

# Curriculum Vitae

**Kai Yang**

Professor: Industrial and System Engineering  
Director, Healthcare System Engineering Group  
Wayne State University

## PERSONAL

### Education

Ph.D., Industrial and Operations Engineering, University of Michigan, 1990

M.S., Industrial and Operations Engineering, University of Michigan, 1985

B.S., Electrical Engineering, China Petroleum University, China, 1982

### Academic Positions

Director, Healthcare Systems Engineering Group, Wayne State University, 2010-Present.  
<http://hse.eng.wayne.edu/>

Professor, Industrial and Systems Engineering, Wayne State University, 2004-Present.

Associate Professor, Industrial and Systems Engineering, Wayne State University, 1995-2004.

Assistant Professor, Industrial and Systems Engineering, Wayne State University, 1990-1995

Research Assistant, Industrial and Operations Engineering, University of Michigan, 1987-1990

### Honors and Awards

- *Cecil C. Craig Lifetime Achievement Award*, American Society of Quality, 2016  
This is highest award in ASQ in technical competence in automotive division, to my multiple Lean Six Sigma and DFSS books.
- *Finalist for Pierskalla Award 2010* from INFORMS (This award is to recognize research excellence in the field of healthcare management science). For paper, “A Probabilistic Model for Predicting the Rate of No-Show in Hospital Appointments”
- *Leadership Award*, (To recognize the leadership in healthcare system engineering research), Department of Industrial and System Engineering, Wayne State University, 2010.

- Best Paper award from Industrial Engineering Research Conference (IERC) 2010, For paper “Adaptive Sequential Experimentation Methodology for Response Surface Optimization”
- Outstanding Achievement Award, International Society of Agile Manufacturing, 2009.
- Outstanding Teaching Award, College of Engineering, Wayne State, University, 1994, 1995.

## RESEARCH

### Research Programs Underway and Planned

1. *Collaborative Research: An Allocation Model with Dynamic Updates for Balanced Workload Distribution on Patient Centered Medical Homes* , National Science Foundation, CMMI-1233504, (Lead PI, 40%), \$552,009, 9/2012-9/15
2. *Interactive Visual Navigator (IVN)* US Department of Veteran Affairs, (PI, 100%) \$455,202, 9/2014-8/2015
3. *Interactive Visual Navigator (IVN)* US Department of Veteran Affairs, (PI, 100%) \$916,638, 10/2015-8/2017
1. *Identification of Electrical Vehicles in Households by Mining Smart Meter Data*, Electric Power Research Institute, Palo Alto, CA (PI 100%), \$75,000 , 4/2014-6/2015
4. *Interactive Visual Navigator (IVN) Software Upgrade and Code Maintenance For VISN 11 and selected Enterprise Facilities*, US Department of Veteran Affairs, (PI, 100%) \$250,000, 9/2013-8/2014
5. *Performance Metrics Management Toolset For VISN 11 and selected Enterprise Facilities*, US Department of Veteran Affairs, (PI, 100%) \$100,000, 9/2013-8/2014
6. *Non-VA Care National Standardization Project (NVNS): Business Analysis and Process Standardization Developed by the VHA Chief Business Office (CBO)/Purchased Care* , US Department of Veteran Affairs, (PI, 100%) \$125,000, 8/2013-3/2014
7. *Wounded Warrior Data Analysis Support for DOD-VA Joint Project (Phase I)*, US Department of Defense /US Department of Veteran Affairs (PI 100%), \$136,800, 9/2013-9/2014
8. *Readmission Causal Analysis and Resolution Toolkit*, US Department of Veteran Affairs, (PI 100%) \$96,000, 5/2013-9/2014

9. *Clinical Services Staffing Webtool Development*, US Department of Veteran Affairs, (PI 50%) \$150,000, 5/2013-9/2014
10. *Dialysis Make/Buy Tool Evaluation*, US Department of Veteran Affairs, (PI 100%) \$20,000, 8/2013-6/2014

*Those projects are process improvements and Lean Six Sigma oriented.*

## **PUBLICATIONS**

### **Published/Accepted Refereed Journal Articles**

- 1) Tyagi, S., Agrawal, S., Yang, K., Ying, H., 2017, An extended Fuzzy-AHP approach to rank the influences of socialization-externalization-combination-internalization modes on the development phase, *Applied Soft Computing*, 52(3), pp 505-518
- 2) Shams, I., Ajorlou, S. and Yang, K., 2015. Bayesian component selection in multi-response hierarchical structured additive models with an application to clinical workload prediction in patient-centered medical homes. *IIE Transactions*, 47(9), pp.943-960.
- 3) Mkanta, W.N., Chumbler, N.R., Yang, K., Saigal, R. and Abdollahi, M., 2016. Cost and Predictors of Hospitalizations for Ambulatory Care-Sensitive Conditions Among Medicaid Enrollees in Comprehensive Managed Care Plans. *Health Services Research and Managerial Epidemiology*, 3, p.2333392816670301.
- 4) Asadi, A., Verma, A., Yang, K. and Mejabi, B., 2016. Wastewater treatment aeration process optimization: A data mining approach. *Journal of Environmental Management*, In Press, <http://dx.doi.org/10.1016/j.jenvman.2016.07.047>
- 5) Tyagi, S., Cai, X. and Yang, K., 2015. Product life-cycle cost estimation: a focus on the multi-generation manufacturing-based product. *Research in Engineering Design*, 26(3), pp.277-288.
- 6) Tyagi, S., Cai, X., Yang, K. and Chambers, T., 2015. Lean tools and methods to support efficient knowledge creation. *International Journal of Information Management*, 35(2), pp.204-214.
- 7) Tyagi, S., Choudhary, A., Cai, X. and Yang, K., 2015. Value stream mapping to reduce the lead-time of a product development process. *International Journal of Production Economics*, 160, pp.202-212.
- 8) Alaeddini, A., Yang, K., Reeves, P. and Reddy, C.K., 2015. A hybrid prediction model for no-shows and cancellations of outpatient appointments. *IIE Transactions on Healthcare Systems Engineering*, 5(1), pp.14-32.
- 9) Verma, A., Asadi, A., Yang, K. and Tyagi, S., 2015. A data-driven approach to identify households with plug-in electrical vehicles (PEVs). *Applied Energy*, 160, pp.71-79.
- 10) Tyagi, S.K., Cai, X. and Yang, K., 2015. A Literature Survey and Future Directions for Product Development: A Focus on Conceptual Design Stage. *Journal of Cost Analysis and Parametrics*, 8(2), pp.108-125.
- 11) Arcidiacono, G., Wang, J. and Yang, K., 2015. Operating room adjusted utilization study. *International Journal of Lean Six Sigma*, 6(2), pp.111-137.

