

19. Rossetti, M. D. and **Bright J.** (2015) "Compensating for the Erroneous Assumption of Constant Replenishment Lead Time", Presented at the 2015 Industrial and Systems Engineering Research Conference S. Cetinkaya and J. K. Ryan, eds., May 30 – June 2, 2015 in Nashville, Tenn.

20. **Parsa, P.** Rossetti, M. D., Zhang, S., Pohl, E. (2015) "Partner Selection in Continuous Replenishment Programs", Presented at the 2015 Industrial and Systems Engineering Research Conference S. Cetinkaya and J. K. Ryan, eds., May 30 – June 2, 2015 in Nashville, Tenn.

21. **Sheikhzadeh, A**., and Rossetti, M. D. (2014, Nov.) "Segmentation Methods for Large-Scale Multi-Echelon Service Parts Logistics Systems", INFORMS Annual Meeting. San Francisco, CA.

22. **Webb, K**. and Rossetti, M. D. (2014) "Monte-Carlo Sensitivity Analysis of Inventory Models", *2014 Industrial Engineering Research Conference, Ed. by Y. Guan and H. Liao. Montreal, Canada.*

23. Rossetti, M. D. and Ni, Q. (2012) "Simulation Evacuation Modeling of a Commercial Shopping District", *National Evacuation Conference*, New Orleans, LA, Feb 7-9, 2012.

24. Rossetti, M. D. and Ni, Qingbao (2010) "Simulating the Evacuation of a Large-Scale Commercial Shopping District – A Case Study", National Evacuation Conference, Feb. 4-5, New Orleans, LA.

25. Rossetti, M. D. and Unlu, Y. (2010) "Simulation Methods for Ensuring Target Service Levels in Inventory Systems", CELDi Fall Meeting, Dallas Fort Worth, Oct 20th 2010.

26. Rossetti, M. D. (2002) "Field Testing and Design of A Transit Integrated Monitoring System", 9th Annual World Congress on Intelligent Transport Systems, Chicago, IL, October 14-17, 2002.

27. Rossetti, M. D., **Sang, T.**, Collins, T. (2002) "Online Benchmarking for Transportation Providers", 9th Annual World Congress on Intelligent Transport Systems, Chicago, IL, October 14-17, 2002.

28. Rossetti, M. D., **Kincannon, M**., Collins, T., (2002) "Simulating Non-Stationary Processes and Customer Behavior for Staffing Customer Check-Out Lines", extended abstract and presentation for The 2002 Industrial Engineering Research Conference, Orlando, Florida.

29. Rossetti, M. D. (2001) Panel Session on Issues in Intermodal Transportation, at the 2001 Industrial Engineering Research Conference.

30. Rossetti, M. D. (2001) "Supply Chain Simulation", Fourth Annual MRO Group Conference, Nashville, Tennessee, Sept 10-13, 2001.

31. Beling P., Rossetti, M. D. and Strickland, S. (1995) "System Requirements for a World Wide Web Learning Environment," Atlanta INFORMS 1996.

32. Rossetti, M. D., (2000) "Using Active and Collaborative Learning in Industrial Engineering Education", 2000 American Society of Engineering Education Conference and Exposition.

33. Rossetti, M. D., (2000) "Hospital Delivery System Comparison Via Computer Simulation", 2000 Industrial Engineering Research Conference.

34. Rossetti, M. D. "Estimating Expected Sojourn Times for a Markov Renewal Process," ORSA/TIMS Joint National Meeting, Boston April, 1994

35. Rossetti M. D. "Estimation of Facility Operation Times for Use in Capacity Requirements Planning", TIMS/ORSA Joint National Meeting No. 33 Orlando, Florida, April 1992.

36. Rossetti M. D. "Evaluating an Approximation for the Two Type Stoppage Machine Interference Model Via Simulation Optimization," TIMS/ORSA Joint National Meeting No. 31 Nashville 1991.

SERVICE

Service to the university, to professional societies, and to the community is an important aspect of enhancing the quality of academic life. I have focused my service activities on service to students, service to my academic department, and service to the industrial engineering profession.

Service to the University

- UA-Ferritor Departmental Teaching Award, Chair, 2018
- UA-Faculty Senate, Engineering Representative, 2010-Present
- UA-University Programs and Curriculum Committee, Engineering Representative, 2014-Present
- UA-Teaching Academy Nomination and Awards Committee, 2017
- UA-University Program Review Committee, 2010-2015
- UA-Teaching Council, Chair, 2012-2013
- UA-All University Academic Integrity Board, COE-Alternate, 2011
- UVA-University Teaching Resource Center Portfolio Mentor 1996-98

Service to the College

- UA-College of Engineering Promotion and Tenure Committee, 2016-Present

- UA-College of Engineering Academic Programs Committee, 2010-Present, Chair 2014-Present
- UA-College of Engineering Strategic Planning Committee, 2004-2008, 2014-2016
- UA-College of Engineering Co-op Committee, 2011-2015
- UA-College of Engineering Ad Hoc Sophomore Retention Committee, 2011
- UA-College of Engineering External Mentor Program Committee, 2007-2012
- UA- College of Engineering ABET Committee, 2000-2009
- UA- College of Engineering Web Committee, 2000
- UA- College of Engineering Tech Summit Conference, Reviewer/Judge, 2001-2002
- UVA-SEAS Rules and Courses Committee, 1997-1999
- UVA-SEAS ENGR 208 Advisory Committee, 1995-1997
- UVA-SEAS Library Committee, 1994-1997
- UVA-SEAS Ad Hoc Committee on Professional Development, 1996
- UVA-SEAS First Year Advisor, 1998
- UVA-SEAS 1997 Engineering Open House for Underrepresented Students (Panelist)

Service to the Department

- UA-IE Personnel Committee Member, 2009-Present, Chair 2009, 2016-Present
- UA-IE-OMGT-EMGT Curriculum Committee, 2017-Present
- UA-IE Strategic Planning Committee, 2015-2017
- UA-IE Ferritor Award Committee Ad Hoc, 2017
- UA-IE Faculty Search Committee, 2001-2005, 2010-2011, 2014-2015, Chair 2003-2004, 2012-2013
- UA-IE Scholarship Committee, 2010-2016
- UA-IE ABET Committee (Chair), 2000-2009
- UA-IE Graduate Studies Committee (Member), 2002-present, Chair 2009
- UA-IE Undergraduate Studies Committee (Member, 1999 – 2000), (Chair, 2001 – 2009)
- UVA-SE Space, Laboratory, & Equipment, 1997-1999
- UVA-SE Graduate Studies Committee, 1997-1999
- UVA-SE Transfer Student Advisor, 1997-1999
- UVA-SE Newsletter/Promotion Committee, 1993-1997
- UVA-SE Events Committee (SEAS Parent's Day, Open House, Major's Night), 1993-1997

Professional Associations

- Fellow of the Institute of Industrial Engineers, 2013 - Present
- Associate Member of the Institute for Operations Research and Management Science (INFORMS), 1988 - Present
- Member of INFORMS College on Simulation, 1999 - Present
- Associate Member of the Institute of Industrial Engineers, 1985 – 2003
- Senior Member of the Institute of Industrial Engineers, 2004- 2012
- Member of the Society for Computer Simulation, 1988-2003
- Member of American Society for Engineering Education (ASEE), 1999 – Present
- Member of the International Institute of Forecasters, 2008-2010
- Member of The Operational Research Society, 2007-Present

- EIT Registration State of Ohio
- Professional Engineer, State of Arkansas, 2002 - Present

