

JOHN S. USHER, PhD, PE

*Professor and Chair
Department of Industrial Engineering*

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I. EXPERIENCE

1. Education:

PhD Industrial Engineering, North Carolina State University, 1987

“Estimating Component Reliabilities from Incomplete Accelerated Life Test Data”

Doctoral Director: Dr. Thom J. Hodgson

Master of Engineering in Industrial Engineering, University of Louisville, 1981

“A Single Depot Location Analysis: An Iterative Vehicle Scheduling Approach”

Thesis Director: Dr. Mickey R. Wilhelm

Bachelor of Science in Industrial Engineering, University of Louisville, 1980

2. Employment:

7/05 - pres Chair, Department of Industrial Engineering, University of Louisville

7/98 – 7/05 Professor of Industrial Engineering, University of Louisville

9/04 – 7/05 Site Director, Center for Engineering Logistics and Distribution

7/93 - 7/98. Associate Professor of Industrial Engineering, University of Louisville

9/87 - 7/93 Assistant Professor of Industrial Engineering, University of Louisville

5/85 - 8/87 Reliability Engineer, IBM Corporation, Research Triangle Park, NC.

1/83 - 5/85 Instructor/Graduate Research Assistant, Department of Industrial Engineering, North Carolina State University, Raleigh, NC.

3. Scientific and Honorary Societies:

Institute of Industrial Engineers (IIE), Fellow

American Society for Quality (ASQ), Member

Institute of Electrical and Electronics Engineers (IEEE), Member

American Society for Engineering Education (ASEE), Member

Registered Professional Engineer, Commonwealth of Kentucky

4. Awards and Recognition:

25 Years of Service, University of Louisville, May 2012.
Nominee, 2010-11 Faculty Favorite , University of Louisville, Delphi Center
Distinguished Alumnus, North Carolina State University, October 2009
Fellow, Institute of Industrial Engineers, May 2005
Institute of Industrial Engineers, Outstanding Faculty Advisor for Region 4, 2004
Periodic Career Review, Consistent Superior Performance Award, 2003
Alumni Scholar for Teaching, Speed Scientific School Alumni Association, 2002-2004
Certificate of Excellence, *IIE Transactions*, 2002-2005.
Distinguished Teaching Professor Award, University of Louisville, 2001
Nominee, University of Louisville Distinguished Teaching Award 2000
Finalist, University of Louisville Alumni Scholar Award – Teaching 1998
Finalist, University of Louisville Alumni Scholar Award - Research 1997
Nominee, Trustees Award 1996
Nominee, University of Louisville Distinguished Teaching Award 1995
Outstanding IE Faculty Member, U of L Chapter IIE, 1993, 1994 (no longer given)
Distinguished Service Award, Kentucky Society for Professional Engineers, 1992
University of Louisville President's Young Investigator Award, 1991
Outstanding Young Engineer Award - University of Louisville, 1989
Outstanding Graduate Teaching Assistant, NCSU, 1984
Bectin-Dickinson Quality Assurance Scholarship, 1984
Dean's Fellowship Award, NC State University, 1983

II. TEACHING

1. University Courses Taught:

IE 660 Reliability and Maintainability
EM 670 Advanced Engineering Economics
IE 621 Facilities Planning and Logistics
IE 570 Engineering Design Economics
EM 550 Probability and Statistics
EM 613 Operations Management
IE 430 Quality Control
IE 321 Facilities Location and Layout
IE 240 Fundamentals of Industrial Engineering
GES 100 Campus Culture

2. Industrial Short Courses Developed and Taught:

<i>Continuous Process Improvement</i>	<i>Business Process Improvement</i>
<i>Introduction to SPC</i>	<i>Non-Technical Statistics</i>
<i>Introduction to DOE</i>	<i>Bayesian Reliability</i>
<i>Basic Problem Solving</i>	<i>Repairable Systems Reliability</i>
<i>Introduction to ISO 9000</i>	<i>6-Sigma and Process Analysis</i>

III. RESEARCH

1. Publications:

(a) *Refereed Journals:*

1. Usher, Gornet, Starr, “Weibull Growth Modeling of Laser-Sintered Nylon 12”, to appear, *Rapid Prototyping Journal*, accepted Feb 2012.
2. Starr, T., Gornet, T., and Usher, J., “The Effect of Process Conditions on Mechanical Properties of Laser Sintered Nylon, *Rapid Prototyping Journal*, Vol. 17, Issue 6, pp.418 - 423, pp , 2011.
3. Moghaddam, K., Usher, J., “Sensitivity Analysis and Comparison of Algorithms in Preventive Maintenance and Replacement Scheduling Optimization Models”, *Computers and Industrial Engineering* Vol. 61, No. 1, pp 64-75, 2011.
4. Moghaddam, K., and Usher, J.S. “Preventive Maintenance and Replacement Scheduling for Repairable and Maintainable Systems using Dynamic Programming”, *Computers in Industrial Engineering*, Vol 60, No. 4, 654-665, 2011.
5. Moghaddam, K. and Usher, John S. “A new multi-objective optimization model for preventive maintenance and replacement scheduling of multi-component systems”, *Engineering Optimization*, Vol 43, No. 7, pp 701-719, 2011.
6. Moghaddam, K., Usher, J., Optimal Preventive Maintenance and Replacement Schedules with Variable Improvement Factor, *Journal of Quality in Maintenance Engineering*, Vol 16., No.3, p 271-287, 2010.
7. Sarhan, A.M., F. M. Guess, and J.S.Usher, “Estimators for reliability measures in geometric distribution model using dependent masked system life test data”, *IEEE Transactions on Reliability*, Vol 56, No. 2, pp 312-320, June 2007.
8. Humphrey, A.S., Taylor, G.D., Usher, J.S., and Whicker, G.L., “Evaluating the Efficiency of Trucking Operations with Weekend Freight Leveling,” *International Journal of Physical Distribution and Logistics Management*, Vol. 37, No 5, pp 360-374, 2007.
9. DePuy, G.W.J.S. Usher, R.L. Walker, and G.D. Taylor. “Production Planning for Remanufactured Products”, *Production Planning and Control*, Vol. 18, No. 7, pp. 573-583, 2007.
10. Usher, J. S. and Taylor, G.D. “Availability Demonstration Testing”, *Quality and Reliability Engineering International*, Vol 22:473-47, 2006.

11. Fite, J.T, Taylor, G.D., Usher, J.S., English, J.R., and Roberts, J.N., "Forecasting Freight Demand Economic Indices", *International Journal of Physical Distribution and Logistics Management*, Vol 32, No. 3&4, pp 299-308, 2003.
12. Taylor, G.D., Broadstreet, F., Meinert, T.S., and Usher, J.S., "An Analysis of Intermodal Ramp Selection Methods", *Transportation Research – Part E*, 38, 117-134, 2002.
13. Taylor, G.D., Whicker, G.L., and Usher, J.S., "Multi-Zone Dispatching in Truckload Trucking", *Transportation Research - Part E*, 37, 375-390, 2001.
14. DePuy, G., and Usher, J., "A Heuristic Approach to the Batch Sizing Problem", *Production Planning & Control*, Vol. 12, No. 4, pp, 372-378, 2001.
15. Usher, J.S., "Evaluating the Effects of Failure and Repair on Complex Systems", *Quality Engineering*, Vol. 13, No. 4, pp, 645-652, 2001.
16. Usher, J.S., Kamal, AH, and Kim, S.W., "A Decision Support System for Economic
17. Justification of Material Handling Investments", *International Journal of Computers & Industrial Engineering*, (39)1-2 pp. 35-47, 2001.
18. DePuy, G., and Usher, J.S., "The Effect of Quality Losses on Binomial Yield Processes", *Quality Engineering*, Vol. 13, No. 4, pp 595-600, 2001.
19. Usher J. S., and Srinivasan, M. K., "Quality Improvement of a Selective Laser Sintering
20. Process", *Quality Engineering*, Vol. 13, No. 2, pp 161-168, 2000-01.
21. Usher, J.S., Kamal, A.H., and Syed, W.H., "Cost Optimal Preventive Maintenance and Replacement Scheduling", *IIE Transactions*, Vol 30., No. 12, pp 1121-1128, December 1998.
22. Usher, J.S., "Weibull Component Reliability Prediction in the Presence of Masked Data", *IEEE Transactions on Reliability*, Vol. 45, No. 2, pp 229-232, June 1996.
23. Lin, D., Usher, J., and Guess, F., "Bayesian Estimation of Component Reliability From Masked System Life Data", *IEEE Transactions on Reliability*, Vol. 45, No. 2, pp 233-237, June 1996.
24. Usher, J.S., Alexander, S.M., and Duggins, D.C., "The Filling Problem Revisited", *Quality Engineering*, Vol 9, No. 1, pp 35-43, 1996.