- 12) Arcidiacono, G., Costantino, N. and Yang, K., 2016. The AMSE Lean Six Sigma governance model. *International Journal of Lean Six Sigma*, 7(3). In Press
- 13) Ajorlou, S., Shams, I. and Yang, K., 2015. An analytics approach to designing patient centered medical homes. *Health care management science*, 18(1), pp.3-18.
- 14) Verma, A., Tyagi, S. and Yang, K., 2015. Modeling and optimization of direct metal laser sintering process. *The International Journal of Advanced Manufacturing Technology*, 77(5-8), pp.847-860.
- 15) Shams, I., Ajorlou, S. and Yang, K., 2015. A predictive analytics approach to reducing 30-day avoidable readmissions among patients with heart failure, acute myocardial infarction, pneumonia, or COPD. *Health care management science*, 18(1), pp.19-34.
- 16) Wang, J. and Yang, K., 2014. Using type IV Pearson distribution to calculate the probabilities of underrun and overrun of lists of multiple cases. *European Journal of Anaesthesiology (EJA)*, 31(7), pp.363-370.
- 17) Alaeddini, A., Yang, K., Mao, H., Murat, A. and Ankenman, B., 2014. An Adaptive Sequential Experimentation Methodology for Expensive Response Surface Optimization—Case Study in Traumatic Brain Injury Modeling. *Quality and Reliability Engineering International*, 30(6), pp.767-793.
- 18) Abdella, G.M., Yang, K. and Alaeddini, A., 2014. Multivariate adaptive approach for monitoring simple linear profiles. *International Journal of Data Analysis Techniques and Strategies*, 6(1), pp.2-14.
- 19) Wang, J., Dexter, F. and Yang, K., 2013. A behavioral study of daily mean turnover times and first case of the day start tardiness. *Anesthesia & Analgesia*, 116(6), pp.1333-1341.
- 20) Shams, I., Ajorlou, S. and Yang, K., 2013. Modeling clustered non-stationary Poisson processes for stochastic simulation inputs. *Computers & Industrial Engineering*, 64(4), pp.1074-1083.
- 21) Tyagi, S.K., Yang, K. and Verma, A., 2013. Non-discrete ant colony optimisation (NdACO) to optimise the development cycle time and cost in overlapped product development. *International Journal of Production Research*, 51(2), pp.346-361.
- 22) Ma, X. and Yang, K., 2013. Transforming sterile processing departments by service-oriented business process management. *International Journal of Business Process Integration and Management*, 6(3), pp.186-200.
- 23) Alaeddini, A., Yang, K. and Murat, A., 2013. ASRSM: A sequential experimental design for response surface optimization. *Quality and Reliability Engineering International*, 29(2), pp.241-258.
- 24) Alaeddini, A., Murat, A., Yang, K. and Ankenman, B., 2013. An efficient adaptive sequential methodology for expensive response surface optimization. *Quality and Reliability Engineering International*, 29(6), pp.799-817.
- 25) Guo, Y., Yang, K. and Alaeddini, A., 2013. A truncated logistic regression model in probability of detection evaluation. *Quality control and applied statistics*, 58(1), pp.109-110.
- 26) Tyagi, S., Yang, K., Tyagi, A. and Verma, A., 2012. A fuzzy goal programming approach for optimal product family design of mobile phones and multiple-platform architecture. *IEEE Transactions on Systems, Man, and Cybernetics, Part C (Applications and Reviews)*, 42(6), pp.1519-1530.

- 27) Jiang, Y. and Yang, K., 2012. An approach to dynamic analysis of multidimensional quality characteristics in automobile body-in-white assembly. *International Journal of Industrial and Systems Engineering*, 10(2), pp.135-152.
- 28) Guo, Y., Yang, K. and Alaeddini, A., 2011. A Truncated Logistic Regression Model in Probability of Detection Evaluation. *Quality Engineering*, 23(4), pp.365-377.
- 29) Tyagi, S.K., Yang, K., Tyagi, A. and Dwivedi, S.N., 2011. Development of a fuzzy goal programming model for optimization of lead time and cost in an overlapped product development project using a Gaussian Adaptive Particle Swarm Optimization-based approach. *Engineering Applications of Artificial Intelligence*, 24(5), pp.866-879.
- 30) Guo, Y. and Yang, K., 2011. Composite non-destructive evaluation system for probability of detection assessment. *International Journal of Quality Engineering and Technology*, 2(1), pp.29-44.
- 31) Alaeddini, A., Yang, K., Reddy, C. and Yu, S., 2011. A probabilistic model for predicting the probability of no-show in hospital appointments. *Health care management science*, 14(2), pp.146-157.
- 32) Mao, H., Yang, K.H., King, A.I. and Yang, K., 2010. Computational neurotrauma—design, simulation, and analysis of controlled cortical impact model. *Biomechanics and modeling in mechanobiology*, 9(6), pp.763-772.
- 33) Siddiqui, M. and Yang, K., 2010. Effective data analysis methods for incomplete two-level factorial experiments. *International Journal of Experimental Design and Process Optimisation*, 1(4), pp.348-364
- 34) Siddiqui, M. and Yang, K., 2010. Split-plot experiments with time trends in easy-to-change factors. *International Journal of Quality Engineering and Technology*, 1(3), pp.317-338.
- 35) Siddiqui, M. and Yang, K., 2010. Adaptive sequential experimentation technique for 3<sup>3</sup> factorial designs based on revised simplex search. *International Journal of Experimental Design and Process Optimisation*, 1(4), pp.296-314.
- 36) Yang, K., 2010. Inventive Principles of TRIZ with China's 36 Strategies. *The TRIZ Journal*. January.
- 37) Alaeddini, A. and Yang, K., 2009. Adaptive sequential experiment methodology for response surface optimisation. *International Journal of Quality Engineering and Technology*, 1(1), pp.40-61.
- 38) Siddiqui, M. and Yang, K., 2009. Adaptive sequential experimentation based on revised simplex search. *International Journal of Experimental Design and Process Optimisation*, 1(2-3), pp.105-122.
- 39) Yang, K., Zhang, H., 2009. Two patterns of evolution of technological systems, *TRIZ Journal*, December.
- 40) Yu, Q. and Yang, K., 2008. Hospital registration waiting time reduction through process redesign. *International Journal of Six Sigma and Competitive Advantage*, 4(3), pp.240-253.
- 41) Yang, K. and Cai, X., 2009. The integration of DFSS, lean product development and lean knowledge management. *International Journal of Six Sigma and Competitive Advantage*, 5(1), pp.75-99.
- 42) Abdallah, A.A., Avutapalli, B., Steyer, G., Sun, Z. and Yang, K., 2007. Effective NVH analysis and optimisation with CAE and computer experiments. *International Journal of Vehicle Noise and Vibration*, 3(1), pp.1-26.