Professional Service

- 2024 General Chair, 2024 Winter Simulation Conference
- Editorial Advisory Board, Journal of Defense Analytics and Logistics, 2016-present
- 2015 Program Chair, 2015 Winter Simulation Conference
- 2013 Publicity Chair, 2013 Winter Simulation Conference
- 2009, College of Engineering Outstanding Service to Students Award Industrial Engineering
- Program Committee Proceedings Co-Editor 2009 Winter Simulation Conference
- NSF Panelist, SBIR Program, Information Technology Applications, 2006 – present
- National Defense Science and Engineering Graduate Fellowship Program Reviewer, 2016-17
- Research Grants Council, Hong Kong, 2006-2009
- Program Committee Proceedings Co-Editor 2004 Winter Simulation Conference
- Associate Editor for *International Journal of Modeling and Simulation,* 2000 - present
- Program Committee Publications Chair 2000 Winter Simulation Conference
- Associate Editor, Queueing Section of *International Abstracts in Operations Research,* 1997-1999
- Referee for *Journal of Defense Modeling and Simulation, Maritime Policy & Management, International Journal of Inventory Research, Military Operations Research, Simulation Modeling and Practice, Journal of Defense Analytics and Logistics, Production and Operations Management, European Journal of Operational Research, Management Science, Computers and Industrial Engineering, International Journal of Modeling and Simulation, Health Care Management Science, International Journal for Simulation and Process Modeling, Journal of Defense Modeling and Simulation, IIE Transactions, International Journal of Production Economics, Journal of Business Logistics, Journal of Scheduling, Journal of Operational Research, Winter Simulation Conference, Industrial Engineering Research Conference, IEEE Intelligent Transportation Systems Society Conference,*
- Session Chair Winter Simulation Conference 1997, 1998, 2000, 2004-present
- Judge/Referee for IIE OR Division Application Award
- *Advisor,* National Society of Black Engineers UVA Student Chapter 1993-1999
- Wiley Reviewer for book: *Applied Statistics & Probability for Engineering*

Consulting

- Wal-Mart, Inc., Bentonville, Arkansas, 2000 to 2008, Simulation Analysis
- Invistics, Inc., Atlanta GA, 2008-present, inventory modeling

Community Service

- Northwest Arkansas Regional Science and Engineering Fair Judge, 2008-12
- Elder, First United Presbyterian Church, Fayetteville, 2008-2011
- Education Ministry Committee Member, First United Presbyterian Church, Fayetteville, 2008-10
- Sunday School Teacher, First United Presbyterian Church, Fayetteville, 2000-2010
- Youth Ministry Committee Member, First United Presbyterian Church, Fayetteville, 2007-2010
- Analysis of Solid Waste Collection Operations, City of Fayetteville, 2000
- Analysis of Fleet Operations and Maintenance, City of Fayetteville, 2001

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Academic Experience

Assistant Professor, Department of Industrial Engineering, University of Arkansas, August 2015-Present.

Visiting Assistant Professor, Department of Operational Sciences, Air Force Institute of Technology, Non-Tenure Track, July 2013 - July 2015.

Education

Ph.D. Decision Sciences and Engineering Systems, Rensselaer Polytechnic Institute, August 2013
Dissertation Title: *Integrated Network Design and Scheduling Problems: Optimization Algorithms and Applications*.
Advisor: Thomas C. Sharkey. Committee Members: John E. Mitchell, William A. Wallace, Kristin P. Bennett.

M.Eng. Industrial and Management Engineering, Rensselaer Polytechnic Institute, December 2011.

B.S. Mathematics, Magna Cum Laude, Rensselaer Polytechnic Institute, May 2007. Minors: Computer Science and Economics.

Publications

[†] denotes student author

Refereed Journal Articles

1. M. Kabli, M.A. Quddus, **S.G. Nurre**, M. Marufuzzaman, and J. Usher. A Stochastic Programming Approach for Electric Vehicle Charging Station Expansion Plans. *International Journal of Production Economics*, forthcoming.

2. K.R. Schneider and **S.G. Nurre**. A Multi-Criteria Vehicle Routing Approach To Improve the Partner Agency Audit Schedule for Food Banks. *Omega*, 84, pp. 127-140, 2019.

3. **S.G. Nurre** and T.C. Sharkey. Online Scheduling Problems with Flexible Release Dates: Applications in Infrastructure Restoration. *Computers & Operations Research*, 92, pp. 1-16, 2018.

4. R.S. Widrick[†], **S.G. Nurre**, and M.J. Robbins. Optimal Policies for the Management of an Electric Vehicle Battery Swap Station. *Transportation Science*, 52(1), pp. 59 - 79, 2018.

5. J.M. Colombi, L.D. Buckle, J. Black, and **S.G. Nurre**. Optimal Launch Manifesting for Heterogeneous Disaggregated Satellite Constellations. *Journal of Spacecraft and Rockets*, 54(3), pp. 582-591, 2017.

6. S. Chowdhury, A. Emelogu, **S.G. Nurre**, L. Bian, and M. Marufuzzaman. Drones for Disaster Response and Relief Operations: A Continuous Approximation Model. *International Journal of Production Economics*, 188, pp. 167-184, 2017.

7. **S.G. Nurre** and J.D. Weir. Interactive Excel based Gantt Chart Schedule Builder. *INFORMS Transactions on Education*, 17(2), pp. 49–57, 2017.

8. N.R. Paul, B.J. Lunday, and **S.G. Nurre**. A Multiobjective, Maximal Conditional Covering Location Problem Applied to the Relocation of Hierarchical Emergency Response Facilities. *Omega*, 66(A), pp. 147-158, January 2017.

9. T.C. Sharkey and **S.G. Nurre**. Video Tutorials within an Undergraduate Operations Research Course: Student Perception on Their Integration and Creating A Blended Learning Environment. *INFORMS Transactions on Education*, 17(1), pp. 1-12, September 2016.

10. T.C. Sharkey, **S.G. Nurre**, H. Nguyen, J.H. Chow, J.E. Mitchell, and W.A. Wallace. Identification and Classification of Restoration Interdependencies in the Wake of Hurricane Sandy. *Journal of Infrastructure Systems*, 22(1), 04015007, March 2016.

11. T.E. Kannon[†], **S.G. Nurre**, B. J. Lunday, and R.R. Hill. The Aircraft Routing Problem with Refueling. *Optimization Letters*, 9(8), pp. 1609-1624, December 2015.

12. **S.G. Nurre** and T.C. Sharkey. Integrated Network Design and Scheduling Problems with Parallel Identical Machines: Complexity Results and Dispatching Rules. *Networks*, 63(4), pp. 306-326, July 2014.

13. **S.G. Nurre**, R. Bent, F. Pan, and T.C. Sharkey. Managing Operations of Plug-In Hybrid Electric Vehicle (PHEV) Exchange Stations for use with a Smart Grid. *Energy Policy*, 67, pp. 364-377, April 2014.

14. **S.G. Nurre**, B. Cavdaroglu, J.E. Mitchell, T.C. Sharkey, and W.A. Wallace. Restoring Infrastructure Systems: An Integrated Network Design and Scheduling Problem. *European Journal of Operational Research*, 223(3), pp. 794-806, December 2012.

Refereed Book Chapters

1. **S.G. Nurre**, T.C. Sharkey, and J.E. Mitchell. Increasing the Resiliency of Local Supply Chain Distribution Networks against Multiple Hazards. Book Chapter in *Supply Chain Management and Logistics: Innovative Strategies and Practical Solutions*. Edited by Z. Liang, W. Art Chaovalitwongse, and L. Shi. Published by CRC Press, Taylor & Francis Group, 2016.

2. T.C. Sharkey and **S.G. Nurre**. Quantitative Models for Infrastructure Restoration after Extreme Events: Network Optimization meets Scheduling. Accepted for the book *Mathematics of Planet Earth* to be published by Springer.

Submitted Manuscripts

1. A. Gaddy[†], S.V. Hernandez and **S.G. Nurre**. Considering Truck Parking Availability and Hours-of-Service Regulations in Driver Routing and Scheduling.

2. N. Enayaty Ahangar, K.M. Sullivan, and **S.G. Nurre**. Modeling Interdependencies in Infrastructure systems using multi-layered network flows.

3. A. Asadi[†] and **S.G. Nurre**. A Stochastic Two-Level Integrated Inventory Problem for Battery Swap Stations.

4. A. Garay Sianca[†] and **S.G. Nurre**. Interdependent Integrated Network Design and Scheduling Problems with Movement of Machines.

5. H. Bui, H.A. Pierson, **S.G. Nurre**, and K.M. Sullivan. Toolpath Planning for Multi-Gantry Additive Manufacturing

Conference Proceedings

1. H. Bui[†], H.A. Pierson, **S.G. Nurre**, and K.M. Sullivan. Tool Path Planning Optimization for Multi-Tool Additive Manufacturing. *25th International Conference on Production Research*, Chicago, IL, August 2019.