25. Guttman, I., Lin, D., Reiser, B., and Usher, J., "Dependent Masking and System Life Data Analysis: Bayesian Inference for a Two-Component System", *Lifetime Data Analysis*, Vol. 1, pp 87-100, 1995.
26. Alexander, S. M., Dillman, M. A., Usher, J. S., and Damodaran, B., "Economic Design of Control Charts Using the Taguchi Loss Function", *International Journal of Computers & Industrial Engineering*, Vol. 28, No. 3, pp 671-679, 1995.
27. Usher, J.S., "A Program for Estimating Repairable Systems Reliability", *Quality Engineering*, Vol. 8, No. 2, pp 323-328, 1995.
28. Reiser, B., Guttman, I., Lin, D., Usher, J., and Guess, F., "Bayesian Inference for Masked System Life Data", *Applied Statistics*, Vol 44, No. 1, pp 79-90, 1995.
29. Usher, J.S., "Case Study: Reliability Models and Misconceptions", *Quality Engineering*, Vol. 6, No. 2, pp 261-271, 1993.
30. Abou-Amara I., G.W. Evans, and J. S. Usher, "A Multi-Objective Approach To Reliability Demonstration Testing", *IIE Transactions*, Vol. 25, No. 3, pp 52-58, May 1993.
31. Usher, J.S., and Whitfield, G.M., "Evaluation of Used-System Life Cycle Costs Using Fuzzy Set Theory", *IIE Transactions*, Vol. 25, No. 6, pp 84-88, November 1993.
32. Lin, D.K.J., Usher, J.S., and Guess, F.M., "Exact Maximum Likelihood Estimation Using Masked System Data", *IEEE Transactions on Reliability*, Vol. 42, No. 4., pp 631-635, December 1993.
33. Stuckman, B.E., Fischer, M. A., Pertunnen, C. D., and Usher, J.S., "Comparison of Percentile Estimators for Modeling Instrument Error in Measurement Systems", *Advances in Modeling and Analysis*, B, AMSE Press, Vol. 26., No. 3, pp 37-57, 1993.
34. Snow J. M., Stuckman, B. E., Usher, J. S., "Accuracy Requirements for Measurement Systems with Normal and Uniform Errors", *Naval Engineers Journal*, Vol. 105, No. 1, pp 66-69, January 1993.
35. Stuckman, B.E., Pertunnen, C.D., Usher, J.S., and McLaughlin, B.A., "Stochastic Modeling of Calibration Drift in Electrical Meters", *Modelling, Measurement and Control*, Vol. 44, No. 2, pp 38-56, 1992.
36. Usher, J.S., "A Computer Program for Component Life Estimation Using Multiply Censored System Life Data", *Computers & Industrial Engineering*, Vol. 22, No. 1, pp 19-36, 1992.

37. Snow, J. M., Usher, J.S., and Stuckman, B. E., "On The Effectiveness of the Unit Sample Size for Standard Control Charts: ARL vs. AURL", *Quality and Reliability Engineering International*, Vol. 8, No. 2, pp 105-111, 1992.
38. Guess, F. M., Usher, J. S., and Hodgson, T. J., "Estimating System and Component Reliabilities Under Partial Information On Cause Of Failure", *Journal of Statistical Planning and Inference*, Vol. 29, pp. 75-85, 1991.
39. Usher, J.S., Alexander, S.M., and Thompson, J.D., "System Reliability Prediction Based On Historical Data", *Quality and Reliability Engineering International*, Vol. 6, No. 3, pp 209-218, June-August 1990.
40. Usher J. S., and Hodgson, T. J., "Predicting New Product Reliability: A Competing Risks Framework", *International Journal of Modelling and Simulation*, Vol. 10, No.1, pp 27-31, 1990.
41. Usher J. S., and Guess, F. G., "An Iterative Approach For Estimating Component Reliability From Masked System Life Data", *Quality and Reliability Engineering International*, Vol. 5, No. 4, pp 257-261, 1989.
42. Usher, J. S., and Hodgson, T. J. "Maximum Likelihood Analysis of Component Reliability Using Masked System Life Test Data", *IEEE Transactions on Reliability*, Vol. 37, No. 5, pp 550-555, 1988.

(b) Proceedings Papers:

1. Moghaddam, K., and Usher, J.S., "Maintenance Scheduling of Multi-Component Systems Using Multi-Objective Simulated Annealing", *Proceedings Industrial Engineering Research Conference*, Miami, FL, May 2009.
2. Taylor, G.D., DePuy, G., and Usher, J. "Layout Optimization for Barge Fleet Optimization", *Proceedings of the International Industrial Engineering Research Conference*, Nashville, May 2007.
3. Hardin, T., DePuy, G., and Usher, J. "Self-Organizing Tiles – A new facility Layout Method, *Proceedings of the International Industrial Engineering Research Conference*, Nashville, May 2007.
4. Taylor, G. D., J. R. English, and J. Usher, "Availability Modeling of Powered Roller Conveyors Using Simulation Methods," *Proceedings of the 2006 Industrial Engineering Research Conference*, Orlando, FL, May , 2006, 21-24, CD ROM, Institute of Industrial Engineers.

5. Hardin, T., and Usher, J. "Facility Layout Using Self-Organizing Tiles", *Progress in Materials Handling Research: 2006*, edited by Meller, R., B. Peters, M. Ogle, D. Taylor, and J. Usher. June 2006.
6. Mora, R., G.W. DePuy, J.S. Usher, 2006. "Applying combinations of heuristics to the QAP" *Proceedings of Industrial Engineering Research Conference 2006*, May 2006, Orlando.
7. Evans, G.W., G. DePuy, J. Usher, and M. Chiodi, "Distribution System Operation Using Simulation and Criterion Modeling" *Proceedings of Industrial Engineering Research Conference 2006*, May 2006, Orlando.
8. English, J. Usher, and L. Yu, "Design of Powered Roller Conveyors: A Reliability Perspective," *Proceedings of the 16th International Conference on Flexible Automation and Intelligent Manufacturing*, Limerick, Ireland, July 25-28, 2006, bound (pp. 27-34)and CD ROM.
9. English, J. R., J.S. Usher, G. D. Taylor, and E. Pohl, "Availability Modeling of Powered Roller Conveyors," *Proceedings of the 2006 International Colloquium on Material Handling Research*, Salt Lake City, UT, June 11-15, 2006, CD ROM, Material Handling Institute.
10. English, J.R., J. Usher, and A. Mendoza, "Reliability Modeling and Optimization of Powered Roller Conveyors," *Proceedings of The International Conference in Flexible Automation and Intelligent Manufacturing*, July 2005, Bilbao, Spain, CD ROM.
11. Mora, R., G.W. DePuy, J.S. Usher, 2005. "Applying multiple priority rules to the QAP with application to the airline industry," to appear in *Proceedings of INFORMS Annual Meeting 2005*, November 13-16, New Orleans.
12. Mora, R., G. DePuy, and Usher, J. "Applying Multiple Heuristics to the QAP", *Proceedings of the 34th International Conference on Computers and Industrial Engineering*, on CD, , San Francisco, CA, November, 2004.
13. Usher, J.S., "Material Handling System Reliability Prediction Using Field Data Analysis", *Progress in Materials Handling Research: 2004*, edited by Meller, R., B. Peters, M. Ogle, D. Taylor, and J. Usher. June 2004.
14. DePuy, G.W., Usher, J.S. and Miles, T. "Facilities Layout Using a CRAFT Meta-Heuristic", *Proceedings of the International Industrial Engineering Conference*, May 2004

15. Usher, J.S., and DePuy, G.W., "Robust Layout Using Quadratic Loss", *Proceedings of the 2003 International Industrial Engineering Conference*, Published on CD, Institute of Industrial Engineers, Norcross, GA, May 2003.
16. Taylor, G.D., and Usher, J.S., "The Extended Effects of Transition Alternatives in AS/RS
17. or Forward Picking Areas", *Proceedings of the 2003 International Industrial Engineering Conference*, Published on CD, Institute of Industrial Engineers, Norcross, GA, May 2003.
18. Taylor, G.D., and Usher, J.S., "An Examination of Transition Alternatives in Reconfiguring AS/RS or Forward Picking Areas," *Progress in Material Handling Research: 2002*, R.D. Meller, M. Ogle, B.A. Peters, Taylor, G.D., and J.S. Usher, Eds., Material Handling Industry, Charlotte, NC, pp. 515-530, 2002.
19. Usher, J.S. and Taylor, G.D., "Reliability Demonstration Testing of Material Handling Systems," *Progress in Material Handling Research: 2002*, R.D. Meller, M. Ogle, B.A. Peters, Taylor, G.D., and J.S. Usher, Eds., Material Handling Industry, Charlotte, NC, pp. 531-541, 2002.
20. Usher, J.S., and Taylor, G.D. "Improving Flat Mail Preparation at USPS", *Proceedings of the 2002 International Industrial Engineering Research Conference*, Orlando, May 2002.
21. Ogle, M., Lindeke, R., Peters, B., and Usher, J. "College/Industry Relationships in Support of The Material Handling Industry, *Proceedings of the 2001 CIEC Conference for Industry and Education Collaboration*, San Diego, CA, January 2001, ETD 444-5.
22. DePuy, G., and Usher, J.S. "Automated Production Planning for Repairable Units", *Proceedings of 2001 International Industrial Engineering Research Conference, Dallas, TX*, May 2001.
23. DePuy, G., and Usher, J.S., "A Batch Sizing Heuristic for Processes with Quality Losses", *Proceedings, International Industrial Engineering Research Conference*, May 2000, Cleveland, OH.
24. DePuy, G., and Usher, J.S., "Determining Starting Batch Sizes for Random Yield Processes", *Proceedings 4th Annual International Conference on Industrial Engineering Theory, Applications and Practice*, (on CD-ROM), November 1999, San Antonio.
25. Usher, J.S., and Walker, R.L. "Operational Availability Assessment of Highly Complex Naval Systems", *Proceedings Industrial Engineering Research '99 Conference*, Proceedings on CD-ROM, Session I-5, Phoenix, AZ, May 1999.