- 43) Vanteddu, G., Chinnam, R.B. and Yang, K., 2006. A performance comparison tool for supply chain management. *International Journal of Logistics Systems and Management*, 2(4), pp.342-356.
- 44) Khalaf, F. and Yang, K., 2006. Product development processes: from deterministic to probabilistic, Part I. *International Journal of Product Development*, 3(1), pp.1-17.
- 45) Khalaf, F. and Yang, K., 2006. Product development processes—from deterministic to probabilistic: a design for 6-sigma approach to lean product validation, part II. *International Journal of Product Development*, 3(1), pp.18-36.
- 46) Yang, K. and Younis, H., 2005. A semi-analytical Monte Carlo simulation method for system's reliability with load sharing and damage accumulation. *Reliability Engineering & System Safety*, 87(2), pp.191-200.
- 47) Yang, K., 2005. Design for Six Sigma and value creation. *International Journal of Six Sigma and Competitive Advantage*, 1(4), pp.355-368.
- 48) Yang, K. and Cececek, E., 2004. Design vulnerability analysis and design improvement by using warranty data. *Quality and Reliability Engineering International*, 20(2), pp.121-133.
- 49) Yang, K., 2004. Multivariate statistical methods and Six-Sigma. *International Journal of Six Sigma and Competitive Advantage*, 1(1), pp.76-96.
- 50) Jang, K.Y., Yang, K. and Kang, C., 2003. Application of artificial neural network to identify non-random variation patterns on the run chart in automotive assembly process. *International Journal of Production Research*, 41(6), pp.1239-1254.
- 51) Yang, G. and Yang, K., 2002. Accelerated degradation-tests with tightened critical values. *IEEE Transactions on Reliability*, 51(4), pp.463-468.
- 52) El-Haik, B.S. and Yang, K., 2001. The Relationship between Axiomatic Design and Tolerance Design. *Journal of Design and Manufacturing Automation*, 1(1-2), pp.123-136.
- 53) Jang, K.Y. and Yang, K., 2001. Improving principal component analysis (PCA) in automotive body assembly using artificial neural networks. *Journal of manufacturing systems*, 20(3), pp.188-197.
- 54) Hu, M., Yang, K. and Taguchi, S., 2000. Enhancing robust design with the aid of TRIZ and axiomatic design (Part I). *TRIZ Journal*, October.
- 55) Hu, M., Yang, K. and Taguchi, S., 2000. Enhancing robust design with the aid of TRIZ and axiomatic design (Part II). *TRIZ Journal*, November.
- 56) Yang, K. and Zhang, H., 2000. A comparison of TRIZ and Axiomatic Design. *TRIZ Journal*, 8.
- 57) Yang, K. and Zhang, H.W., 2000. Compatibility analysis and case studies of axiomatic design and TRIZ. *The TRIZ Journal*, 9.
- 58) Yang, K. and Yang, G., 2001. Performance Degradation Analysis for IRLEDs. *Quality Engineering*, 13(1), pp.27-33.
- 59) El-Haik, B. and Yang, K., 1999. The components of complexity in engineering design. *IIE Transactions*, 31(10), pp.925-934.
- 60) Jugulum, R., Taguchi, S. and Yang, K., 1999. New developments in multivariate diagnosis: A comparison between two methods. *Journal of the Japanese Quality Engineering Society*, 7(5), pp.62-72.

- 61) Yang, K. and Yang, G., 1998. Degradation reliability assessment using severe critical values. *International Journal of Reliability, Quality and Safety Engineering*, 5(01), pp.85-95.
- 62) Yang, K. and Yang, G., 1998. Robust reliability design using environmental stress testing. *Quality and Reliability Engineering International*, 14(6), pp.409-416.
- 63) Yang, K., 1998. Robust design and reliability. *Nanjing University of Aeronautics and Astronautics, Transactions*, 15(1), pp.9-14.
- 64) Xue, J., and Yang, K., 1997. Continuous State Reliability Analysis. *Microelectronics Reliability*, 37(8), pp.1280-1281.
- 65) Xue, J. and Yang, K., 1997. Upper and lower bounds of stress-strength interference reliability with random strength-degradation. *IEEE Transactions on Reliability*, 46(1), pp.142-145.
- 66) Yang, K., 1996. Improving automotive dimensional quality by using principal component analysis. *Quality and Reliability Engineering International*, 12(6), pp.401-409.
- 67) Yang, K., 1996. Failure probability evaluation for normally distributed load-strength model with unknown parameters. *Reliability Engineering & System Safety*, 51(1), pp.115-118.
- 68) Yang, K. and Xue, J., 1995. Dynamic reliability measures and life distribution models for multistate systems. *International Journal of Reliability, Quality and Safety Engineering*, 2(01), pp.79-102.
- 69) Xue, J. and Yang, K., 1995. Symmetric relations in multistate systems. *IEEE transactions on reliability*, 44(4), pp.689-693.
- 70) Xue, J. and Yang, K., 1995. Dynamic reliability analysis of coherent multistate systems. *IEEE Transactions on Reliability*, 44(4), pp.683-688.
- 71) Yang, K., Xie, W. and He, Y., 1994. Parameter and tolerance design in the engineering modelling stage. *The International Journal of Production Research*, 32(12), pp.2803-2816.
- 72) Yang, K., He, Y. and Xie, W., 1994. Statistical diagnosis and analysis techniques: A multivariate statistical study for an automotive door assembly process. *Quality Engineering*, 7(1), pp.1-29.
- 73) Yang, K. and Jeang, A., 1994. Statistical surface roughness checking procedure based on a cutting tool wear model. *Journal of Manufacturing Systems*, 13(1), pp.1-8.
- 74) Jeang, A. and Yang, K., 1992. Optimal tool replacement with nondecreasing tool wear. *The International Journal of Production Research*, 30(2), pp.299-314.
- 75) Yang, K. and Murty, K.G., 1992. New iterative methods for linear inequalities. *Journal of Optimization Theory and Applications*, 72(1), pp.163-185.
- 76) Yang, K. and Hancock, W.M., 1990. Statistical quality control for correlated samples. *The International Journal of Production Research*, 28(3), pp.595-608.

## Books

- 1). Calabrese, C. and Yang, K., 2015. *Governare i processi per governare l'impresa: Lean Six Sigma*. (Italian), 1<sup>st</sup> Edition, Milan, Italy, Springer

- 2). Arcidiacono, G., Calabrese, C. and Yang, K., 2012. *Leading Processes to Lead Companies: Lean Six Sigma*. 1<sup>st</sup> Edition, Milan, Italy, Springer Science & Business Media.
- 3). Yang, K. and El-Haik, B.S., 2008. *Design for Six Sigma: Roadmap to Product Development*, (Portuguese), Translators, J.G. Buchaim, Pedro R. Bueno Neto, Candido Faga, 2008 Sao Paulo Brazil, Educator Press,
- 4). Yang, K. and El-Haik, B.S., 2008. *Design for Six Sigma: Roadmap to product development*, 2<sup>nd</sup> Edition, McGraw-Hill.
- 5). Yang, K., 2007. *Voice of the customer: Capture and analysis: Capture and analysis*. New York, McGraw Hill Professional
- 6). Yang, K., 2005. *Design for six sigma for service*. New York, McGraw Hill Professional.
- 7). Yang, K. and Trewn, J., 2004. *Multivariate statistical methods in quality management*. New York, McGraw Hill Professional.
- 8). Yang, K. and El-Haik, B.S., 2003. *Design for six sigma*, 1<sup>st</sup> Edition, New York, McGraw-Hill.