2. O. Kwizera[†] and **S.G. Nurre**. Using Drones for Delivery: A Two-Level Integrated Inventory Problem with Battery Degradation and Swap Stations. *Proceedings of the Industrial and Systems Engineering Research Conference*, Orlando, Florida, May 2018.

3. A. Garay Sianca[†], S.G. Nurre, C.L. Castros Salas, and H.R. Alvarez A. Data Processing on Large Interdependent Networks: An Application for Infrastructure Preparedness and Restoration, *6th Engineering Sciences and Technology International Conference*, Panama City, Panama, 2017.

4. T.E. Kannon[†], **S.G. Nurre**, B.J. Lunday, and R.R. Hill. The Aircraft Routing with Air Refueling Problem: Exact and Greedy Approaches. *Proceedings of the Industrial and Systems Engineering Research Conference*, Montréal, Canada, June 2014. Recipient of the Best Paper Award in the Homeland Security Track.

5. M.T. Martin, **S.G. Nurre**, and M.R. Grimaila. Modeling Shared Drive Utilization Using Stochastic Techniques. *Proceedings of the International Conference on Information and Knowledge Engineering*, Las Vegas, NV, July 2014.

6. **S.G. Nurre** and T.C. Sharkey. On Student Use and Perception of Video Tutorials in an Undergraduate Operations Research Course within an Engineering Curriculum. *Proceedings of the Industrial and Systems Engineering Research Conference*, San Juan, Puerto Rico, May 2013.

7. B. Cavdaroglu, **S.G. Nurre**, J.E. Mitchell, T.C. Sharkey, and W.A. Wallace. Decomposition Methods for Restoring Infrastructure Systems. *Proceedings of the International Conference on Vulnerability and Risk Analysis and Management*, Hyattsville, MD, 2011.

8. **S.G. Nurre** and T.C. Sharkey. Restoring Infrastructure Systems: An Integrated Network Flow and Scheduling Problem. *Proceedings of the Industrial Engineering Research Conference*, Cancun, Mexico, 2010.

Funded Research - $962,620

- S.G. Nurre. *Digitizing Load Planning*, J.B. Hunt Innovation Center of Excellence, $72,656 (May 2019-May 2020).

- S.G. Nurre, K.M. Sullivan, and B.R. Runkle. *Informing post-disaster restoration through modeling interdependent agriculture and transportation networks*, MarTREC, $247,137 (August 2018-July 2020).

- S.G. Nurre and C.E. Rainwater. *Introduction to Operations Research and Management Science*, Chevron, $15,000, (August 2018-December 2018).

- S.V. Hernandez and S.G. Nurre. *Prioritizing Solutions for Truck Parking*, Arkansas Commercial Truck Safety and Education Program, $250,396 (September 2018-December 2019).

- J. Geunes, S.G. Nurre, and M.A. Scott. *Fulfilled by J.B. Hunt*, J.B. Hunt, University of Arkansas, $151,666 (September 2017-August 2018).

- S.V. Hernandez and S.G. Nurre. *Evaluation of WIM Auto-Calibration Practices and Parameters*, Arkansas Department of Transportation, $174,545 (July 2017-December 2018)

- S.G. Nurre, K.M. Sullivan, and B.R. Runkle. *Classification of the Interdependencies in the Food and Agriculture Critical Infrastructure Sector in Arkansas*, Engineering Research and Innovation Seed Funding, University of Arkansas, $24,809 (July 2017-June 2018).

- S.G. Nurre and S.V. Hernandez. *Truck Parking with Hours of Service Regulations*, University of Arkansas Honors College Faculty Equipment and Technology Grant, $6,000 (March 2016 - March 2017).

- S.G. Nurre. *The Dependence of Infrastructure Restoration on Transportation Networks*, Southern Plains Transportation Center, $20,411 (August 2016-August 2017).

Presentations and Posters

Invited Seminar Presentations

1. University of Arkansas. Society for Industrial and Applied Mathematics/Association for Women in Mathematics Seminar Series. *Operating Battery Swap Stations: A Scheduling, Allocation, and Inventory Replenishment Approach*. October 2019.

2. University of Houston. Department of Industrial Engineering. *Operating Drone Battery Swap Stations: A Two-Level Integrated Inventory Approach*. March, 2019.

3. Mississippi State University. Department of Industrial and Systems Engineering. *Optimal Policies for the Management of an Electric Vehicle Battery Swap Station*. July 2016.

4. University of Arkansas. Department of Mathematical Sciences. *Optimal Policies for the Management of an Electric Vehicle Battery Swap Station*. Febraury 2016.

5. University of Arkansas. Sam M. Walton College of Business. Department of Supply Chain Management. Brown bag series. *Integrated Network Design and Scheduling Problems with Applications to Supply Chains*. December 2015.

6. The Ohio State University. Fisher College of Business. Department of Management Sciences. Ph.D. Seminar. *The Shortest Path Problem with Replenishment: Applications to Aircraft and Electric Vehicle Routing*. April 2015.

7. Los Alamos National Laboratory. Center for Nonlinear Studies Smart Grid Seminar Series. July 2011.

Conference Presentations <small>(presenter listed first)</small>

1. A. Asadi[†] and **S.G. Nurre**. *Optimal Policies for EV and Drone Swap Stations Under Uncertainty*. Industrial and Systems Engineering Research Conference, Orlando, Florida, May 2019.

2. **S.G. Nurre** and A. Garay-Sianca[†]. *Infrastructure Restoration with Machine Movement*. Industrial and Systems Engineering Research Conference, Orlando, Florida, May 2019.

3. **S.G. Nurre** and O. Kwizera[†]. *Operating Drone Battery Swap Stations: A Two-Level Integrated Inventory Approach*. Industrial and Systems Engineering Research Conference, Orlando, Florida, May 2019.

4. H. Bui[†], H.A. Pierson, and **S.G. Nurre** *Tool Path Planning Optimization for Multi-Tool Additive Manufacturing*. Industrial and Systems Engineering Research Conference, Orlando, Florida, May 2019.

5. A. Asadi[†] and **S.G. Nurre**. *An Integrated Two-level Inventory Problem: Applications to Battery Management in Electric Vehicle and Drone Swap Stations*. INFORMS Annual Meeting, Phoenix, AZ, November 2018.

6. A. Garay-Sianca[†] and **S.G. Nurre**. *A Post Disaster Infrastructure Restoration Model: The Interdependent Integrated Network Design and Scheduling Problems with Machine Movement*. INFORMS Annual Meeting, Phoenix, AZ, November 2018.

7. O. Kwizera[†] and **S.G. Nurre**. *A Deterministic Two-level Integrated Inventory Approach for Inventory Management at a Drone Battery Swap Station*. INFORMS Annual Meeting, Phoenix, AZ, November 2018.

8. J. Doerpinghaus[†], **S.G. Nurre**, K.M. Sullivan, and B.R. Runkle. *Classification of the Interdependencies in the Food and Agriculture Critical Infrastructure in Arkansas*. INFORMS Annual Meeting, Phoenix, AZ, November 2018.

9. O. Kwizera[†] and **S.G. Nurre**. *Using Drones for Delivery: A Two-Level Integrated Inventory Problem*. Industrial and Systems Engineering Research Conference, Orlando, Florida, May 2018.

10. A. Asadi[†] and **S.G. Nurre**. *Battery Swap Station Inventory Management for Electric Vehicles and Drones*. Industrial and Systems Engineering Research Conference, Orlando, Florida, May 2018.

11. A. Garay-Sianca[†] and **S.G. Nurre**. *Post Disaster Infrastructure Restoration with Transportation Interdependence*. Industrial and Systems Engineering Research Conference, Orlando, Florida, May 2018.

12. A. Garay-Sianca[†] and **S.G. Nurre**. *Restoration of Interdependent Infrastructures using Integrated Network Design and Scheduling Problems with Machine Movement Interdependence*. INFORMS Annual Meeting, Houston, TX, October 2017.