26. Usher, J.S., Wilhelm, M.R., Biles, W.E., Prechatavanit, W., " A Performability Index for Estimating Material Handling System Reliability", *Proceedings 1999 FAIM Conference*, Netherlands.
27. Usher J. S., Wilhelm, M, Shaw, J. L, and Jacobson, M. "Analytical Modeling of The Closest Open Location Rule for AS/RS Storage Assignment", *Progress in Material Handling Research: 1998* (Proceedings of the International Colloquium on Material Handling Research), Phoenix, AZ, June 1998.
28. Usher, J.S., and Biles, W.E., "Evaluation of Material Handling System Reliability", *Proceedings Industrial Engineering Research '98 Conference*, Proceedings on CD-ROM, Banff, Alberta Canada, May 1998.
29. Shaw, J., Wilhelm, M, and Usher, J.S., "The Closest Open Location Assignment Rule in AS/RS Revisited", *Proceedings Industrial Engineering Research '98 Conference*, CD-ROM, Banff, Alberta Canada, May 1998.
30. Alexander, S.M., and Usher, J.S. "Process Monitoring Diagnosis and Control", *Proceedings, NSF Grantees Conference*, January 1998.
31. Alexander, S.M., and Usher, J.S., "Improving Control System Performance of Fill Processes", *Proceedings ISSAT - Reliability and Quality in Design*, pp. 53-56, 1997.
32. Alexander, S.M., and Usher, J.S., "Improving the Reliability and Quality of a Process: A Case Study", *Proceedings ISSAT - Reliability and Quality in Design*, pp. 67-70, 1997.
33. Biles, W.E., Usher, J.S., and Sprinkle, J., "Analysis of k-stage Automated Production Flow Lines with Re-circulating Conveyor Buffer Storage", *Proceedings of the 7th International FAIM Conference, (Flexible Automation and Intelligent Manufacturing)*, Middlesborough, England, June 1997, pp 471-482.
34. Usher, J.S., and Alexander, S.M, "Optimization of Filling Lines", *Proceedings 6th Industrial Engineering Research Conference*, Miami, May 1997, pp 686-690.
35. Usher, J.S., and Walker, R.L., "Incomplete Field Data: The Effect on Component Reliability Estimation", *Proceedings 6th Industrial Engineering Research Conference*, Miami, May 1997, pp 24-29.
36. Biles, W. E., and J.S. Usher, "Reliability and Maintenance in Automated Production Flow Lines", *Proceedings 1996 IFORS Conference*, July 1996, Vancouver, BC, pp. 189-193.

37. Biles, W.E., Usher, J.S., and Sprinkle, J.M., "Analysis of Two-Stage Automated Production Flow Lines with Recirculating Buffer Storage", *Proceedings 1996 IFORS Conference*, July 1996, Vancouver, BC.
38. Aboul-Seoud, M.H., and Usher, J.S., "The Effect of Modular System Structures on Component Reliability Estimation", *Proceedings of the Fifth Industrial Engineering Research Conference*, May 1996, Minneapolis, MN, pp 464-467.
39. VanGilder, K.C., and Usher, J.S., "Using FactoryFLOW to Predict Material Handling Manpower Requirements For A Future Increase in Production", *Proceedings of the 47th International Industrial Engineering Conference*, May 1996, Minneapolis, MN, pp. 121-130.
40. Usher, J.S., "Estimating the Effects of Failure and Repair on the Availability of an AGVS", *Proceedings of the 1995 SME Conference on AGVS Application and Technology*, Charlotte, NC, September 1995, pp 120-132.
41. Aboul-Seoud, M.H., and Usher, J.S., "Estimating Component Reliability from Incomplete Data on Modular Systems", *Proceedings of the Second ISSAT International Conference on Reliability & Quality in Design*", Orlando, FL, March 1995, pp 123-126.
42. Usher, J.S., and M.R. Wilhelm, "Methodology for AGVS Reliability and Availability Calculation", *Proceedings of ProMat'95*, Chicago, IL, Vol. 3, pp 173-181, March 1995.
43. Alexander, S.M., and Usher, J.S., "*Quality Engineering Techniques Applied to Improve Process and Product Quality*", Proceedings of the 1994 NSF Design and Manufacturing Grantees Conference, Cambridge, MA., January 1994, pp 301-302.
44. Usher, J.S., and M.R. Wilhelm, "Defining and Measuring AGVS Reliability and Availability", *Developments in Material Handling Research, Proceedings of 1994 International Material Handling Research Colloquium*, Grand Rapids, MI, pp 469-484, 1994.
45. Usher, J.S., and M.R. Wilhelm, "An Approximate Method For Computing AGVS Availability", *Proceedings of 1994 North American Material Handling Conference*, Detroit, MI, April 1994.
46. Usher, J.S., and M.R. Wilhelm, "Defining and Measuring AGVS Reliability and Availability", *Proceedings of ProMat'93*, Chicago, IL, pp 225-234, February 1993.

47. Usher, J.S., "Analysis of Circuit-Pack Component Reliability", *1993 Proceedings of the Annual Reliability and Maintainability Symposium*, Atlanta, GA, pp 320-325, January 1993.
48. Usher, J.S., "Models and Methods for Analysis of System Reliability", *Proceedings, American Society of Naval Engineers 1992 Symposium on Product Engineering*, September 1992, pp 101-105.
49. Usher, J.S., "Computerized Methods for Factory Layout and Workflow Planning", *American Society of Naval Engineers 1992 Symposium on Product Engineering*, September 1992, pp 203-208.
50. Usher, J.S., Stuckman, B.E., and Liu, B., "System Reliability Prediction Using Global Optimization", *Proceedings of the International Federation of Automatic Control Workshop on Intelligent Manufacturing*, Dearborn, MI, October 1992, pp. 88-92.
51. Usher, J.S., Alexander, S. M., and Thompson, J.D., "Predicting the Reliability of New Products at IBM", *1991 Proceedings Annual Reliability and Maintainability Symposium*, pp 208-213.
52. Snow J. M., Stuckman, B. E., Usher, J. S., "Accuracy Requirements for Measurement Systems with Normal and Uniform Errors", *Proceedings 1991 Conference on Engineering for Electronics Design and Production*, hosted by the American Society of Naval Engineers (ASNE), Bloomington, IN, June 1991.
53. Stuckman, B.E., Fischer, M. A., Pertunnen, C. D., and Usher, J.S., "Comparison of Percentile Estimators for Modeling Instrument Error in Measurement Systems", *Proceedings 1991 Conference on Engineering for Electronics Design and Production*, hosted by the of the American Society of Naval Engineers, Bloomington, IN, June 1991.
54. Stuckman, B.E., Pertunnen, C.D., Usher, J.S., and McLaughlin, B.A., "Stochastic Modeling of Calibration Drift in Electrical Meters", *Proceedings of the IMTC Conference*, May 1991.
55. Guess, F.M., and Usher, J.S., "A Bayesian Approach to Demonstration Testing With Highly Reliable Devices", *Proceedings of the 1990 Decision Sciences Institute Conference*, February 1990.
56. Evans, G.W., Usher, J.S., and Wilhelm, M.R., "A Modular Algorithm for Pre-Simulation Design of Automated Guided Vehicle Systems", *Proceedings of the MHRC Research Colloquium*, June 1990.
57. Perttunen, C. D., Usher, J. S., Stuckman, B. E., and Snow, J. M., "Exact Average Runs Lengths of Shewhart Charts With Supplemental Runs Rules Using Mean

First Passage Time", *Proceedings SE TIMS Conference*, October 1990, pp 299-301.

58. Usher, J.S., Perttunen, C. D., Snow, J. M., and Stuckman, B. E., "Markov Modeling of Shewhart Charts with Mid-Sample Shifts", *Proceedings SE TIMS Conference*, October 1990, pp 302-304.
59. Rabeneck, C. W., Usher, J. S., and Evans, G. W., "An Analytical Model for AGVS Design", *Proceedings 1989 International Industrial Engineering Conference*, Toronto, pp 191-195.
60. Usher, J. S., Wilhelm, M. R., and Evans, G. W., "AGV Flow Path Design and Load Transfer Point Location", *Proceedings 1988 International Industrial Engineering Conference*, pp 174-179.
61. Usher J. S., and Hodgson, T. J., "Predicting New Product Reliability: A Competing Risks Framework", *Advances in Reliability and Quality Control - Proceedings of the 1988 IASTED Conference on Quality Control and Reliability*, edited by M. H. Hamza, Acta Press, Anaheim, 1988, pp 57-61.

(c) Books and/or Articles in Edited Books:

1. *Progress in Materials Handling Research: 2006*, Eds. Meller, R., Peters, B., Ogle, M., Taylor, G.D., Usher, J.S., Materials Handling Institute, Charlotte, 2006.
2. Biles, W.E., Usher, J.S., Zohdi, M.D., "Material Handling", *Mechanical Engineers Handbook, Manufacturing and Management, 3rd Edition*, Edited by Myer Kutz, John Wiley and Sons, pp 349-394, 2006.
3. *Progress in Materials Handling Research: 2004*, Eds. Meller, R., Peters, B., Ogle, M., Taylor, G.D., Usher, J.S., Materials Handling Institute, Charlotte, 2004.
4. Usher, J.S., "Material Handling System Reliability Prediction Using Field Data Analysis", *Progress in Materials Handling Research: 2004*, Meller, R., B. Peters, M. Ogle, D. Taylor, and J. Usher, Eds. Material Handling Industry, Charlotte, NC. June 2004
5. *Progress in Materials Handling Research: 2002*, Eds. Meller, R., Peters, B., Ogle, M., Taylor, G.D., Usher, J.S., Materials Handling Institute, Charlotte, 2002.
6. Taylor, G.D., and Usher, J.S. (2002), "Research Topics in Mass Customization Across the Supply Chain," *Progress in Material Handling Research: 2002*, R.D.