### Refereed Conference or Symposium Proceedings

- 1) Issac Shams, Saeede Ajorlou, Kai Yang (2014), "Bayesian Variable Selection in Multi-response Hierarchical Structured Additive Models," INFORMS Workshop on Data Mining and Analytics (DMA 2014), San Francisco, USA.
- 2) I. Shams, S. Ajorlou and K. Yang, "A Multivariate Hierarchical Bayesian Framework for Healthcare Predictions with Application to Medical Home Study in The Department of Veteran Affairs", *World Congress on Engineering (WCE) (Recommended for Best Paper Award)*, London, 2014
- 3) I. Shams, S. Ajorlou and K. Yang, "On Modeling Non-homogeneous Poisson Process for Stochastic Simulation Input Analysis", *World Congress on Engineering (WCE)(Recommended for Best Paper Award)*, London, 2014
- 4) S. Ajorlou, I. Shams, and K. Yang, "A Fast Clustering Algorithm for Mining Social Network Data", *World Congress on Engineering (WCE)*, London, 2014
- 5) I. Shams, S. Ajorlou and K. Yang, "Estimating Multiple Step Shifts in a Gaussian Process Mean with an Application to Phase I Control Chart Analysis", *World Congress on Engineering (WCE)*, London, 2014
- 6) Y. Zhao and K. Yang, 2014. Efficient staffing for hospital call centers with service blending. ." *Industrial and Systems Engineering Research Conference (ISERC)*., Montreal, Canada, 2014
- 7) A. Verma and K. Yang, "A Data-driven Approach for Wind Turbine Performance Benchmarking," *Industrial and Systems Engineering Research Conference*, Montreal, Canada 2014
- 8) S. Ajorlou, I. Shams, and K. Yang, "Predicting Patient Risk of Readmission with Frailty Models in the Department of Veteran Affairs", *IEEE International Conference on Automation Science and Engineering (CASE)*, 2014



- 9) I. Shams, S.Ajorlou, K. Yang, “A Patient Readmission Risk Prediction Model”, *Industrial and Systems Engineering Research Conference (ISERC)*, Puerto Rico, USA, 2013
- 10) X. Ma, K. Yang, P. Reeves, S. Yu. "RFID-Based Healthcare Workflow Management in Sterile Processing Department." *Industrial and Systems Engineering Research Conference (ISERC)*. Orlando, Florida, 2012
- 11) X. Ma, S. Lu, K. Yang, (Acceptance Rate 17%) “ Service-Oriented Architecture for SPDFLOW: A Healthcare Workflow System for Sterile Processing Departments”, *9th IEEE International Conference on Services Computing*, Honolulu, Hawaii, USA, 2012
- 12) K. Yang, X. Cai, S. Tyagi., “Activity-based Costing Model for MGPD”. D.D Frey et al (eds), *Improving Complex Systems Today, Advanced Concurrent Engineering*, 2011, Part 6, 409-416, DOI: 10.1007/978-0-85729-799-0\_48
- 13) G. Abdella, K. Yang, A. Alaeddini, “On the effect of location of explanatory variable on monitoring polynomial quality profiles”, *Spring Research Conference (SRC) 2011 on Statistics in Industry and Technology*. June 22-24 (2011), Chicago-Illinois
- 14) A. Alaeddini, C. Reddy, K. Yang, An Integrated Prediction and Optimization Models for Effective Appointment Scheduling in the Presence of Disturbances, *KDD 2011*, San Diego (2011)
- 15) A. Alaeddini, K. Yang, C. Reddy, A Stochastic Optimization Model for Patient Scheduling under Different Arrival Disturbances, *IERC 2011* , Reno, Nevada, ((2011)
- 16) A. Alaeddini, S. Shirinkam, K. Yang, An Adaptive Sequential Bayesian Methodology for Process Optimization, *IERC 2011*, Reno, Nevada (2011)
- 17) S. Shirinkam, A. Alaeddini, K. Yang, Feature Selection for Unlabeled Data with Complex Structure, *IERC 2011*, Reno, Nevada (2011)
- 18) A. Alaeddini, K. Yang, C. Reddy, (2011), “Stochastic Optimization Model for Patient Scheduling under Different Arrival Disturbances”, *IERC 2011*, Reno, NV
- 19) C. Reddy, A. Alaeddini, K. Yang, (2011) “ A probabilistic Model for Predicting Readmissions in Medical Centers”, *INFORMS 2011*, Charlotte, NC
- 20) A. Alaeddini, K. Yang, (2011), “An Integrated Prediction and Optimization Model for Effective Appointment Scheduling in the Presence of No Shows”, *INFORMS 2011*, Charlotte, NC
- 21) A. Alaeddini, K. Yang, C. Reddy (2011) “A Statistical Model for Predicting Disturbances in Hospital Appointment Scheduling”, *Student Paper Competition Joint Statistical Meetings*, 2011 (Miami, Florida)

- 22) A. Alaeddini, K. Yang, C. Reddy (2011) “A Probabilistic Model for Predicting Disturbances in Hospital Appointment Scheduling”, *2011 SIAM International Conference on Data Mining* April 28-30, Mesa, AZ
- 23) K. Yang, G. Abdella, A. Alaeddini, “A Variable Sampling Hotelling  $T^2$  Chart for Monitoring Simple Linear Quality Profiles”, *INFORMS 2010*, Austin, Texas, USA (2010)
- 24) C. Reddy, A. Alaeddini, K. Yang, “An Infinite Hidden-Markov Model for Multiple Change Point Estimation”, *INFORMS 2010*, Austin, Texas, USA (2010)
- 25) K. Yang, G. Abdella, A. Alaeddini, On Monitoring of Linear Quality Function under Uncertainty of the Process’s Shift, *ICMIE 2010*, Singapore (2010)
- 26) A. Alaeddini, K. Yang, S. Yu, “A Probabilistic Model for Predicting the Rate of No-Show in Hospital Appointments”, *2010 INFORMS Annual Meeting*, Nov 7-10, 2010, Austin, Texas
- 27) A. Alaeddini, K. Yang, A. Murat (2010), “An Adaptive Sequential Experimentation Methodology for  $n$ -dimensional Quadratic Response Surface Optimization”, *2010 INFORMS Annual Meeting*, Nov 7-10, 2010, Austin, Texas
- 28) Y. Jiang, K. Yang, (2010), “Use of Computer Simulation in Measurement Process of Automobile Body”, *2010 16th ISSAT RQD Conference*, August 5-7, Washington DC
- 29) S. Tyagi, S. Dwivedi, K. Yang, (2010), “Product Family Design and Multiple Platform Architecture”, *Proceedings of 17<sup>th</sup> ISPE International Conference on Concurrent Engineering*, September 6-10, Cracow, Poland 2010
- 30) A. Alaeddini, K. Yang, A. Murat, “Adaptive Sequential Experimentation Methodology for Response Surface Optimization”, *Proceedings of the 2010 Industrial Engineering Research Conference*, Cancun, Mexico, June 5-9, 2010
- 31) J. Trewn, K. Yang, “A Treatise on System Reliability and Design Complexity”, *ICAD200, First International Conference on Axiomatic Design*, Cambridge, MA, June 21-23, 2000
- 32) K. Yang, H. Zhang, “A comparison of triz and axiomatic design”, *Proceedings of ICAD200, First International Conference on Axiomatic Design*, Cambridge, MA, June 21-23, 2000
- 33) B. El-Haik, K. Yang, “An Integer Programming Formulation for the Concept Selection Problem with an Axiomatic Perspective”, *Proceedings of ICAD200, First International Conference on Axiomatic Design*, Cambridge, MA, June 21-23, 2000