13. A. Asadi[†] and **S.G. Nurre**. *Integrated Two-Level Inventory Problems: Applications to Electric Vehicle and Drone Battery Management*. INFORMS Annual Meeting, Houston, TX, October 2017.

14. N. Enayaty, K.M. Sullivan, and **S.G. Nurre**. *Solution Methods for the Interdependent Network Flow Problem*. INFORMS Annual Meeting, Houston, TX, October 2017.

15. A. Garay-Sianca[†] and **S.G. Nurre**. *Interdependent Integrated Network Design and Scheduling Problems with Machine Movement*. Industrial and Systems Engineering Research Conference, Pittsburgh, PA, May 2017.

16. N. Enayaty, K.M. Sullivan, and **S.G. Nurre**. *A Decomposition Approach to the Multi-layered Interdependent Network Flow Problem*. Industrial and Systems Engineering Research Conference, Pittsburgh, PA, May 2017.

17. A. Gaddy[†], S.V. Hernandez, and **S.G. Nurre**. *A Quantitative Model For Truck Parking And Hours Of Service Regulations*. INFORMS Annual Meeting, Nashville, TN, November 2016.

18. K.R. Schneider and **S.G. Nurre**. *The Foodbank Compliance Problem: A Multicriteria Vehicle Routing Approach*. INFORMS Annual Meeting, Nashville, TN, November 2016.

19. N. Enayaty, K.M. Sullivan, and **S.G. Nurre**, B.J. Lunday, and M.J. Robbins. *Network Flow Models for Analyzing Vulnerabilities in Interdependent Infrastructures*. Industrial and Systems Engineering Research Conference, Anaheim, CA, May 2016.

20. R.S. Widrick[†], **S.G. Nurre**, and M.J. Robbins. *Optimal Policies for the Management of an Electric Vehicle Battery Swap Station*. Industrial and Systems Engineering Research Conference, Anaheim, CA, May 2016.

21. B.J. Lunday, N.R. Paul, and **S.G. Nurre**. *A Maximal Conditional Covering Location Problem to Relocate Emergency Response Enterprise Units*. INFORMS Annual Meeting, Philadelphia, PA, November 2015.

22. K.M. Sullivan, **S.G. Nurre**, B.J. Lunday, and M.J. Robbins. *Flow Networks with Interdependent Commodities*. INFORMS Annual Meeting, Philadelphia, PA, November 2015.

23. **S.G. Nurre** and C. Hergenreter[†]. *Multi-Graph Vitality Measures with Applications to A Communications Network*. INFORMS Annual Meeting, Philadelphia, PA, November 2015.

24. K.R. Schneider and **S.G. Nurre**. *Improving the Site Visit Schedule of A Hunger Relief Charity*. INFORMS Cincinnati-Dayton Fall Technical Conference, October 2015.

25. K.R. Schneider and **S.G. Nurre**. *Improving the Site Visit Schedule of A Hunger Relief Charity*. Industrial and Systems Engineering Research Conference, Nashville TN, June 2015.

26. R.S. Widrick[†], **S.G. Nurre**, and M.J. Robbins. *Optimal Policies for the Management of a Plug-In Hybrid Electric Vehicle Swap Station*. INFORMS Computing Society Conference, Richmond, VA, January 2015.

27. **S.G. Nurre**, T.E. Kannon[†], and B.J. Lunday. *The Shortest Path Problem with Replenishment*. INFORMS Annual Meeting, San Francisco, CA, November 2014.

28. B.J. Lunday, T.E. Kannon[†], **S.G. Nurre**, and R.R. Hill. *Aircraft Routing with Aerial Refueling*. INFORMS Annual Meeting, San Francisco, CA, November 2014.

29. R.S. Widrick[†], **S.G. Nurre**, and M.J. Robbins. *Plug-In Hybrid Electric Vehicle Battery Swap Station Management*. Poster Presentation. INFORMS Cincinnati-Dayton Fall Technical Conference, August 2014.

30. **S.G. Nurre**, T.E. Kannon[†], B.J. Lunday, and R.R. Hill. *The Aircraft Routing with Air Refueling Problem: Exact and Greedy Approaches*. Industrial and Systems Engineering Research Conference, Montréal, Canada, May 2014.

31. **S.G. Nurre** and T.C. Sharkey. *On Student Use and Perception of Video Tutorials in an Undergraduate Operations Research Course within an Engineering Curriculum*. Industrial and Systems Engineering Research Conference, San Juan, Puerto Rico, May 2013.

32. **S.G. Nurre** and T.C. Sharkey. *Integrated Network Design and Scheduling Problems with Multi-Function Machines*. INFORMS Computing Society Conference, Santa Fe, NM, January 2013.

33. **S.G. Nurre** and T.C. Sharkey. *Integrated Network Design and Scheduling Problems with Release Dates*. INFORMS Annual Meeting, Phoenix, AZ, October 2012.

34. **S.G. Nurre** and T.C. Sharkey. *An Overview of Integrated Network Design and Scheduling Problems*. Poster Presentation, INFORMS Annual Meeting, Phoenix, AZ, October 2012.

35. **S.G. Nurre** and T.C. Sharkey. *Integrated Network Design and Scheduling Problems with Flexible Release Dates*. Industrial and Systems Engineering Research Conference, Orlando, FL, May 2012.

36. **S.G. Nurre** and T.C. Sharkey. *Integrated Network Design and Scheduling Problems with Flexible Release Dates*. Industrial and Systems Engineering Research Conference, Orlando, FL, May 2012.

37. **S.G. Nurre** and T.C. Sharkey. *Integrated Network Design and Scheduling Problems with Release Dates*. INFORMS Optimization Society Conference, Miami, FL, February 2012.

38. **S.G. Nurre** and T.C. Sharkey. *Parallel Resource Integrated Network Design and Scheduling (INDS) Complexity Analysis and Dispatching Rules*. INFORMS Annual Meeting, Charlotte, NC, November 2011.

39. **S.G. Nurre** and T.C. Sharkey. *Dispatching Rules for Network-based Scheduling*. INFORMS Annual Meeting, Austin, TX, November 2010.

40. **S.G. Nurre**, B. Cavdaroglu, J.E. Mitchell, T.C. Sharkey, and W.A. Wallace. *Restoring Infrastructure Systems: An integrated network design and scheduling problem*. Poster Presentation, Health and Humanitarian Logistics Conference, Georgia Institute of Technology, Atlanta, GA, March 2010.

Student Supervision

Current Students

1. Amin Asadi. Ph.D. *Stochastic Two-Level Integrated Inventory Problems: Applications to Electric Vehicle and Drone Battery Swap Stations*, expected May 2020.

2. Aniela Garay Sianca. Ph.D. *Infrastructure Restoration Interdependence on the Transportation Network*, expected May 2021.

3. Hieu Bui. Ph.D., expected May 2023.

4. Jakhongir Khatamov. M.S., expected December 2020.

5. Madeline Suellentrop. Undergraduate Honors Thesis. *Locating Drone Battery Swap Stations to Facilitate the Delivery of Blood to Rural Areas*, expected May 2021.

6. Brandon Satterwhite. Undergraduate Honors Thesis. *Sports Draft Optimization*, expected May 2020.

Graduated M.S. Students

1. Olivier Kwizera. M.S. *Two-Level Integrated Inventory Problems: Applications to managing drone battery swap stations.*, May 2019.

2. Melissa Quinton. M.S. Coursework Exam, May 2019.

3. John Doerpinghaus. M.S. *Classifying Interdependencies in the Food and Agriculture Critical Infrastructure Sector*, December 2018.

4. Kari Lund. M.S. Coursework Exam, May 2018.

5. Aniela Garay Sianca. M.S. *Interdependent Integrated Network Design and Scheduling Problems with Movement of Machines*, August 2017.

6. Jacob Forbes. M.S. *Restoration and Humanitarian Aid Delivery on Interdependent Transportation and Communication Network*, March 2015.

7. Christopher Hergenreter. M.S. *Determining the Most Vital Arcs Within a Multi-Mode Communication Network using Set-Based Measures*, March 2015.

8. Rebecca Widrick. M.S. *Optimal Policies for the Management of a Plug-In Hybrid Electric Vehicle Swap Station*, March 2015.