Meller, M. Ogle, B.A. Peters, Taylor, G.D., and J.S. Usher, Eds., Material Handling Industry, Charlotte, NC, pp. 1-7.

7. Taylor, G.D., and Usher, J.S. (2002), "An Examination of Transition Alternatives in Reconfiguring AS/RS or Forward Picking Areas," *Progress in Material Handling Research: 2002*, R.D. Meller, M. Ogle, B.A. Peters, Taylor, G.D., and J.S. Usher, Eds., Material Handling Industry, Charlotte, NC, pp. 515-530.
8. Usher, J.S. and Taylor, G.D. (2002), "Reliability Demonstration Testing of Material Handling Systems," *Progress in Material Handling Research: 2002*, R.D. Meller, M. Ogle, B.A. Peters, Taylor, G.D., and J.S. Usher, Eds., Material Handling Industry, Charlotte, NC, pp. 531-541.
9. *Progress in Materials Handling Practice: 1999*, Eds., Forger, Heragu, Hernan, Peters, Taylor, Usher, Materials Handling Institute, Charlotte (published in Spring 2000).
10. *Progress in Materials Handling Practice: 1997*, Eds., Pratt, D.B., Malmberg, C.J., Taylor, G.D., and Usher, J.S., Materials Handling Institute, Charlotte, published in 1998.
11. Usher, J. S., "On the Problem of Masked System Life Data", *Advances in Reliability*, A. P. Basu, ed., North-Holland, Amsterdam, 1993, pp 435-443.
12. Evans, G.W., Usher, J.S., and Wilhelm, M.R., "A Modular Algorithm for Pre-Simulation Design of Automated Guided Vehicle Systems", *Material Handling in the 1990's*, Springer-Verlag, New York, 1990.

(d) Presentations at Professional Meetings:

1. "Mentoring Junior Faculty for Successful Careers in Academia", Master Mentoring Academy, Office of Research Integrity, University of Louisville, April 2011.
2. "Increasing Productivity and Decreasing Costs in Difficult Economic Times", Quality Leadership University, Panama City, Feb 2011.
3. "The State of Engineering", University of Louisville L.E.A.D. Program, Feb 2011.
4. "What Lies Ahead? Advances in Logistics, Technology, and Energy", Quality Leadership University, Panama City, May 2010.
5. "Reducing Costs and Increasing Productivity in Challenging Times", Quality Leadership University, Panama City, Mar 10, 2009.

6. "State of Engineering", UofL LEAD Program, Louisville, KY, Mar 2009.
7. "If Sigmas Are Bad Why Do We Want Six of Them?", ASQ Louisville Section, Louisville, KY Sep 2007.
8. "State of Engineering", UofL Accolade Program, Louisville, KY, Sep 2007.
9. "If Sigmas Are Bad Why Do We Want Six of Them?", Regional Business Expo, Louisville, KY Mar 2007.
10. "State of Speed School", KY Manufacturing Alliance, July 2006.
11. "Center for Engineering Logistics and Distribution", KY Manufacturing Alliance, July 2006.
12. "Facility Layout Using Self Organizing Tiles", International Material Handling Research Colloquium, Salt Lake City, UT, June 2006.
13. "Stepping Up to Management, From Technical Engineer to Engineering Manager", University of Louisville – Panama, Panama City Panama, March 2006.
14. "Cost Reduction and Quality Improvement", Panamanian Chamber of Construction, March 2006.
15. "Evaluating the Effect of Failure and Repair on AGVS", *Automated Guided Vehicle Product Section, Material Handling Industry of America Meeting*, Palm Beach, FL ,September 2005.
16. "The Forward Reserve Problem with Seasonal Demand", *2005 International Industrial Engineering Conference*, Institute of Industrial Engineers, Atlanta, GA, May 2005.
17. "Logistics Modeling at American Commercial Barge Lines", 2005 Kentucky Freight Conference, KY Department of Transportation, Frankfort, KY, May 2005.
18. "Availability Demonstration Testing", *2004 Integrated Systems Council, Material Handling Industry of America Meeting*, Dallas, TX, September 2004.
19. "Evaluating the Effect of Failure and Repair on AGVS", *Automated Guided Vehicle Product Section, Material Handling Industry of America Meeting*, Dallas, TX September 2004.

20. "Material Handling System Reliability Prediction Using Field Data Analysis", 2004 International Material Handling Research Colloquium, Graz Austria, June 2004.
21. "Availability Demonstration Testing", *2004 International Industrial Engineering Conference*, Institute of Industrial Engineers, Houston, TX, May 2004.
22. "Facilities Layout Using a CRAFT Meta-Heuristic", *International Industrial Engineering Conference*, Houston, TX, May 2004.
23. "Economic Justification of Material Handling Systems", 1-hr presentation as part of the *Material Handling Short Course*, Georgia Tech, March 2004.
24. "Center for Engineering Logistics and Distribution", UK Transportation Center Professional Development Seminar Series, Louisville, KY, with G.D. Taylor, March 2004.
25. "Robust Layout Using Quadratic Loss", *2003 International Industrial Engineering Conference*, Institute of Industrial Engineers, Portland, OR, May 2003.
26. "Introduction to the Economic Justification of Material Handling Investments", 8-hour short course conducted for the Material Handling Institute, Chicago, February 2003.
27. "Economic Justification of Material Handling Systems", 1-hr presentation as part of the *Material Handling Short Course*, Georgia Tech, May 2003.
28. "Reliability Demonstration Testing of Material Handling Systems", *Logistics and Distribution Institute Seminar Series, University of Louisville*, November 2002.
29. "Reliability Demonstration Testing of Material Handling Systems", *HK Systems User's Conference*, Park City, UT, September, 2002.
30. "The Economics of Supply Chain Investments", *HK Systems User's Conference*, Park City, UT, September, 2002.
31. "Reliability Demonstration Testing of Material Handling Systems", *Integrated Systems Council, Material Handling Industry of America Meeting*, Palm Springs, CA, October, 2002.
32. "Economic Justification of Material Handling Systems", an 8-hour workshop presented at the *2002 North American Material Handling Show and Forum*, on CD-ROM, Chicago, February 2002.

33. "Reliability Demonstration Testing of Material Handling Systems", Poster Session *International Material Handling Research Colloquium*, Portland, ME, June 2002.
34. "An Examination Of Transition Alternatives In Reconfiguring AS/RS or Forward Picking Areas", Poster Session, *International Material Handling Research Colloquium*, Portland, ME, June 2002.
35. "Cost Optimal Preventive Maintenance and Replacement Scheduling for Multi-Component Systems", Industrial Engineering Research Conference, Dallas Texas, May 2001.
36. "Capital Investment Comparisons and Decision making with Intangibles", ASRS/AGVS Users' Association Conference, Columbus, OH, June 2001.
37. "Economic Justification of Material Handling Systems", an 8-hour workshop presented at the *2001 ProMAT Show and Forum*, on CD-ROM, Chicago, February 2001.
38. "Panel Session on Reliability Education", INFORMS, San Antonio, November 2000.
39. "Evaluating the Impact of Component Failure on Overall System Performance", *International Industrial Engineering Research Conference*, Cleveland, May 2000.
40. "New Methods for Predicting and Auditing Integrated Systems Reliability and Performance", *Proceedings of the North American Material Handling Show and Forum*, on CD-ROM, Detroit, April 2000.
41. "Capital Investment Comparisons and Decision Making with Strategic Tactical and Financial Criteria", *Proceedings of the North American Material Handling Show and Forum*, on CD-ROM, Detroit, April 2000.
42. "Economic Justification of Material Handling Systems", an 8-hour workshop presented at the *2000 North American Material Handling Show and Forum*, on CD-ROM, Detroit, April 2000.
43. "Using Detailed Case Studies as a Teaching/Learning Tool", Material Handling Teacher's Institute, Lehigh University, sponsored by the College Industry Council on Material Handling Education, June 1999.
44. "Computer Aided Material Flow Analysis", Material Handling Teacher's Institute, Lehigh University, sponsored by the College Industry Council on Material Handling Education, June 1999.