- 34) B. El-Haik, K. Yang, "Tolerance Design - An Axiomatic Perspective", *Proceedings of the 1999 ASME Design Engineering Technical Conference*, September 12-15, 1999, Las Vegas, Nevada
- 35) B. El-Haik, K. Yang, "Measures of Complexity in Design", *Proceedings of the 1999 ASME Design Engineering Technical Conference*, September 12-15, 1999, Las Vegas, Nevada
- 36) J. Trewn, K. Yang, "A Treatise on the Mathematical Relationship Between System Reliability and Design Complexity", *Proceeding of 1999 IIE Research Conference*, 1999, Phoenix, Arizona
- 37) J. Trewn, K. Yang, "The Relationship Between System Functions, Reliability and Dependent Failures", *Proceeding of 1997 IEEE Conference on Systems, Man and Cybernetics*, pp. 4722-4724
- 38) J. Trewn, K. Yang, "Reliability Function Deployment(RFD) - A Systems Approach", *Proceeding of 1997 QFD Symposium*, pp. 55-74
- 39) K. Yang, G. Yang, "Performance-degradation analysis using principal-component method", *Proceedings of the 1997 Annual Reliability and Maintainability Symposium*, January, 1997, Philadelphia, Pennsylvania, pp. 136-141
- 40) K. Yang, J. Xue, "Reliability-design based on dynamic fractional-factorial experimental models", *Proceedings of the 1997 Annual Reliability and Maintainability Symposium*, January, 1997, Philadelphia, Pennsylvania, pp. 320-326
- 41) K. Yang, K.C. Kapur, "Customer Driven Reliability: Integration of QFD and Robust Design", *Proceedings of the 1997 Annual Reliability and Maintainability Symposium*, January, 1997, Philadelphia, Pennsylvania, pp. 339-345
- 42) K. Yang, J. Xue, "Continuous State Reliability Analysis", *Proceedings of the 1996 Annual Reliability and Maintainability Symposium*, January, Las Vegas, Nevada, January 1996, pp. 251-257
- 43) K. Yang "Robust Design and Reliability Engineering, An integrated approach", *Proceeding of Ford 2000 Conference on Integration of Quality Methods, Reliability and Robust Design*, Nov. 17-18, 1994, Fairlane Club, Dearborn, Michigan. pp. 141-185
- 44) W. Xie, K. Yang, Y. He, "A Multistage Multivariate Statistical Approach for the diagnosis of Sheet Metal Assembly Processes", "*Proceedings of ISSAT International Conference on Reliability and Quality in Design*", March 16-18, Seattle, Washington, pp 102-106
- 45) J. Xue, K. Yang, "Quality loss, robustness and reliability", August, 1993, "*Proceedings of ISSAT International Conference on Reliability and Quality in Design*," March 16-18, Seattle, Washington, pp 20-24

- 46) K. Yang, K. Murty, ' Surrogate Constraint Methods for Linear Inequalities', *"Proceedings of the NATO Advanced Study Institute on Advances in Combinatorial Optimization" NATO ASI series, series F, 1992, Vol 82, pp 19-39.*

## PRESENTATIONS

### Presentations at Conferences

- 1) Mohammad Abdollahi, Kai Yang, "A Data Driven Approach For Non-Invasive Coronary Artery Disease Diagnosis ", 2016 POMS Annual Conference. May 6-9, 2016, Orlando, Florida, U.S.A.
- 2) Ali Asadi, Anoop Verma, Kai Yang, "Plug-in Vehicle Charging Pattern Analysis", *Industrial and Systems Engineering Research Conferences, 2016, Anaheim, California, May 21-24*
- 3) Mohammad Abdollahi, Kai Yang, "A robust multi echelon supply chain network design considering a prioritized M/M/C queue", *Industrial and Systems Engineering Research Conferences, 2016, Anaheim, California, May 21-24*
- 4) Milad Zafar Nezhad, Kai Yang, "A Heuristic for Hospital Operating Theatre Scheduling under Uncertainty", *Industrial and Systems Engineering Research Conferences, 2016, Anaheim, California, May 21-24*
- 5) Ali Asadi, Anoop Verma, Kai Yang "Wastewater Sewerage Treatment Plant Aeration Process Optimization: A Data-driven Approach", INFORMS Annual Meeting, Philadelphia, Nov 1-4, 2015
- 6) Milad Zafar Nezhad, Hossein Badri, Kai Yang, "A Heuristic for Hospital Operating Theatre Scheduling under Uncertainty", INFORMS Annual Meeting, Philadelphia, Nov 1-4, 2015
- 7) Hossein Badri, Milad Zafar Nezhad, Kai Yang, "Shifting Bottleneck Heuristic for Stochastic Job Shop Scheduling Problems", INFORMS Annual Meeting, Philadelphia, Nov 1-4, 2015
- 8) Issac Shams, Saeede Ajorlou, Kai Yang, "Predicting Healthcare in Medical Homes with Bayesian Non-Parametric Models", INFORMS Healthcare Conference, 2015, July 29-31, Nashville, TN.
- 9) Yanli Zhao, Kai Yang, "Multi-skill Staffing Shift Planning for a Hospital Call Center with Service Blending", 2015 Industrial and Systems Engineering Research Conference. May 30 - June 2, 2015, Nashville, Tennessee.