9. Tanya E. Kannon. M.S. *Improving the Air Mobility Command's Air Refueling Route Building Capabilities*, March 2014.

Graduated Undergraduate Students

1. Morgan Hartsell. Undergraduate Honors Thesis. *Descriptive Analytics for Truck Parking and Hours and Service*, May 2019.

2. Alexis Gaddy. Undergraduate Honors Thesis. *A Model of National Truck Parking Usage as a Function of Hours of Service (HOS) Regulations*, May 2017.

Committee Participation

1. Justin Taylor, M.S. Industrial Engineering, Expected December 2019. Chair: Ashlea Milburn.

2. Andrew Gibson, Ph.D. Industrial Engineering, Expected May 2020. Chair: Manuel Rossetti.

3. Yu (Chelsea) Jin, Ph.D. Industrial Engineering, Expected May 2020. Chairs: Harry Pierson and Haitao Liao.

4. Hieu Bui, M.S. Industrial Engineering, Summer 2019. Chair: Harry Pierson.

5. Mohannad R. Kabli, Ph.D. Industrial Engineering, Summer 2018. Chair: Mohammad Marufuzzaman.

6. Negin Enayaty Ahangar, Ph.D. Industrial Engineering, Summer 2018. Chair: Kelly Sullivan.

7. Andres Vargas Rojas, M.S. Industrial Engineering, December 2016. Chair: Greg Parnell.

8. Tiffany Yang, M.S. Industrial Engineering, May 2016. Chair: Kelly Sullivan.

9. Lyndsey Buckle, M.S. Systems Engineering. June 2015. Chair: John Colombi.

10. Nicholas Paul, M.S. OR. March 2015. Chair: Brian Lunday.

11. Margaret Martin, M.S. OR. June 2014. Chair: Michael Grimaila.

12. Garret Fett, M.S. OR. March 2014. Chair: Raymond Hill.

13. Jonathan White, M.S. OR. March 2014. Chair: Jeff Weir.

Awards

- INFORMS Moving Spirit Award, November 2018.

- Outstanding Service to Students Award, College of Engineering, University of Arkansas, May 2018.

- INFORMS Volunteer Service Award, October 2017.

- New Faculty Commendation, Wally Cordes Teaching Faculty Support Center, University of Arkansas, September 2017.

- ISERC Best Paper Award, Homeland Security Track, 2014 Industrial and Systems Engineering Research Conference, Montréal, Canada, May 2014.

- The Del and Ruth Karger Dissertation Prize for Outstanding DSES Thesis, Rensselaer Polytechnic Institute, March 2014.

- Omega Rho - International Honor Society for Operations Research and Management Science.

- Fellow, Faculty Fellowship Program, Air Force Institute of Technology, December 2013 - Present.

- Sandia National Laboratories and Rensselaer Polytechnic Institute (RPI) Excellence in Engineering Research Fellowship, August 2011 - May 2013.

- RPI Founder's Award of Excellence, October 2010.

- Chauncey and Doris Starr Fellowship, Rensselaer Polytechnic Institute, August 2009 - August 2010.

Student Awards

- Morgan Hartsell, 2019. Outstanding Senior, University of Arkansas, Department of Industrial Engineering. Awarded to the top Senior.

- Melissa Quinton, 2019. Outstanding Graduate Student, University of Arkansas, Department of Industrial Engineering. Awarded to the top graduating Graduate student.

- Rebecca Widrick. 2016. Institute of Industrial and Systems Engineers Graduate Research Award. Awarded to the best master's research in the professional society.

- Rebecca Widrick. 2015. Dean's Award. Awarded to the best master's thesis in each department at AFIT.

- Tanya Kannon. 2014. Distinguished Graduate. Top 10% of students based on GPA at AFIT.

Professional Development

- Teaching Camp, University of Arkansas, Fayetteville, AR, August 2017.

- Wally Cordes Teaching Faculty Support Center Teaching Seminars, University of Arkansas, Fayetteville, AR, August 2015-Present.

- NSF CMMI CAREER Writing Workshop Attendee, Portland, OR, April 2017.

- IISE New Faculty Colloquium Attendee, Industrial and Systems Engineering Research Conference, Anaheim, CA, May 2016.

- NSF CAREER proposal writing workshop, University of Arkansas, Fayetteville, AR, April 2016.

- Research Camp, University of Arkansas, September 2015.

- The Reader Expectation Approach to Writing Attendee, University of Dayton, Dayton, OH, January 2015.

- INFORMS New Faculty Colloquium Attendee, INFORMS Annual Meeting, San Francisco, CA, November 2014.

- Preparing Future Faculty Workshop Attendee, Rensselaer Polytechnic Institute, Troy, NY, October 2012.

- INFORMS Future Academician Colloquium Attendee, INFORMS Annual Meeting, Phoenix, AZ, October 2012.

- IIE Doctoral Colloquium Attendee, Industrial Engineering Research Conference, Orlando, FL, May 2012.

Teaching Experience

University	Course Number	Course Title	Credits	Class	Term	Number Students	Overall Assessment (out of 5.0)	Role
UARK	INEG 3613	Linear Optimization	3	U.G.	Spring 2019	5	5.0	Instructor
UARK	INEG 3613	Intro to Operations Research	3	U.G.	Spring 2019	53	4.0	Instructor
UARK	INEG 5613	Optimization Theory	3	U.G.	Fall 2018	16	4.6	Instructor
UARK	INEG 3613	Intro to Operations Research	3	U.G.	Spring 2018	45	4.4	Instructor
UARK	INEG 614V	Scheduling Theory	3	Grad.	Fall 2017	7	4.9	Instructor

UARK	INEG 5613	Optimization Theory	3	Grad.	Fall 2017	13	4.3	Instructor
UARK	INEG 3613	Intro to Operations Research	3	U.G.	Spring 2017	38	4.2	Instructor
UARK	INEG 5613	Optimization Theory	3	Grad.	Fall 2016	18	4.5	Instructor
UARK	INEG 3613	Intro to Operations Research	3	U.G.	Spring 2016	63	4.4	Instructor
UARK	INEG 5613	Optimization Theory	3	Grad.	Fall 2015	5	4.8	Instructor
AFIT	OPER 623	Heuristic Search Methods	3	Grad.	Spring 2015	9	4.4	Instructor
AFIT	OPER 500/601	Seminar in Operational Sciences	1	Grad.	Winter 2015	72	4.3	Instructor
AFIT	OPER 510	Introduction to Math Programming	4	Grad.	Fall 2014	33	3.8	Instructor
AFIT	OPER 626	Scheduling Theory	3	Grad.	Summer 2014	4	4.8	Instructor
AFIT	OPER 623	Heuristic Search Methods	3	Grad.	Spring 2014	5	4.4	Instructor
AFIT	OPER 540	Stochastic Modeling and Analysis	4	Grad.	Winter 2014	37	4.2	Instructor
AFIT	OPER 621	Multicriteria Optimization	3	Grad.	Fall 2013	34	4.5	Instructor
RPI	ISYE 4600/6610	Operations Research Methods	4	U.G.	Fall 2012	55	-	TA with Video Tutorials
RPI	PHIL 2140	Introduction to Logic	4	U.G.	Fall 2006		-	TA

Service and Professional Activities

Professional Community

- Fora Representative, INFORMS Subdivisions Council, January 2018-Present.

- Member, INFORMS Chapters/Fora Committee, January 2018-Present.

- Member, INFORMS Professional Recognition Committee, January 2018-Present.

- Past President, INFORMS Women in OR/MS, January 2018- December 2018.

- President, INFORMS Women in OR/MS, January 2017 - December 2017.

- President Elect, INFORMS Women in OR/MS, January 2016 - December 2016.

- Secretary, INFORMS Women in OR/MS, January 2014 - December 2015.

- Member, INFORMS Women in OR/MS, Advancement in ORMS Award Committee, Fall 2013.