45. "Operational Availability Assessment of Highly Complex Naval Systems", Invited talk at the *Industrial Engineering Research '99 Conference*, Phoenix, AZ, May 1999.
46. "Facility Design and Material Handling Education", Panelist, *Industrial Engineering Research '99 Conference* Phoenix, AZ, May 1999.
47. "The Effect of Component Failure and Repair on the Performance of Complex Systems", The Logistics and Distribution Institute, Distinguished Lecture Series, University of Louisville, April 1999.
48. "Evaluation of Material Handling System Reliability", Integrated System Council of the Material Handling Industry of America, Charlotte, NC, April 1999.
49. "Analytical Modeling of The Closest Open Location Rule for AS/RS Storage Assignment", *International Colloquium on Material Handling Research, 1998*, Phoenix, AZ, June 1998.
50. "Evaluation of Material Handling System Reliability", *Industrial Engineering Research '98 Conference*, Banff, Alberta Canada, May 1998.
51. "The Closest Open Location Assignment Rule in AS/RS Revisited", *Industrial Engineering Research '98 Conference*, Banff, Alberta Canada, May 1998.
52. "Introduction to Industrial Engineering, Panel Session", *Industrial Engineering Research '98 Conference*, Banff, Alberta Canada, May 1998.
53. "Cost Optimized Maintenance Scheduling for Repairable Systems", presented at the 1997 INFORMS Conference, Dallas, October 1997.
54. "Using Detailed Case Studies as a Teaching/Learning Tool", Material Handling Teacher's Institute, Michigan Tech, Houghton, MI, sponsored by the College Industry Council on Material Handling Education, June 1997.
55. "Computer Aided Material Flow Analysis-Part 1", Material Handling Teacher's Institute, Michigan Tech, Houghton, MI, sponsored by the College Industry Council on Material Handling Education, June 1997.
56. "Computational Aspects of Reliability and Masked Data", Visiting Lecture Series, Engineering Math and Computer Science Department, University of Louisville, Louisville, KY, September 15, 1995.
57. "An Overview of the ISO 9000 Series of Quality Standards", Delta Nu Alpha Louisville Chapter #112, Louisville, KY, September 26, 1995.

58. "Applications of Reliability and Availability Models to Automated Electrified Monorails", AEM Product Section, MHI Conference, Charlotte, NC, April 1995.
59. "On the Problem of Masked System Life Data", Visiting Lecture Series, Rensselaer Polytechnic Institute, April 1995.
60. "Evaluation of Restaurant Designs Through Computerized Analysis", Earl R. Gerhard Lecture Series, University of Louisville, October 1991.
61. "Models and Methods for Analysis of System Reliability", American Society of Naval Engineers 1992 Symposium on Product Engineering, September 1992.
62. "Predicting the Reliability of New Products at IBM", 1991 Reliability and Maintainability Symposium, Orlando, FL, January 1991.
63. "Computerized Methods for Factory Layout and Workflow Planning", American Society of Naval Engineers 1992 Symposium on Product Engineering, Sept. 1992.
64. "Estimating System and Component Reliabilities Under Incomplete Information On Cause Of Failure", South Carolina Chapter of the American Statistical Association, Columbia, SC, December 1987.
65. "An Overview of Reliability Techniques Employed During The Product Development Cycle", Louisville Chapter of the Institute of Industrial Engineers, Louisville, KY, March 1988.

(f) Other Publications:

1. Usher, J.S., "Get it in Writing", *Paper 360°*, September 2007, p 32.
2. "Get Reliability and Availability in Writing", *Paperboard Packaging*, Vol. 90, No.9, Sept 2005.
3. "Louisville Recycling", Case Study, published by the Material Handling Industry of America, through the College Industry Council on Material Handling Education, 2003.
4. "Fortune Filling", Case Study, published by the Material Handling Industry of America, through the College Industry Council on Material Handling Education, 2002.
5. Usher, J. S., "Summary of QCRE Invited Talks at IERC'2001", QCRE Newsletter, Summer 2001.

6. Usher, J. S., "QCRE Invited Talks at IERC'2001", QCRE Newsletter, Spring 2001.
7. Usher, J.S., "Teaching the Teachers", CIC-MHE Corner, *On the Mhove*, Vol. 7, No. 2, Aug/Sept 1999, p 4.
8. Usher, J.S., "1999 Accomplishments", CIC-MHE Corner, *On the Mhove*, Vol. 7, No. 1, June/July 1999, p 4.
9. Usher J.S., " Are you Still Using Payback Period?", CIC-MHE Corner, *On the Mhove*, Vol. 6, No. 6, April/May 1999, p 4.
10. Usher, J.S., "CIC-MHE Corner", *On the Mhove*, Vol. 6, No. 5, Feb/Mar., 1999, p 4.
11. Usher, J.S., "CIC-MHE Corner", *On the Mhove*, Vol. 6, No. 4, Dec/Jan., 1999, p 4.
12. Usher, J.S., "Technology Transfer", CIC-MHE Corner, *On the Mhove*, Vol. 6, No. 3, Oct./Nov. 1998, p 4.
13. Usher, J.S., "CIC-MHE Corner", *On the Mhove*, Vol. 6, No. 2, August/Sept., 1998, p 4.
14. Usher, J.S., "How's Your Quality? CIC-MHE Corner", *On the Mhove*, Vol. 6, No. 1, Jun/Jul. 1998, p 4.
15. Usher, J.S., "CIC-MHE Corner", *On the Mhove*, Vol. 5, No. 6, Apr/May 1998, p 4.
16. Usher, J.S., "CIC-MHE Corner", *On the Mhove*, Vol. 5, No. 5 Feb/Mar 1998, p 5.
17. Usher, J.S., "The effect of failure and repair on the performance of material handling systems", *IIE News, QC Reliability Division Newsletter*, Fall 1997.
18. Usher, J.S., "CIC-MHE Corner", *On the Mhove*, Vol. 5, No. 4, p. 4, Fall 1997.
19. Usher, J.S., Ciesielski, C.A., and Johanson, R.E., "Redesigning An Existing Layout Presents A Major Challenge - And Produces Dramatic Results", *Industrial Engineering*, Vol. 22, No. 6, pp 45-49, June 1990.
20. Usher, J. S., and Snow, J. M., "Forget R Charts When n=1?", *Quality*, pp 61-62, November 1990.
21. Usher, J. S., and Guess, F.M., "Application of Bayesian Reliability Tools in the 1990's", *Reliability Review*, Vol. 10, No. 4, pp 9-13, 1990.

22. Usher, J. S., "Which Facilities Planning Text Do YOU Use?", *IE News/Facilities Planning and Design*, Vol. XXV, No. 1, Fall 1990.
23. Usher, J. S., Alexander, S. M., and Thompson, J. D., "System Reliability Prediction Based On Historical Data", *The Sigma, ASQC Newsletter*, Vol. 29, No. 4, December 1990.
24. Usher, J. S., "Reliability Predictions for Complex Systems", *IE News/Quality Control and Reliability Engineering*, Vol. XXII, No.1, Fall 1988.

2. Grants and Contracts:

1. "Additive Manufacturing Research", \$1,347,217, Office of Naval Research, July 2010 – Sept 2012, PI, Starr, Co-PIs, Usher, Stucker, Gornet.
2. "RFID Technologies – Tech Center at the University of Louisville", \$1,720,000, Department of the Navy, PI, Heragu, Co-PI, Usher. Sept 2010- Mar 2012
3. "Real-Time Decision Support System for Healthcare & Public Health Sector Protection", Dept of Homeland Security, \$3,300,000, with Heragu, Evans, DePuy, Alexander, Chen, Kumar, McWilliams, LaJoie, Carrico, Aug 2009-2012.
4. "Direct Digital Manufacturing", Office for Naval Research, \$1,109, 989, December 2008 – June 2011, PI, Usher, Co-PI, Starr, Gornet.
5. "Center for Engineering Logistics and Distribution (CELDi)", National Science Foundation I/U-CRC, \$492,000, 2002-2012. with S. Heragu.
6. "Traffic Prediction Models Using Origin-Destination Matrices", Intellione inc, \$50,000, with S. Heragu, 2009-2010.
7. "Analysis of Trucking Strategies at GE Industrial", General Electric, through the Center for Engineering Logistics and Distribution, \$50,000, Aug 2006 - Jan 08, with S. Heragu and G. Evans.
8. "Research Experience for Teachers – RET", National Science Foundation, \$20,000, June 2005-May 2006.
9. "Inventory, Distribution and Value Added Activities Analysis" – N. Glantz and Sons, through the Center for Engineering Logistics and Distribution, \$50,000, June 2005 through June 2006, with DePuy and Evans.

10. "Workforce Training Schedule for Logistics Skills", Naval Surface Warfare Center-Crane, through the Center for Engineering Logistics and Distribution, \$50,000, Jun 2005, June 2006.
11. "Inventory Management: Industry Best Practices", Center for Engineering Logistics and Distribution, \$20,000, June 2004-Dec 2004. With Scott Mason, Rajesh Swaminathan, Mustafa Pulat, Andrew Landers, Lindsey M. Pulat, Ricki Ingalls, Rajesh Veliyanallore, Loay Sehwal.
12. "Automated Forecasting of Replacement Part Demand", Naval Surface Warfare Center -Crane through the Center for Engineering Logistics and Distribution, \$50,000, Jan 2004 – Jun 2005, with G.W. DePuy
13. "Production Scheduling and Capacity Analysis", Naval Surface Warfare Center - Crane through the Center for Engineering Logistics and Distribution, \$75,000, Aug 2004 – Aug 2005, with G.W. DePuy
14. "Assessment of Logistics Preparation and Progress", Naval Surface Warfare Center -Crane through the Center for Engineering Logistics and Distribution, \$50,000, Jul 2003 – Jun 2004, with G.W. DePuy and G.D. Taylor.
15. "Transitioning to Responsive Manufacturing, \$150,000, Naval Surface Warfare Center -Crane, May 2002- May 2003, with G. DePuy, and G. Don Taylor.
16. "Management of Performance Based Logistics", NWSC-Crane through the Center for Engineering Logistics and Distribution, \$50,000, May 2002-May 2003. with Taylor, and DePuy.
17. "Enhanced Configuration Management at UPS", Vanderlande Industries, \$20,645, Dec. 2001-May 2002.
18. "Flat Mail Preparation and Next Generation Material Handling", United States Postal Service through the Center for Engineering Logistics and Distribution, March 2001 – December 2001, with Taylor, G.D., English, J.R., Nachtman, H., \$100,000.
19. "Modeling and Analysis of Production Planning Systems for Repairable Units", Naval Surface Warfare Center-Crane, February 2001-May 2001, with Gail DePuy, \$34,044,
20. "Automated Production Planning for Repairable Units", Naval Surface Warfare Center-Crane, February 2000-February 2001, with Gail DePuy, \$48,138.
21. "Concepts for Material Handling of Processed Foods", \$29,650, Planet Products Inc., May 2001 – January 2002, with C. Staff.