- 10) A.Asadi, A.Verma, and K.Yang, "Identifying Households with Plug-In Electric Vehicles Based on Electrical Power Load Pattern Analysis, presented at 2nd Annual INFORMS Southeast Michigan Symposium, Oct 3, 2014.
- 11) Saeede Ajorlou, Issac Shams, Kai Yang "An Analytics Approach to Designing Patient Centered Medical Homes in the Department of Veteran Affairs," *INFORMS Annual Meeting*, San Francisco, 2014.
- 12) Issac Shams, Saeede Ajorlou, Kai Yang "Component Selection in Multi-response Hierarchical Structured Additive Models," *INFORMS Workshop on Data Mining and Analytics*, San Francisco, 2014.
- 13) A. Verma, S.Tyagi, and K.Yang, Plug-in Electric Vehicle (PEV) load pattern analysis: A Data-mining approach, Invited talk, *INFORMS, 2014*, San Francisco, CA.
- 14) A. Verma and K. Yang A Data-driven Approach for Wind Turbine Performance Bench-marking, *Industrial and Systems Engineering Research Conferences, 2014*, Montreal, Canada.
- 15) S. Tyagi, K. Yang, "Application of value stream mapping approach to reduce the lead-time in a product development process" , *Industrial and Systems Engineering Research Conference*, Montreal, Canada 2014
- 16) I. Shams, S. Ajorlou, K.Yang "Stochastic Patient Assignment Models for Balanced Healthcare in Patient Centered Medical Home" *SIAM Conference on Optimization*, San Diego, 2014.
- 17) I. Shams, S. Ajorlou, K. Yang "A Patient Flow Approach for Care Transition Processes to Reduce Hospital Readmissions," *INFORMS Southeast Michigan Symposium*, Detroit, 2013.
- 18) I. Shams, S. Ajorlou, K. Yang "An Analytics Framework for Reducing Patient Rehospitalizations in the Department of Veteran Affairs," *INFORMS Annual Meeting*, Minneapolis, 2013
- 19) I. Shams, S. Ajorlou, K. Yang "Balanced Healthcare Prediction Models for Patient Centered Medical Homes," *INFORMS Annual Meeting*, Minneapolis, 2013
- 20) I. Shams, K. Yang "Predicting Avoidable 30-day Hospital Readmissions," *INFORMS Healthcare Conference*, June 23-26, Chicago, 2013
- 21) S. Ajorlou, I. Shams, K. Yang "Clinical Workload Prediction Models for VA Patient Aligned Care Teams using Multilevel Analysis," *INFORMS Healthcare Conference*, June 23-26, Chicago, 2013

- 22) I. Shams, S. Ajorlou, K. Yang “A Patient Readmission Risk Prediction Model Based on Frailty Models,” *Industrial and Systems Engineering Research Conference*, Puerto Rico, May 18-22 , 2013
- 23) A. Alamri, K. Yang, “An empirical study of the effectiveness of Quality awards in the GCC”, ”, *Industrial and Systems Engineering Research Conference (ISERC)*, San Juan, Puerto Rico, May 18-22 2013
- 24) A. Alaeddini, K. Yang, J. Helm, “A Comprehensive Probabilistic Framework for Prediction of Patients’ Readmission to Medial Centers”, *Industrial and Systems Engineering Research Conference (ISERC)*, San Juan, Puerto Rico, May 18-22 2013
- 25) I. Shams, S. Ajorlou, K. Yang, “A Patient Readmission Risk Prediction Model”, *Industrial and Systems Engineering Research Conference (ISERC)*, San Juan, Puerto Rico, May 18-22 2013
- 26) X. Ma, K. Yang, B. Bidassie, “Bridging Primary and Specialty Care by Collaborative Healthcare Workflow”, *Industrial and Systems Engineering Research Conference (ISERC)*, San Juan, Puerto Rico, May 18-22 2013
- 27) N. Ravi, J. Wang, K. Yang, “Prediction of Primary Care Patients Workload”, *Industrial and Systems Engineering Research Conference (ISERC)*, San Juan, Puerto Rico, May 18-22 2013
- 28) J. Wang, K. Yang, “Estimation of the Probability of Surgery Lists Over and Under-run”, *Industrial and Systems Engineering Research Conference (ISERC)*, San Juan, Puerto Rico, May 18-22 2013
- 29) X. Ma, K. Yang, P. Reeves, S. Yu, (2012) “Real-time Operation Room Workflow Management. *Industrial and Systems Engineering Research Conference (ISERC)*, Orlando, Florida, May 19-232012
- 30) Y. Zhao, K. Yang, (2012) “.specialty care clinic scheduling in multiple-service-site health care system”, *Industrial and Systems Engineering Research Conference (ISERC)*, Orlando, Florida. May 19-23, 2012
- 31) S. Yu, K. Yang, N. Ravi., P. Reeves (2012) “Statistical Model based Patient Panel Pool Determination for Patient Centered Medical Homes”, *Industrial and Systems Engineering Research Conference (ISERC)*, Orlando, Florida., May 19-23, 2012
- 32) X. Ma, K. Yang (2011) “RFID-based Design of Smart Inventory for Medical Supply. *Institute for Operations Research and the Management Sciences (INFORMS 2011)*, Charlotte, NC
- 33) X. Ma, K. Yang (2011) “RTLS-based ubiquitous healthcare system design and implementation”, *Institute for Operations Research and the Management Sciences (INFORMS 2011)*, Charlotte, NC

- 34) X. Ma, K. Yang (2011) “RTLS-based ubiquitous management of medical supply”. *Industrial Engineering Research Conference (IERC)*, Reno, Nevada.
- 35) J. Wang, K. Yang, S. Yu (2011) “A Study of Operating Room Labor Performance”, *Society for Health Systems Conference and Expo 2011*, Orlando, FL Feb 17-19
- 36) J. Wang, K. Yang, S. Yu (2011) “Operating Room Utilization Improvement”, *Society for Health Systems Conference and Expo 2011*, Orlando, FL Feb 17-19
- 37) A. Murat, K. Yang, K., J. Wang, Y. Zhao (2011) “Multi-facility Operating Room Surgical Case Scheduling” *Society for Health Systems Conference and Expo 2011*, Orlando, FL Feb 17-19
- 38) S. Tyagi, K. Yang (2011), “Real-time location system (RTLS) for supply, processing and distribution facility of a hospital” *IERC 2011*, Reno, NV, 2011
- 39) J. Wang, A. Murat, K. Yang (2011) “Sensitivity Analysis of Factors Impacting Operating Room Utilization by Simulation” *IERC 2011*, Reno, NV, 2011
- 40) J. Wang, K. Yang (2011), “Using DEA to Evaluate Multi-facility Operating Room Efficiency”, *IERC 2011*, Reno, NV, 2011
- 41) X. Ma, Y. Zhao, A. Alarmiri, A. Murat, K. Yang (2011) “ Allocation of Perishable Medical Inventory with Returns and Transshipments”, *IERC 2011*, Reno, NV, 2011
- 42) X. Ma, K. Yang (2011) “RTLS-based Ubiquitous Management of Medical Supply”, Poster Presentation, *IERC 2011*, Reno, NV
- 43) S. Yu, J. Wang, K. Yang (2010) “Improving Telephone Care by reducing response time and abandon rate”, Poster Presentation, ”, *IERC 2010*, June 5-9, 2010, Cancun, Mexico
- 44) A. Alaeddini, K. Yang, A. Murat, “Adaptive Sequential Experimentation Methodology for Response Surface Optimization”, *IERC 2010*, June 5-9, 2010, Cancun, Mexico
- 45) A. Alaeddini, K. Yang, “A Probabilistic Model for Decreasing the Rate of No-Show in Hospital Appointments”, *IERC 2010*, June 5-9, 2010, Cancun, Mexico
- 46) X. Cai, K. Yang, “The Cost Impact of Lean Product Development Process”, *IERC 2010*, June 5-9, 2010, Cancun, Mexico
- 47) X. Cai, K. Yang, “Lean Multi-Generational Product Development Process”, *IERC 2010*, June 5-9, 2010, Cancun, Mexico
- 48) J. Wang, S. Yu, K. Yang, “Operating Room Utilization Study”, *IERC 2010*, June 5-9, 2010, Cancun, Mexico