- Referee for:

  Annals of Operations Research

  Asia-Pacific Journal of Operational Research

  Computers & Industrial Engineering

  Computers & Operations Research

  Energy Policy

  European Journal of Operational Research

  IEEE Transactions on Systems, Man, and Cybernetics: Systems

IEEE Transactions on Reliability	*Military Operations Research*
IET Generation, Transmission & Distribution	*Naval Research Logistics*
IIE/IISE Transactions	*Networks*
INFORMS Transactions on Education	*Omega*
INFORMS TutORials 2015	*Optimization Letters*
Int. Journal of Production Research	*Production and Operations Management*
Int. Journal of Electrical Power & Energy Systems	*Reliability Engineering and System Safety*
Journal of Aircraft	*Transactions on Reliability*
Journal of Global Optimization	*Transportation Research Part E*
Journal of Industrial and Management Optimization	*Transportation Science*
Journal of Mathematical Modeling and Algorithms	*2018, 2017, 2014, 2013, 2012 ISERC*
Management Science	*2015 ICS Conference*

Departmental and University Service

- Advisor, Arkansas IISE Chapter, 2016-Present.

- Panelist, NSF PATH, University of Arkansas, July 2018.

- Graduate Student Recruiter for Industrial Engineering, Hendrix College, August 2016-Present.

- Session Organizer and Speaker, *MarTREC GirlTREC Girl Camp*, July 2017, 2018.

- Member, University of Arkansas Industrial Engineering Global Studies Committee, 2015 - 2016, 2017-Present.

- Industrial Engineering Session, University of Arkansas Razorback Reveal, October 2015, 2016, 2017.

- Member, University of Arkansas Industrial Engineering Faculty Search Committee, 2015 - 2016, 2016 - 2017.

- Member, University of Arkansas Industrial Engineering Undergraduate Committee, 2015 - 2017.

- Interviewer, University of Arkansas Engineering Research Coordinator Position, December 2015.

- Member, AFIT Center for Operational Analysis Center Director Search Committee, 2015.

- Panelist, New Faculty Orientation, Air Force Institute of Technology, September 2014.

- Member, AFIT Departmental Operations Research Curriculum Committee, 2014.

Conference Activities

- Invited Panelist, INFORMS Annual Meeting, Doctoral Student Colloquium, Houston, TX, October 2017.

- Session Chair, ISERC, Operations Research Track, Pittsburgh, PA, May 2017.

- Cluster Chair, INFORMS Annual Meeting, Women in OR/MS Cluster, Nashville, TN, November 2016.

- Session Chair, INFORMS Annual Meeting, Women in OR/MS Cluster, Nashville, TN, November 2016.

- Poster Judge, ISERC, Anaheim, CA, May 2016.

- Session Chair, ISERC, Energy Systems Track, Anaheim, CA, May 2016.

- Session Chair (2 sessions), ISERC, Operations Research Track, Anaheim, CA, May 2016.

- Session Chair, INFORMS Computing Society Conference, Richmond, VA, January 2015.

- Session Chair, INFORMS Annual Meeting, San Francisco, CA, November 2014.

- Poster Judge, INFORMS Annual Meeting, Interactive Sessions, San Francisco, CA, November 2014.

- Session Chair, INFORMS Annual Meeting, Minneapolis, MN, October 2013.

Diversity and Other Professional Activities

- Fora Representative for organizations including the Minority Issues Forum and the Women in OR/MS forum, INFORMS Subdivisions Council, January 2018-Present.

- Session Organizer and Speaker, *MarTREC GirlTREC Girl Camp*, July 2017.

- Past-President, *INFORMS Women in OR/MS*, January 2018-December 2018.

- President, *INFORMS Women in OR/MS*, January 2017-December 2017.

- President-Elect, *INFORMS Women in OR/MS*, January 2016-December 2016.

- Secretary, *INFORMS Women in OR/MS*, January 2014-December 2015.

- Guest Speaker, *NSF ADVANCE Engineering Institute for Young Women*, Rensselaer Polytechnic Institute, July 2012.

- Graduate Student Panelist, *NSF LSAMP REU Program*, Rensselaer Polytechnic Institute, June 2012.

- Guest Speaker, *Accepted Students Day 2012*, Rensselaer Polytechnic Institute, April 2012.

- Graduate Student Panelist, *Grad School Panel: I wish I knew then, what I know now*, SUNY Albany, March 2012.

- Teaching Session Chair, *Exploring Engineering Day*, Rensselaer Polytechnic Institute, February 2012.

Other Working Experience

Research Assistant, Department of Industrial and Systems Engineering, Rensselaer Polytechnic Institute, October 2009 - July 2013. Advisor: Thomas C. Sharkey.

Risk Analysis and Decision Support Graduate Intern, Los Alamos National Lab, Summer 2011. Managers: Feng Pan and Russell Bent.

Analyst Development Program Rotational Analyst, Progressive Insurance, August 2007 - August 2009. Rotations in HR Systems, Special Lines Pricing, Loss Reserving, and Claims Control.

Professional Affiliations

Institute for Operations Research and the Management Sciences (INFORMS)

- Member 2009-Present
- Optimization Society, Computing Society
- Women in ORMS Forum
- Subdivisions Council Member

Institute for Industrial and Systems Engineers (IISE)

- Member 2011-Present
- Arkansas student chapter advisor

Omega Rho International Honor Society for Operations Research and Management Science

- Member 2013-Present

Workforce Analysis

Institution: UA-Fayetteville

Program Name: Master of Science in Operations Analytics

Proposed CIP Code: 14.3701

By: ADFA Economic Policy Division

Date: October 23, 2019

UA-Fayetteville proposes to introduce a new Master of Science (MS) in Operations Analytics, classified under the CIP code for Operations Research. This is a promising field likely to lead students into lucrative employment, yet labor market data should warn program designers against complacency. On the one hand, the labor market in Arkansas for Operations Research Analysts, the main target occupation, is favorable to new entrants, with rapid job growth and high wages. The occupation is only moderately job-rich, but educational pipelines for entering it are scarce, suggesting that graduates will find themselves in a strong bargaining position in a labor market niche. But a dive into job postings data suggests a rather different picture. Job titles are extremely diffuse, and job postings that can be classified as being for Operations Research Analysts usually don't mention that phrase, while many other jobs do. Employers are looking for specific software and general analytical skills, but also communication and other soft skills related to navigating and succeeding in large organizations. Master's degree graduates in Operations Analytics have opportunities for lucrative careers, but may find the transition from classroom to workplace tricky.

Academic Outlook

Operations research is a growing field for academic awards, as shown in Table 1. In this respect, it resembles other data and analytics fields, and its rise reflects the efforts of organizations to make good use of the surge in computing power that has occurred over the past generation. The commonest award level is a Master's degree, which has consistently been awarded in larger numbers than Bachelor's degrees, and the gap is increasing: whereas in 2010-11 there were about 50% more Master's than Bachelor's, in 2016-2017 Master's degrees were more than double Bachelor's. There is also a small and not increasing number of Doctorates, a volatile but recently slightly larger number of Post-Bachelor's, and a handful of other awards. Note that these are all national figures because no awards have been made in the field of Operations Research to this time, as far as our data indicate.

Table 1: Growing numbers of awards in Operations Research nationally (none in Arkansas)

	2010	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Award Level	**Awards**	**Awards**	**Awards**	**Awards**	**Awards**	**Awards**	**Awards**	**Awards**
All Award Levels	1,062	1,120	1,188	1,339	1,454	1,338	1,448	1,534
Associate's	7	10	4	8	5	3	7	

Bachelor's	398	423	417	429	478	419	405	460
Post-Baccalaureate	56	45	18	71	105	85	96	112
Master's	536	574	685	748	787	765	862	895
Post-Master's	5	9	7	13	9	8	8	5
Doctorate	60	59	57	70	70	58	70	62

Matched Occupations

Two occupations are matched with the field of Operations Research according to NCES: (a) Operations Research Analysts and (b) Natural Sciences Managers. While neither occupation is exceptionally job-rich, as shown in Table 2, the larger occupation, Operations Research Analysts, is matched with only two CIP fields of study, Operations Research and Management Science. There are no programs in Operations Research in Arkansas at the present time. There are five programs in Management Science, two Bachelor's (UA-Fayetteville and UALR), two Master's (UA-Fayetteville and UALR) and one Graduate Certificate (UA-Fayetteville). Management Science, moreover, is matched with three other occupations, Chief Executives and General and Operations Managers, and Postsecondary Business Teachers. With moderate demand and little supply, MS graduates in Operations Research may find themselves favorably positioned in the labor market for Operations Research Analysts.