22. "Monitoring and Control of Filling Processes", National Science Foundation, \$80,000, Co-PI, with S. Alexander, 6/95-6/98.
23. "Industrial Assessment Center", U.S. Department of Energy, \$148,750, October 1997- September 1998, with J. Watters, G. Coburn, and M. Fleischman.
24. "Camp IE/EM", Jefferson County Public Schools/CPMSA/National Science Foundation, \$50,830, with, V. Smith, G. Evans, and W. Biles, G. DePuy, and B. Hart, Feb 1998-April 1998.
25. "Camp IE/EM", Jefferson County Public Schools/CPMSA/National Science Foundation, \$33,501, with, V. Smith, G. Evans, and W. Biles, G. DePuy, and B. Hart, Aug 1998-Dec 1998.
26. "A Characterization Study of the Sheet Walking Problem", United-Pentek Corp., \$22,000, January 1998 - May 1998, with M. Wilhelm, W. Hnat, and G. Prater.
27. "Full Truck Load Analysis", Louisville, Jefferson Co. Office for Economic Development, \$12,000, May 1996-December 1996, Co-PI., with C. Staff.
28. "Microwave Tube Reliability Prediction: Dealing with Incomplete Field Data", NWSC-Crane, \$25,000, PI, June 1995 - June 1996.
29. "Scour at Bridge Foundations: Research Needs", National Research Council, \$150,000, with A. Parola, and J. Hagerty, 1/95-1/96.
30. "Product Realization Affiliate Institutions Program", Product REALIZATION Consortium, Worcester Polytechnic Institute, \$8,300, September 1995-September 1996, Co-PI with M. Wilhelm, G. Prater, and M. Day.
31. "Quality Engineering Techniques Applied to Improve Product and Process Quality at Liqui-Dri/Quaker", National Science Foundation, \$25,000, Co-PI with S. Alexander, 5/93 - 10/93.
32. "Application of Quality Engineering Techniques to Improve Product and Process Quality", Liqui-Dri/Quaker, PI, \$38,000, 10/92 - 9/93.
33. "Error Analysis of AEGIS Test Set Measurements", U.S. Navy, NSWC, Crane, IN, \$239,944, with J.C. Hill, D. Scheer, and B.E. Stuckman, 1/91 - 8/91.
34. "Telecommunications Reliability Prediction in the Presence of Masked Data", AT&T Bell Labs and the Telecommunications Research Center, University of Louisville, \$41,000, PI, with B. E. Stuckman, 1/91 - 8/91.
35. "Evaluation of Restaurant Designs Through Computerized Analysis", KFC Corporation, \$30,500, PI with G. W. Evans and M. R. Wilhelm, 1/91 - 8/91.

36. "Control Chart Evaluation for Microwave Tube Production", Naval Weapons Support Center, Crane/TSC, \$49,404, PI with B. E Stuckman and C. Hill, 9/89 - 12/89.
37. "Techniques For Estimating and Demonstrating New Product Reliability", IBM Corporation, \$50,000, PI with S. M. Alexander, 1/88 - 12/88.
38. "Techniques For Estimating and Demonstrating New Product Reliability", IBM Corporation, \$2,500, PI with F. Guess, 1/89 - 3/89.
39. "Mabe Gas Range Facility Design - Phase II", General Electric, \$24,297, with M. R. Wilhelm, S. M. Alexander, and H. R. Leep, 8/87 - 12/87.

3. Dissertations and Theses:

(a) Directed:

1. Markus Kemmner, "Reliability Demonstration of a Multi-Component Weibull System Under Zero-Failure Assumption", **PhD**, May 2012.
2. Milagros Palomino, "Process Improvement of Codeshares and Codeshare Synchronization", MEngEM Thesis Project, Nov 2011.
3. Karla Lamboglia "Improving the Quality of Service and Process Management at the Customer Service Department of IQuoteExpress.com", MEngEM Thesis Project, July 2011.
4. Walterio Valencia, "Operations Analysis of a Petroleum Fuels Tank Truck Loading Rack", MEngEM Thesis project, July 2011.
5. Adolfo Chavex "TetraPak Process Improvement", MEngEM Thesis Project, July 2011.
6. Karen Lopez, "Improvement of the Roaming Process within an Intentaional Cellular Phone System", MEngEM Thesis Project, July 2011.
7. Laura Suriol, "Vertilux LTD, Purchasing department, Productivity Improvement", MEngEM Thesis Project, July 2011.
8. Abel Carr, "Grupo Rey: Maintenance Department Facility Design", MEngEM Thesis Project, July 2011.

9. Lidabell Edwards, "Improvement of Solutions Panama Productivity Issues", MEngEM Thesis Project, July 2011.
10. Marco Navas, "Influence of Dell's marketing Communications Vehicles on Demand Generation in Mexico and Colombia", MEngEM Thesis Project, July 2011.
11. Rommy Rodriguez, "Evaluations of the Variations in the Ericsson IP-Core Competence Area of Project Deployment", MEngEM Thesis Project, July 2011.
12. Eric Goschenko, "Technical And Financial Study On THW And TTU Cable Manufacturing Plant", MEngEM Thesis Project, July 2011.
13. Lize Lemos da Silva "Recipe Management System Implementation", MEngEM Thesis Project, May 2011.
14. Kent Blackburn "Forecast and Cost Model of a Product with Seasonal Demand", MEngIE Thesis Project, May 2011.
15. Manuel Hive – "Centro de Ofertas – Variable Compensation plan, Inventory and Facility Layout", MEngEM Thesis Project, completed July 2010.
16. Jesus Berrio – "COPESA – Combined Cycle Project", MEngEM Thesis project, Completed July 2010.
17. Jason Oakley, "Hybrid Kanban System in High Product Mix, High Volume Assembly Manufacturing" MSIE – Project, Completed July 2010.
18. Joshua Hawkins, " Safety Integrated Systems (SIS): Applications in the Refining Industry", MEngEM Thesis Project, July 2010.
19. Peter Brem "Facility Layout – At the New Warehouse and Production Area Of AKW A+V Protec", MSIE Thesis Project, July 2010.
20. Silke Ramminger, "Redesign Of The Recruitment Process Of Bera Personnel Services", MSIE, June 2010.
21. Kamran Moghaddam "Preventive Maintenance and Replacement Scheduling: Models and Algorithms", **PhD**, April 2010.
22. Jared Heiger "General Electric Washing Machine Motor Analysis", MEngIE Thesis Project, May 2009.
23. Michael Hockensmith – "Layout Of A New Motor Control Panel Fabrication Facility For Alliant Technologies, LLC", MEngEM Thesis Project, Dec 2008.

24. Michael Odetunde – “Transformation Through Lean”, MEngIE Thesis Project, Dec 2007.
25. Ateet Piplani – “Warehouse Staffing Analysis”, MSIE Thesis Project, Nov 2007.
26. Greg Lanham – “Simplex Grinnell - Reducing Contracting Margin Variance”, MEngEM Thesis Project, Nov 2007.
27. Irina Smith – “Improving Sistemas De America’s New Product Introduction Process”, MSIE Project, Oct 2006.
28. Benedicto Nunez – “ Pre-Insulated HVAC Ducts Material Evaluation”, MEng EM Thesis Project, Oct 2006.
29. Tasha Nixon – “5S Quarantine Layout and Worker Design”, MEng Thesis Project, December 2006.
30. Bridget Decker – “UPS WFF Mezzanine – AOP Interim Plan”, MEng Thesis Project, July 2006.
31. Kenneth Patrick Hobbs – “Improving Customer Satisfaction On The Cupholders Of Ford Super Duty Vehicles”, MEng Thesis Project, May 2006
32. Peter Pachikara – “Gasket Plasticizer Change”, M.Eng Project, July 2005.
33. Jason Fleming – “Controls Power Supply Board Reliability Test”, M. Eng Project, May 2005.
34. Tim Nguyen – “The Forward Reserve Problem with Seasonal Demand”, **Ph.D.**, April 2005.
35. Robert Turner – “UPS Package Handling System Design”, M.Eng Thesis Project, April 2005.
36. Joshua Roberts – “Production Scheduling in a Lean Remanufacturing Environment”, M.Eng Thesis, April 2005.
37. Randy Irwin – “Hawk Precision Components Facility Expansion Business Plan”, M.Eng. Thesis Project, November 2004.
38. Alex Charland – “Running Board Assembly Downtime: A 6-Sigma Approach”, M.Eng. Thesis Project, April 2004.
39. Chris Engler – “UPS Twilight Sort Improvements: Irreg Operation”, M.Eng. Thesis Project, April 2004