- 49) G. Abdella, K. Yang, D. Ellis, A. Alamri, "Mistake-Proofing in Inpatient Discharging Process", *IERC 2010*, June 5-9, 2010, Cancun, Mexico
- 50) X. Ma, A. Alaeddini, A. Murat, K. Yang "A hybrid optimization-based statistical approach for multivariate-process-control in auto-manufacturing company", *IERC 2010*, June 5-9, 2010, Cancun, Mexico
- 51) K. Yang, G. Abdella, A. Allaeddini, "On simple Linear Profile when Process's Shift behaves Randomly Between Profiles", *Joint Research Conference on Statistics in Quality*, May 25 - 27, 2010, National Institute of Standards and Technology (NIST) Gaithersburg, MD
- 52) K. Yang, "Theory of Inventive Problem Solving and Its Role in Lean Six Sigma", *IDGA Lean Six Sigma for Defense Conference*, December 7-9, 2009, Vienna, Virginia.
- 53) K. Yang, "The Integration of DFSS, Lean product Development and Lean Knowledge Management", *IERC 2009 Annual Conference*, May 30, - June 3, 2009 Miami, FL
- 54) K. Yang, Y. Guo, "Capability Assessment of POD with Truncated Logistic Regression Model", *IERC 2009 Annual Conference*, May 30, - June 3, 2009 Miami, FL
- 55) K. Yang, M. Siddiqui, " Adaptive Sequential Search Procedures for Factorial Experiments", *IERC 2009 Annual Conference*, May 30, - June 3, 2009 Miami, FL
- 56) K. Yang, M Siddique, "A New Method to analyze 2 level incomplete factorial experiments", *Industrial Engineering Research Conference (IERC) 2008*, May 19-21 – Vancouver, Canada.
- 57) K. Yang, " Information based lean product development", *Industrial Engineering Research Conference (IERC) 2007*, May – Nashville.
- 58) A. Abdalla, Kai Yang "A proposed approach for multi-objective robust design: *Industrial Engineering Research Conference (IERC) 2007*, May – Nashville
- 59) K. Yang: " Design for Six Sigma-A roadmap for Product Development", *The First International Workshops on Design for Six Sigma*, September 12th & 13th, 2005, Glasgow, Scotland
- 60) K. Yang, "Design For Six Sigma and Value Creation", *The First International Conference on Six Sigma*, 16th-17th December 2004, Glasgow, Scotland
- 61) K. Yang, "System Reliability and Design Vulnerability", *58th Annual Quality Congress*, May 24-26, 2004 • Toronto, Ontario, Canada
- 62) K. Yang, "The Relationship Between System Functions, Reliability and Dependent Failures", October 11-14, 1998, *IEEE Conference on Systems, Man and Cybernetics*, San Diego, California.



- 63) K. Yang, "Evaluating QFD Designs: A Systems Approach", *The 3rd Annual International QFD Symposium*, October 1-2, 1997, Linkoping, Sweden
- 64) K. Yang, "Robust Design and Reliability", *The 2nd International Conference on Quality and Reliability*, September 1-3, 1997, Hong Kong
- 65) K. Yang, "Engineering Design Evaluation by using Multivariate Statistics", *INFORMS EURO XV joint international meeting*, Barcelona, Spain, July 14-17, 1997
- 66) K. Yang, "Systematic Approach for Studying Variation in Auto Industry Using Multivariate Statistics", *Sixth Industrial Engineering Research Conference*, May 17-18, 1997, Miami Beach, Florida.
- 67) J. Trewn, K. Yang, "Reliability Function Deployment: A Systems Approach", *Sixth Industrial Engineering Research Conference*, May 17-18, 1997, Miami Beach, Florida.
- 68) K. Yang, "Visual Animation of Multivariate Statistical Analysis for Improving Dimensional Quality for Automotive Assembly Process", *Sixth Industrial Engineering Research Conference*, May 17-18, 1997, Miami Beach, Florida.
- 69) K. Yang, K. Kapur, "Customer-Driven Reliability Analysis on Product Degradation and Capability study", *Fifth Industrial Engineering Research Conference*, May 18-20, 1996, Minneapolis, Minnesota.
- 70) G Yang, K. Yang, "Degradation Reliability Evaluation Based on Tightened Failure Criteria", *Fifth Industrial Engineering Research Conference*, May 18-20, 1996, Minneapolis, Minnesota.
- 71) K. Yang, "Multivariate Statistical Analysis for Automotive Body Dimensional Quality", *Fifth Industrial Engineering Research Conference*, May 18-20, 1996, Minneapolis, Minnesota.
- 72) K. Yang, K. Kapur, "*Customer Driven Reliability: Models, Testing and Improvement*", Ford FAO robustness reliability symposium, October 9-10, 1995 Ford World Headquarters' Auditorium, Dearborn, Michigan
- 73) K. Yang, "Geometrical animation of PCA and FA in dimensional quality analysis", ORSA/TIMS 1995 November conference, New Orleans.
- 74) K. Yang, "Current development in quality and reliability engineering", present at The First Conference on Management Sciences for Domestic and Overseas Young Scientists, July 19-22, 1994, Beijing, China
- 75) W. Xie, Y. He, K. Yang, "The multivariate and multistage statistical dimensional quality analysis and visual display techniques", present in ORSA/TIMS Joint National Meeting, Detroit, October 23-26, 1994.

- 76) Y Zou, K. Yang, " Probability of failure for normally distributed stress-strength model with unknown parameters", present in ORSA/TIMS Joint National Meeting, Detroit, October 23-6, 1994.
- 77) J Xue, K. Yang, " Flexible method for estimating interaction effects in two-level fractional factorial design", present in ORSA/TIMS Joint National Meeting, Detroit, October 23- 26, 1994.
- 78) K. Yang, K. Murty, 'Sequential and Parallel Methods for Linear Inequalities', SIAM annual conference, 1990, July 15-21, 1990 Chicago.
- 79) K. Yang, 'Study of Quality Control Problems in Ultrasonic Welding Process' , presented in *Annual Conference on Taguchi Method, the American Supplier Institute*, May, 1989, Dearborn, Michigan.

## **TEACHING**

### **New Courses Introduced**

Developed a new course: IE 7550 Introduction to Healthcare Systems Engineering: To be offered in fall 2014. This course will describe and model key healthcare processes, such as, clinics, surgery operation, emergency department, etc, from system engineering perspective, and apply key system engineering methodologies, including system analysis, system design, system management and control to improve healthcare systems.