Table 2 shows total employment, average annual wages, and several other labor market indicators for the matched occupations. There has been robust 5.7% growth in the number of Operations Research Analysts in recent years, which is forecast to slow somewhat but continue. Vigorous advertising and low unemployment further indicate a strong labor market.

Table 2: Demand for matched occupations in Arkansas

	Current				5-Year History	1-Year Forecast				
Occupation	**Empl**	**Avg Ann Wages**[2]	**Unempl Rate**	**Online Job Ads**[3]	**Ann %**	**Total Demand**	**Exits**	**Transfers**	**Empl Growth**	**Ann % Growth**
Operations Research Analysts	665	$61K	1.7%	161	5.7%	59	15	28	17	2.5%
Natural Sciences Managers	284	$110K	1.1%	26	2.7%	25	6	16	2	0.7%

Table 3 shows the educational attainment profile of the matched occupations. While both are considered to require only a Bachelor's degree as the typical entry level education, in fact most Natural Sciences Managers have a Master's or a PhD. Since this occupation also typically require 5 years or more of previous work experience, it will probably be out of reach for most MS graduates in Operations Research. For Operations Research Analyst positions, by contrast, MS graduates may be a bit overqualified, since most incumbent workers have a Bachelor's degree or (for a small minority) less.

SOC	Occupation	< High School	High School	Some College	Two-Year	Four-Year	Master's	PhD	Forecast Ann Growth	Unempl Rate
11-9121	Natural Sciences Managers	0.3%	1.5%	2.9%	2.2%	36.4%	35.1%	21.5%	0.6%	1.1%
15-2031	Operations Research Analysts	0.1%	5.6%	9.9%	5.3%	45.6%	27.9%	5.7%	2.4%	1.7%

Table 4 shows that the matched occupations are well-paid, with the pay scale for Operations Research Analysts being more important because this is the more accessible occupation. Even at the entry level, and at the 10th percentile of the wage distribution, Operations Research Analysts make a living wage, and in the upper percentiles they approach affluence. Operations Research Analysts can expect their wages to double as they become experienced. But the national average wage of $88,400 is over one-third more than the Arkansas average wage of $61,400, suggesting that many Master's degree graduates in Operations Research are likely to leave the state.

Table 4: Wage profile of matched occupations

Occupation	Mean	Entry Level	Experienced	Percentiles					Mean	
				10%	25%	50% (Median)	75%	90%	USA	USA
Natural Sciences Managers	$110K	$60K	$135K	$52K	$76K	$100K	$129K	$171K	$140K	$140K
Operations Research Analysts	$61K	$37K	$73K	$36K	$42K	$55K	$76K	$98K	$88K	$88K

Job Postings

Two searches of Chmura Analytics' job postings data were conducted, in order to try to get around the difficulty of classifying jobs in the fluid space where data science overlaps with business. First, we searched for job postings with Chmura classified as being for the two target occupations, Natural Sciences Managers and Operations Research Analysts. Second, we searched for jobs with the keyword "Operations Research" in the posting. Descriptions follow of what we found.

Search 1. Job Postings Classified as "Operations Research Analysts" or "Natural Sciences Managers"

The vast majority of jobs found were for Operations Research Analysts, as shown in Table 5. It turns out that most of the jobs for Natural Sciences Managers were specifically in the sub-occupation Clinical Research Coordinators, with far fewer jobs for Natural Sciences Managers proper.

Occupation	Total Ads
Operations Research Analysts	811
Clinical Research Coordinators	119
Natural Sciences Managers	10
Water Resource Specialists	1

Table 6 shows top employers of Operations Research Analysts. While big corporate employers top the list, the top 20 only account for 37.1% of the job postings. Still, most job postings do seem to come from large organizations, sometimes outside the state.

Table 6: Top employers recruiting in matched occupations in the 12 months to October 20, 2019

Employer Name	Total Ads
Walmart	62
U.S. Bank	29
FIS	27
Arkansas Blue Cross	26
University of Arkansas Medical Sciences	22
Windstream	19
J&J Family of Companies	18
Bank OZK	16
Entergy	15
Murphy Oil USA	14
UAMS Medical Center	14
Tyson Foods	12
Arkansas State Police	11
Bayer	11
Anthem	10
ArcBest	9
Procter & Gamble	9
University of Arkansas	9
ABC Financial Services, Inc.	8
Arkansas Children's Hospital	8
TOP 20 SHARE	37.1%
ALL OTHER	592

The top hard skills sought by these employers, shown in Table 7, start with Microsoft Excel and Office, followed by SQL and coding, and statistics and data analysis. About half the skills are specific softwares

or programming languages, but more abstract or conceptual items like mathematics and finance also show up.

Table 7: Top hard skills sought in matched occupations in job postings in the 12 months to October 20, 2019

Skill Name	Total Ads
Microsoft Excel	291
Microsoft Office	181
Structured Query Language (SQL)	137
Statistics	131
Computer Programming/Coding	125
Data Analysis	105
Microsoft PowerPoint	94
Microsoft Word	92
Statistical Analysis System (SAS)	80
Mathematics	76
Clinical Research	75
Microsoft Outlook	70
Personal Computers (PC)	70
Python	63
SAP	52
Finance	50
Microsoft Access	50
Tableau	50
Teaching/Training, Job	47
Machine Learning	36

By far the most common soft skill sought in these job postings is Communication, as shown in Table 8, followed by, somewhat relatedly, teamwork. Cognitive style factors show up as well: employers want Analytical and Problem Solving skills. Other soft skills related to function in the context of the large organizations where most Operations Research Analysts work, e.g., Project Management, Organization, Confidentiality/Information Sensitivity, Interpersonal Relationships, and Supervision/Management. Academic planners may want to consider how to recruit for and teach communication skills, since they are in such high demand, and may tend not to be the forte of quantitatively-oriented operations research students.

Table 8: Top soft skills in job postings for matched occupations in the 12 months to October 20, 2019

Skill Name	Total Ads
Communication (Verbal and written skills)	582
Cooperative/Team Player	333

Analytical	278
Self-Motivated/Ability to Work Independently/Self Leadership	242
Problem Solving	194
Detail Oriented/Meticulous	169
Project Management	155
Organization	137
Multi-Task	118
Customer Service	115
Adaptability/Flexibility/Tolerance of Change and Uncertainty	112
Ability to Work in a Fast Paced Environment	105
Confidentiality/Information Sensitivity	104
Interpersonal Relationships/Maintain Relationships	103
Accountable/Responsible/Reliable/Dependable/Trustworthy	100
Supervision/Management	100
Time Management/Time Utilization	97
Good Judgment	71
Prioritize	71
Decision Making/Decisiveness	69

Table 9 shows the top 20 job titles in the job postings brought up by this search, and they are extremely diverse. Very few are actually called Operations Research Analysts. While "Data Analyst" is the top job title, it accounts for barely 3% of the total, and all the top 20 job titles together account for just 18.8%. It seems clear that Operations Research graduates will need to seek work in a job climate where no single job title is effective in capturing the universe of jobs for which they are qualified.

Table 9: Job titles in the matched occupations are very diverse (Source: JobsEq RTI, 12 months to October 20, 2019)

Job Title	Total Ads
Data Analyst	28
ASP CACD Hotline Operator	13
Administrative Analyst	11
Inventory Analyst	11
Deputy Director - Commercial Data Science & Analytics	10
Clinical Research Coordinator	9
Analyst I-Engineering	8
Research Analyst	8
Research Assistant	8
Benefits Consultant-Telecommute	7
Data Control Associate II	7

Replenishment Analyst	7
Special Servicing Project Analyst I	7
Workforce Analyst I	7
Clinical Research Finance Administrator	6
Data Control Associate Senior	6
Deposit Operations Analyst I	6
EBI Medical Informatics Analyst I	6
Operations Analyst II	6
Research Analyst (Life, Physical, and Social Science)	6
TOP 20 SHARE	18.8%
ALL OTHERS	764

Table 10 shows that very few of these job postings actually list Master's degree as an educational requirement. Graduates who expect to gain access to a pool of jobs from which they were previously excluded by inadequate education will be largely disappointed. However, the gap between the educational requirement profile of job postings (few require Master's) and the educational attainment profile of incumbent workers (about one-third have a Master's or more) suggests that a Master's degree gives candidates a competitive edge.