40. Justin Kelly – “EHS/Quality Real-time Barcode Tracking System”, M.Eng. Thesis Project, December 2003.
41. John Frank – “Enhancement of a Decision Support System For Economic Justification of Complex Systems” MEng. Thesis, December 2003.
42. Kelly Elliott – “Coil Steel Management”, M.Eng. Thesis Project, December 2003.
43. Kannan Durairaj – “Design of a Sorting System in a Warehouse Using a Simulation Model”, MSIE Project, September, 2003.
44. David Lutes – “The Qualification of an Alternate Water Valve Supplier for GE Dishwasher Operations”, M.Eng. Project, May 2003.
45. Jamie Little, “Application Of Cellular Manufacturing To An Inkjet Remanufacturing Production Line”, M.Eng. Project, May 2003.
46. Wes Wigginton, “Improvements to a Vacuum Depositing Process, M. Eng. Project, March 2003.
47. Eddie Cissell, “Worldport Housekeeping Management”, M. Eng. Project, March 2003.
48. Tim Beard, “An Application of Order Picking Improvement Opportunities in a Distribution Center”, M. Eng. EM Project, December 2002.
49. Brian Osborne, “Slotting New Footwear Client into Existing Warehouse Operation”, MEng Project, August 2002.
50. Tim Nguyen, “A Neural Network Heuristic for the Traveling Salesman Problem”, MEng, April 2002.
51. Ken Staebler, “Standardization of Hardware Packaging and Processes”, M. Eng. Project, April 2002.
52. Joseph Bowling, “A proposal for Inventory Analysis of a Warehouse”, M. Eng. Project, April 2002.
53. Eric Cameron, “Pick Module and Automated Sortation Design for Full Case Distribution”, M. Eng. Project, April 2002.
54. Jon Gerald, “Recruiting Market Analysis for the U.S. Army’s 3rd Recruiting Brigade”, M. Eng. Project, April 2002.
55. Paul Shuter, “Profitability vs. Complexity: A Microeconomic Study for Production Determination”, M. Eng. Project, April 2002.

56. Shannon Thomason, "Rebalance of an Assembly Line to Meet Cycle Requirements", M. Eng. Project, April 2002.
57. Amy Trusty, "Line Balancing Multiple Products on a Single Assembly Line", M. Eng. Project, April 2002.
58. Nicholas P. Anderson, "Improvement of an Injection Molding Process", MSIE, November 2001.
59. Fernando Pinto Selles, "Development of a New Facilities Layout for the Marketing Department of Western Insurance", MSIE, September, 2001.
60. Itzel Marie Batinovich, "The Application of Engineering Tools to Improve Customer Service for a Rent-A-Car Company in Panama", MSIE, September 2001.
61. Brandon Clayton, "Quality Control System at UPS", M.Eng Project, July 2001
62. Sung Woo Kim, "Performance Analysis of Material Handling Systems: A Simulation-Based Performability Index (PI) Approach", **Ph.D.**, May 2001.
63. Kelly Kowalczyk, "Six Sigma Initiative to Improve Front Rail Setback at GE", M.Eng. Project Alternative, May 2001.
64. Chad Thayer, "The Forward-Reserve Problem In A Quick Service Restaurant", M.Eng., April, 2001.
65. Ryan Rusk, "An Analysis of Gage Repeatability and Reproducibility Study Utilizing Risk Analysis Techniques", MSIE, December 2000.
66. Don C. Duggins, III – "Volumetric Filling Processes – Optimization in the Presence of Variation, M. Eng. June 2000.
67. Angela Chawk Ford - "Statistical Analysis of Health and Safety Programs", completed June M. Eng. June 2000.
68. Sunchai Santivipanont - "A Simulation Model of Baggage Handling in Mid-Sized Airports", MSIE, Nov. 1999.
69. Robert Mengelberg - "Reducing Material Handling Costs at the American Printing House for the Blind", M.Eng., July 1999.
70. Praveen Govindaraj - "A Simulation Analysis and Comparison of Double Drive-Thru Operations", M.S.I.E., July 1999.
71. Kevin Petty - "A Model to Predict Winning Superfecta Results in Greyhound Races", M.S.I.E., April 1999.

72. Scott Pulford - "Future Scout and Cavalry System Constructive Experiment ", M.S.I.E., March 1999.
73. Elizabeth Myers - "Applying Facilities Planning Methodology, Human Factors Techniques, and Inventory Analysis to Retail Pharmacy Design", M.S.I.E., December 1998
74. Wanna Prechatavanit "A Performability Index for Complex Material Handling Systems", M.S.I.E. December 1998
75. Christy Baker – “Integration and Consolidation of Production Information Using Business Process Reengineering”, M. Eng.IE, July 1998.
76. Terry DeWitt – “A Reliability Analysis of the United States Army’s Close Combat Tactical Trainer”, M.S., June 1998.
77. Jude Beyerle “Risk Centered Maintenance and it Application to 15KV Switchgear”, M.Eng., Engineering Management, May 1998.
78. Mahesh Srinivasan “ Quality Improvement For the DTM Sinterstation 2000”, M.S., December 1997.
79. Richard Kraehling “Determining the Nonhomogeneous Poisson Process Parameters of Repairable Systems”, M.S. December 1997
80. Mohamed Aboul-Seoud "Hierarchical Modeling in the Case of Incomplete Systems Life Data", **PhD**, August 1996.
81. P. Angela Wolf "Process Improvement Applied to Retail Service Systems: A Case Study for KFC", M. Eng., May 1996.
82. Eric Ball "Computerized Facilities Planning in the Presence of Demand Variation", M.Eng., April 1996.
83. Jennifer Casto "A Mission Forecast Model for the US Army Recruiting Command", M.S., April 1996.
84. Abdullah Al-Araifi "Facilities Design Quality Function Deployment", M.S., December 1995.
85. Wasim Hashmi "A Study of Maintenance Procedures in Medical Facilities", M.S., October 1995.
86. Kathryn VanGilder "Using FactoryFLOW to Predict Material Handling Manpower Requirements for Future Increases in Production", M.S., August 1995.

87. Mohamed Aboul-Seoud "Component Reliability Estimation Using Masked System Life Data", M.S., November 1994.
88. Donald Newton "Integrated Manufacturing Process Teams", M.Eng., April 1994.
89. Michael Golway "AutoCRAFT - A Graphical Interface Between CRAFT and Autocad", M.Eng., May 1993
90. Satish Bagalkotkar "Effect of Number of Preliminary Samples on the ARL for a Shewhart Chart", M. Eng., co-directed with B.E. Stuckman, May 1993.
91. Jeevesh Srinivasamurthy "Evaluation of MLEs Using Masked System Life Data", M. Eng., co-directed with B.E. Stuckman, May 1993.
92. Anurag Asthana "An Algorithm for Estimating MLEs Under Exponential Case From Masked System Life Data", M. Eng., co-directed with Dr. B. E. Stuckman, August 1992.
93. Rich Wrightington "KFCflow: Facilities Design Software for Quick Service Restaurants", M. Eng., 1992.
94. Matthew Dillman "Economic Design of Control Charts Using the Taguchi Loss Function", M. Eng., 1991.
95. Jeffrey Mitchell "A Computerized Inventory Control System", M.Eng., 1991.
96. Christopher Isert "Simulation of Control Charts with Supplemental Runs Rules", M. Eng., 1991.
97. Sean Spaulding "An Integrated Approach to Computerized Facility Layout Design", M. Eng. 1991.
98. Abdul Attarzadeh "Calculation of Average Run Length For Shewhart X-Bar Charts and Cumulative-Sum Charts", M. Eng., Co-Directed with B. E. Stuckman 1991.
99. Mir Ali M. Khan "Global Optimization Applied to Masked Reliability Data", M. Eng., co-directed with B. E. Stuckman, 1991.
100. Iyad Abou-Amara "Design of Reliability Demonstration Tests Using a Multi-Attribute Value Function", M. Eng., 1990.
101. Craig Rabeneck "An Analytical Model for AGVS Design", M. Eng., 1989.
102. Glenn Whitfield "Evaluation of Used System Life-Cycle Costs Using Fuzzy Set Theory", M.Eng., 1989.

(b) Committee Participation:

PhD (completed):

1. Yepeng Sun (IE), 2012
2. Taimour El-Cheik (IE) 2010
3. Cynthia Forgie (IE) 2008
4. Xiaoyi Wang (IE) 2008
5. Aman Gupta (IE) 2007
6. Jeremy White (Math) 2007
7. Sherif Rashad (CECS) 2006
8. Anthony Humphrey (IE) 2006
9. Andrew Cobb (CECS) 2006
10. Feng Du (IE) 2006
11. Derek Lowe (CECS) 2005
12. Cynthia Edlin (IE) 2005
13. Amarprett Kohli (IE) 2005
14. Keith Sinkhorn (IE) 2003
15. Duncan Darby (ChE) 2003
16. Veronica Hinton-Hudson (IE) 2002
17. Todd Whyte (IE) 1999
18. Herbert Stackman (IE) 1998
19. Jussi Kantola (IE) 1998
20. Sai Kolli (IE) 1994
21. Hyeon Ho Jo (IE) 1993
22. Lori Cook (IE) 1992
23. Ali Khosravi-Khamrani (IE) 1991
24. Won Lee (IE) 1990
25. Cary Pertunnen (EE) 1990

MEng and MS (completed):

1. Scott Cramer (IE) – April 2011
2. Tobias Schwing (MS) – June 2010
3. Jeff O’Dell (IE) – April 2010
4. Erin Jackson (IE) – April 2009
5. Clayton Mastin (CEE) – April 2009
6. Melanie Hunt (CEE) – April 2008
7. Kenneth Ryan (EM) – July 2006
8. Cindy Edlin, IE – May 2005
9. Wayne Lowe, CECS - April 2005
10. Alan Brooks (ChE) – April 2004
11. Feng Du (IE) – April 2004
12. David Gagel (IE), April 2003
13. Tracy Miles (IE), April 2003
14. Kresimir Odorcic (EE), November 2002
15. Taimor El-Cheikh (IE) Sept. 2002