Table 10: Educational requirements in job postings for matched occupations

Minimum Education Level	Total Ads
Bachelor's degree	460
High school diploma or equivalent	142
Associate's degree	54
Master's degree	34
Doctoral or professional degree	6
Unspecified/other	245

Search 2. Job Postings with the Keyword "Operations Research"

Table 11 shows that the results of a search for job postings with the keyword "Operations Research" are quite different from the results of a search for job postings classified by Chmura Analytics in the target occupations. It seems that most jobs classified by Chmura as being for Operations Research Analysts do not mention "operations research" in the job posting, while most job postings that do mention it are not classified as Operations Research Analyst positions by Chmura. Instead, they are classified into dozens of occupations, of which the top 20 comprise only 58.1%. More jobs are found altogether, and more of the jobs found seem to be lower-ranking, e.g., Computer User Support Specialists and Social and Human Service Assistants.

Table 11: Occupational classification for job postings with keyword "operations research"

Occupation	Total Ads
Operations Research Analysts	158
Business Operations Specialists, All Other	65
Registered Nurses	40
Market Research Analysts and Marketing Specialists	36
Medical and Health Services Managers	32
Computer User Support Specialists	32
Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	32
Management Analysts	30
Social and Human Service Assistants	30
Marketing Managers	26
Financial Managers, Branch or Department	23
Sales Representatives, Services, All Other	20
Accountants	19
Computer and Information Research Scientists	19
First-Line Supervisors of Office and Administrative Support Workers	19
Software Developers, Applications	18
Customer Service Representatives	18
Sales Agents, Financial Services	17
Bookkeeping, Accounting, and Auditing Clerks	16
Parts Salespersons	15
TOP 20 SHARE	58.1%
ALL OTHER	480

Table 12 shows the top employers posting jobs that mention "operations research." Some of the same company names appear, but UAMS is much higher on the list. If anything, there is an even more notable spread across industries, but the dominance of large organizations is still notable.

Table 12: Top employers for job postings with keyword "operations research"

Employer Name	Total Ads
UAMS Medical Center	63
Walmart	52
Arvest Bank	45
State of Arkansas	42
University of Arkansas	29
JB Hunt	27

DaVita	26
Replacement Parts Inc.	19
American Consumer Panels	18
Oracle	18
Tyson Foods	17
Arkansas Blue Cross	13
Ivy Exec	11
J&J Family of Companies	11
U.S. Bank	11
University of Arkansas for Medical Sciences (UAMS)	11
Catholic Health Initiatives	10
University of Arkansas - Fayetteville	10
Windstream	10
ArcBest	9
TOP 20 SHARE	39.5%
ALL OTHER	693

In terms of hard skills, job postings that mention "operations research" are especially intensive in demanding Microsoft Office and other computer skills, with SQL, however, much lower in the list. Some items in the list, like "Cash Handling" and "Keyboarding/Typing," suggest lower-ranking, less cognitively intensive positions.

Table 13: Top hard skills for job postings with the keyword "operations research"

Skill Name	Total Ads
Microsoft Excel	250
Microsoft Office	246
Microsoft Word	116
Keyboarding/Typing	107
Microsoft PowerPoint	107
Microsoft Outlook	99
Personal Computers (PC)	91
Mathematics	87
Structured Query Language (SQL)	71
Finance	67
Data Analysis	61
Computer Programming/Coding	60
Statistics	60
SAP	50
Teaching/Training, Job	44
Presentation	42

Cash Handling	41
Sales	41
Word Processing	40
Python	39

Similarly, the soft skills in Table 14, while somewhat similar to Table 8, place "Customer Service" higher in the list and "Project Management" lower, suggesting that this search captures more of the experiences of a segment of the workforce that does more routine work and is less close to core managerial decision-making in large organizations.

Table 14: Top soft skills for job postings with the keyword "operations research"

Skill Name	Total Ads
Communication (Verbal and written skills)	764
Cooperative/Team Player	459
Self-Motivated/Ability to Work Independently/Self Leadership	278
Problem Solving	253
Analytical	250
Customer Service	232
Interpersonal Relationships/Maintain Relationships	204
Supervision/Management	194
Detail Oriented/Meticulous	193
Confidentiality/Information Sensitivity	175
Adaptability/Flexibility/Tolerance of Change and Uncertainty	173
Organization	168
Prioritize	144
Project Management	144
Accountable/Responsible/Reliable/Dependable/Trustworthy	128
Ability to Work in a Fast Paced Environment	124
Multi-Task	108
Leadership	93
Good Judgment	92
Initiative	87

Table 15 lists the top job titles for job postings that mention "operations research," but the top 20 share of the total is so small as to make the numbers almost meaningless. What is striking is that the top 20 job titles together account for just 8.8% of the overall job postings.

Table 15: Job titles for job postings with the keyword "operations research"

Job Title	Total Ads
Products Tester from Home (Part-time). No Exp. Required, $25-$45/hr	12
Data Analyst	8
Registered Nurse RN	8
Administrative Analyst	7
Intern	6
Registered Nurse (RN)	6
Cyber Security Infrastructure Staff IT Auditor	5
IT Security Analyst	5
Sign-On Bonus! Mortgage Servicing Call Center Representative	5
2020 Consumer Customer Development Co-Op	4
Administrative Assistant 2	4
Aerospace & Operational Physiologist	4
Bus Operator	4
Clinical Application Training Specialist - EPIC	4
iTM Specialist (Interactive Teller)	4
Accounting Technician	3
Board Certified Behavior Analyst (BCBA)	3
Clinical Application Analyst Senior	3
Controller	3
Data Scientist	3
TOP 20 SHARE	8.8%
ALL OTHER (895 job titles)	1,044

As with the previous search, though to an even greater extent, this search turns up very few jobs that require a Master's degree. Almost half require a Bachelor's, and almost another half require a high school diploma or specify no educational requirements, while the small balance mostly require Associate's degrees.

Table 16: Educational requirements for job postings with the keyword "operations research"

Minimum Education Level	Total Ads
Bachelor's degree	514
High school diploma or equivalent	282
Associate's degree	83
Master's degree	30
Doctoral or professional degree	12
Unspecified/other	224

<u>Job Placement Track Records of Related Programs</u>

No academic programs currently exist in Arkansas that give awards in Operations Research, so Table 17 provides the closest available comparators, namely, a Master's degree in Statistics from UA-Fayetteville and two Master's degrees in Management Science from UA-Fayetteville and UALR. All three programs' job placement track records are basically strong, except that high rates of non-employment in Arkansas suggest brain drain. UA-Fayetteville's Masters' in Management Science not only see its fully-employed graduates earn very high salaries of $103,193 in the first year, but even a handful of graduates whose earnings patterns were inconsistent with full employment had high earnings. (This can occur if there are gaps in employed but the rate of pay when working is high.) The fact that almost half of UA-Fayetteville Master's graduates in Management Science earned no Arkansas wages at all strongly suggests that many are moving out of state. For UA-Fayetteville's Master's degree in Statistics, salaries are over one-third lower but still high, and the same pattern holds, with half working full-time, a few more working without meeting the criteria for imputing full-time employment but still earning nearly as much, and almost half never getting onto payrolls in Arkansas, likely because of moving or working out of state. UALR had more graduates working without meeting the criteria for imputing full-time employment, but again, average earnings were high, and almost as high for the non-full-time workers as for the full-time ones, while a substantial fraction of graduates didn't show up in the wage records at all, perhaps because they moved out of state.

Table 17: Graduates of related Arkansas Master's programs and their first-year employment and earnings

School	Field of study	Grads	% employed	Avg. wage	% FTE employed	Average FTE wage
University of Arkansas Fayetteville	Statistics, General	15	53%	$56,684	50%	$62,068
University of Arkansas Fayetteville	Management Science	51	55%	$94,830	49%	$103,193
University of Arkansas at Little Rock	Management Science	26	73%	$59,449	56%	$71,517