16. Michael John Thurman (ChE) Sep. 2002
17. Tanapun Karunanant, (IE) July 2002
18. Lee Leathers, (IE), July 2002
19. Chadwick M. Cunningham, CEE, April 2002
20. Debasish Chatterjee, CECS, December 2001
21. John J. Roetker, ME, December 2001
22. Irving Diaz, IE, September 2001
23. Wasin Robbanjerd, IE, July 2001
24. Noel Tyler Schulman, IE, July 2001
25. Nick Bosaw, M.Eng., ECE, April 2001
26. Jason Embry, M.Eng. IE, April 2001
27. Julie Raisor, M.Eng. IE, April 2001
28. William Miller, M.Eng, IE, March 2001
29. D. Katie Tabler, M.Eng., IE, June 2000
30. Angela Newton, M.Eng., CE, June 2000
31. Matthew Mersch, M.Eng., IE, Dec. 1999
32. Matthew Pataja, M.Eng. CEE, Nov. 1999
33. James Cook, M. Eng., CEE, Nov. 1999
34. Arrian Brantley, M. Eng., CECS, 1999
35. Kevin Mizell, M. Eng. ChE, 1998
36. Jayachandran Monoharan, (IE), 1997
37. Jackie Sprinkle, (IE), 1997
38. Tommy Dean Langford (EMCS) 1996
39. Bhanu Udaya Kuruganty (CE) 1996
40. Jerry Shaw (IE) 1996
41. Sameer Choudary (ChE) 1995
42. Bill Jhoslien (EE) 1995
43. Todd Sunderhaus (ChE) 1994
44. Jerome Reister (ChE) 1994
45. Jeffrey Hale (ChE) 1994
46. Jeffrey Hall (IE) 1994
47. Todd Whyte (IE) 1994
48. Steve Hamburg (CE) 1993
49. Jason Dusch (ME) 1993
50. Lloyd Browning (IE) 1993
51. Teresa Gale (IE) 1993
52. Sarah Jo Keith (CE) 1993
53. Tamara Lance (CE) 1993
54. Ashokkumer Arumugam (EE) 1992
55. Angela Chamberlin (CE) 1992
56. David Jett (EE) 1992
57. Cameron Hayes (EE) 1991
58. William Kerschner (EE) 1991
59. Imad Andari (CE) 1991
60. Bryan McLaughlin (EE) 1991
61. Kevin Spond (IE) 1991

62. James Chandler (EE) 1991
63. James Stephens (EE) 1991
64. Patrick Fambo (IE) 1991
65. Jeffrey Thomas (IE) 1990
66. Edward Simons (IE) 1990
67. Eric Easom (EE) 1990
68. Mark Fischer (EE) 1990
69. Suresh Iyengar (EE) 1990
70. Biju Damodoran (IE) 1990
71. James Jolliffe (EE) 1989
72. Kevin Schoedinger (EE) 1989
73. James Hoerter (EE) 1989
74. James Zehnder (ME) 1988
75. John Quesenberry (EE) 1988

IV. SERVICE

1. University Committees:

(a) University and School:

- Business Efficiency Task Force, 2011-12
- Activity Plans and Policies, 2005-2012
- Speed Technology Committee, 2005
- Duthie Chair in Engineering Logistics Search, Chairman 2003-2004
- Decanal Search Committee, 2003-2004
- Engineers Day Improvement Committee, 2003-2004
- Civil and Environmental Engineering, Chair Search Committee 2002
- Mechanical Engineering Faculty Search Committee 2002
- University Personnel Policy Review Committee (Ad Hoc) - 2001
- Chairman, Speed School Computing Committee, 2000-02
- Speed Promotion and Tenure Committee, 2000-02
- Member 1999 Distinguished Teaching Award Committee
- Chairman, ChE Departmental Chair Search Committee 1999
- Chairman, Duthie Chair in Logistics Search Committee 1999 - Hired Dr. G. D. Taylor
- At-Large Member, Speed Grievance Committee, 1994-00
- IE Representative on Speed Computer Committee 1993 -99
- Personnel Policy Review Committee (ad-hoc) 1996
- Computing Acquisitions Committee (ad-hoc) 1991-93
- Speed Co-op Committee, 1992-93
- Unit Selection Committee for University Distinguished Awards, 1992-93
- Speed By-Laws Revision (ad-hoc) 1989-91
- Speed Education and Learning Committee 1989-91
- Speed Co-op Committee 1988-90

(b) Department

Program Assessment Committee, 2006-pres.
Graduate Admissions Committee 2006 – pres.
IE ABET Portfolio Review Committee 1998-2003
IE Recruitment Committee 1994-2003
IE Computer Committee 1994-1997
IE Faculty Search Committee 1994-95
IE Library Holdings Review Committee, 1992

(c) Community

Board Member, St. Patrick Foundation, Louisville
Board Member, Mid-Park Steel Corp., 2009-2012
Voluntarily developed and taught a 3-hour logistics and supply chain module for INSPIRE program that promotes engineering education for minority high schools. (97-04)

2. Professional Activity:

Editorial Advisory Board Member for *Modern Materials Handling* 1999-pres
Scholarship Trustee, Institute of Industrial Engineers, 2006-09
Editor, IIE Transactions – Special Issue on Facility Logistics, 2007
Department Editor for *IIE Transactions: Quality and Reliability Engineering* 2001-2005
Session Chair, IERC, Atlanta, 2005
Judge for *Pritsker Doctoral Dissertation Award* 1999-2001
Judge for *Best Paper Award, IIE Transactions on Quality and Reliability*, 2001
Track Chair, QCRE Division of IIE, IERC- 2001, Dallas, TX
Immediate Past President, College Industry Council on Material Handling Education, (CICMHE) 2000-2002.
Session Chair, INFORMS 2000, San Antonio, TX
Reviewer, Alan Pritzker Doctoral Dissertation Award, IIE, 2000, 1999
Editorial Board Member for *IIE Transactions*
President, CICMHE 1998-00
Director, Louisville Chapter #18 Institute of Industrial Engineers (IIE)
Faculty Advisor, University of Louisville Chapter #902, IIE
NSF Proposal Reviewer, *Transformation to Quality Organizations Program*, 1995.
NSF Proposal Reviewer, *Production Systems/OR*, June 1995
Director, Facilities Planning and Design (FaPD) Division of IIE, 1994-'95
Director-Elect, FaPD Division of IIE, 1993-'94
Session Chair, 1993 Reliability and Maintainability Symposium
Vice President, CICMHE, 1995-'97
Industry Programs and Activities Committee Chairman, CIC-MHE, 1992-'95
1991-'92 Newsletter Editor, QC/Reliability Division of IIE
1991-'92 Chairman, Honors and Awards Committee, FaPD Division of IIE
1990-'91 Program Chairman, FaPD Division of IIE
1990-'91 Chairman, Membership Committee- QC/Rel Division of IIE

Referee for:

International Journal of Production Research
International Journal of Computers & Mathematics
Quality & Reliability Engineering International
Lifetime Data Analysis
Reliability Engineering and System Safety
IIE Transactions
Production Planning and Control
Technometrics
IEEE Transactions on Reliability
European Journal of Operational Research
Journal of Manufacturing Systems
Engineering Design and Automation
Journal of Systems Engineering
Artificial Neural Networks in Engineering Conference Proceedings
Industrial Engineering Research Conference Proceedings

Book Reviewer for:

John Wiley & Sons
McGraw-Hill Publishing
West Educational Publishing
Boyd and Fraser Publishing
Gordon and Breach Publishers and IIE Press

3. Consulting:

Sud Chemie, 2010
SAIC, 2009
Kentucky Manufacturing, 2009
Yum!Brands 2008
BellSouth, 2004-2005
Derby Industries, 2003-2005
SHOT, Space Hardware Optimization Technology, 2003-2004
Yum!Brands, 1994-pres
Sud-Chemie, 2000-2002
Accu-Tec Inc., 1997-2001
Grindmaster, 1999
Papa Johns International, 1998-99
SIGECO, Inc., 1996-1999
Kentucky Assoc of Electrical Cooperatives, 1998-2003
Papercone, 1996-2002
Caterpillar, Inc., 1997
Quaker Oats Corporation, 1993-1996
Humana, 1996, 1999
Liqui-Dri Foods, 1993-1996
Opta Foods Inc., 1994-1995

Safetran Systems Inc., 1995
Hershey Pasta Group, 1994
Jones Plastics and Engineering Company, 1994
American Air Filter, 1994
Naval Surface Warfare Center-Crane, Indiana, through TSC Corp., 1991-1993
Brown & Williamson Corporation, Louisville, KY, 1993
Crown Divisions of the Allen Group, Inc., 1993
Material Handling Institute, AGVS Product Section, Charlotte, NC, 1992-1993
IBM Corporation, Research Triangle Park, NC, 1989-1992
Delta Manufacturing Inc., Louisville, KY, 1990-1991
Louisville Metropolitan Sewer District, through GRW Engineers Inc., 1989
Custom Design and Decor, Louisville, KY, through GRW Engineers Inc., 1989
O'Neal Steel Incorporated, Louisville, KY, 1988