Revised/upgraded IE 8200: Multivariate Statistical Methods in Quality Engineering

### **Ph.D Committee Chaired**

### **Thesis Completed**

1. Hempi Prajudi, 1993, "A Systematic Approach in Dimensional variation of Flexible Structures for Automobile Body Structures"  
Current Position: CEO at Indonesia Market Quote
2. Jianan Xue, 1995, "Continuous State Reliability Analysis and Robust Design"  
Current Position: Passed away
3. Myung D. Lee, 1996, "Methodology for Measurement Systems Analysis and Dimensional Control Process of Automotive Body Manufacturing"  
Current Position: Manager, Body Engineering / Body Structures at Ford Motor Company
4. Hussein M. Hamade, 1996, "A Systematic Approach to Design Evaluation Using Multivariate Statistics"  
Current Position: Technical Learning Manager at Ford Motor Company
5. Basem S. El-Haik, 1996, "Vulnerability Reduction Techniques in Engineering Design"

Current Position: Director, Six Sigma Professionals Inc.

6. Guangbin Yang, 1999, “Reliability Enhancement Through Degradation Testing”  
Current Position: Walter P. Chrysler Technical Fellow, ASQ Fellow
7. Jayant Trewn, 1999, “Functional Reliability Design and Evaluation Methodology: A Systems Approach”  
Current Position: Director, Quality Assurance, Thompson Scientific
8. Rajesh Jugulum, 2000, “New Dimension in Multivariate Diagnosis to Facilitate Decision Making Process”  
Current Position: Senior Vice President, Citi Group
9. Cuong Van Pham, 2000, “New Approaches to the Robust Wirebonding of Integrated Circuits and Its Process Control”  
Current Position: Group Vice President of Engineering, SEMX Corporation
10. Minxiang Hu, 2001, “Enhancing Robust Design with aid of TRIZ and Axiomatic Design”  
Current Position: Senior Quality Program Manager at HP Corporate Quality Office
11. Khi-Young Jang, 2002, “Neural Network Approaches to Develop Robust Dimensional Data Analysis in Automotive Body and Assembly Process”  
Current Position: Purchasing Manager, General Motors
12. Hisham Younis, 2003, “Probabilistic Multivariate Reliability Designs with Dependency Structures”  
Current Position: Manager, Power Train Operation Manufacturing Operations Reliability and Maintainability at Ford Motor Company
13. Faysal Khalaf, 2005, “Time and Cost based Product Development Process”  
Current Position: Manager, Global Quality and Productivity Planning at Ford Motor Company
14. A. Abdallah, 2007, “Design for NVH: A Roadmap for Robust NVH Design and Development”  
Current Position: Associate Professor, The German Jordanian University
15. Yan Guo, 2009, “The New Methods on NDE Systems POD Capability Assessment and Robustness Improvement”  
Current Position: Research Scientist, Nondestructive Evaluation, Siemens Energy
16. Mubashir Siddiqui, 2009, “Adaptive Design and Analysis Procedures for Expensive Industrial Experiments with Inadequate Prior Knowledge”  
Current Position: Professor and Chairman, Department of Mechanical Engineering, NED University of Engineering and Technology, Karachi, Pakistan

17. Xianming Cai , 2010, “Generational Product Development: Lean Application and Cost Model”  
Current Position: Gas Turbine Module Integrator, Project Manager, Senior Engineer at the Siemens Energy
18. Adel Alaeddini, 2011, “Self Learning Strategies for Experimental Design and Response Surface Optimization”  
Current Position: Assistant Professor, University of Texas at San Antonio
19. Galal Abdella, 2011, “An Optimization of Online Monitoring of Linear and Polynomial Quality Profiles”  
Current Position: Assistant Professor at Benghazi University
20. Xiaoyu Ma, 2012, “RFID-Based Business Process and Workflow Management in Healthcare: Design and Implementation”  
Current Position: Senior Business Analyst, Digital Innovation at Ford Motor Company
21. Jihan Wang, 2012, “Operating Room Utilization and Turnover Behavioral Study”  
Current Position: Healthcare Quality Analyst, Steward Healthcare Systems, Boston

#### **Ph.D. Candidate**

1. Issac Shams
2. Saeede Ajorlou
3. Satish Tyagi
4. Yanli Zhao
5. Amr Alamri

#### **Ph.D. Pre-Candidate**

1. Ali Reza Asadi
2. Elnaz Asghari Torkamani

#### **M.S. Committees Chaired**

1. Yaqun Zou, 1994, “Failure probability evaluation for strength-stress interference model with unknown parameters
2. Hemanth Munipalli, 1995, “Systematic Approach for Studying Variation in Auto Industry Using Multivariate Statistics”

3. Heng Xiao, 1995, “A concurrent engineering approach for improving an automobile door hanging process”
4. Anupama Chitrangana, July, 2010, “Applications of Lean Six Sigma in Healthcare Industries”

## **Short Course and Workshops**

- (1) “Tutorial on Industrial Engineering”, 3-day short course given to Chongqing Municipal Delegation in Detroit, Michigan, 1991
- (2) “Quality Engineering Methods”, workshop given at USCAR Low Emission Paint Consortium in Wixom, Michigan, 1996
- (3) “Design for Six Sigma”, a 3 day short course given to Lugang Inc, Guangxi, China, 2004
- (4) “Design for Six Sigma”, a day short course given to York International Inc, Shanghai, China, 2004
- (5) “Design for Six Sigma”, a 3 day short courses given to Delta Electronics, Shanghai, China, 2004
- (6) “Quality Engineering”, a 3 day short course given to Bosch/Siemens home electronics, Shanghai, China, 2005
- (7) “Theory of Inventive Problem Solving”, a 2 day short course to ZTE Inc, Shenzhen, China, 2005
- (8) “Quality Engineering”, a 3 day short course given to General Motors, Shanghai, China
- (9) “Design for Six Sigma Overview”, a one day workshop given to Siemens Energy, in Orlando Florida, and Dusseldorf, Germany, 2005
- (10) “Design for Six Sigma”, a 3 day short course given to Siemens Energy for 6 times, in both Orlando Florida, and Dusseldorf, Germany, 2006
- (11) “Quality Engineering”, a 3 day course given to Nissan, China, 2006
- (12) “Design for Six Sigma Overview”, a one day workshop given to Emerson Power Network, Inc, Columbus, Ohio, 2006
- (13) “Theory of Inventive Problem Solving”, a one day workshop given to ASQ, Grand Rapids Chapter, Grand rapids, Michigan, 2007
- (14) “Quality Engineering”, a one day short course given to BASF, Wyandot, Michigan, 2007

- (15) “Quality Engineering”, a one day short course given to BASF, Ledgewood, NJ
- (16) “Voice of customer”, a one day short course given to Avery Denison, Shanghai, China, 2007
- (17) “Design for Six Sigma”, a 3 day short course given to Emerson, Suzhou, China, 2007
- (18) “Theory of Inventive Problem Solving”, a one day short course for Metrologic, Shanghai, China, 2007
- (19) “Theory of Inventive Problem Solving and Lean Product Development”, a two day short course for WeidMuller, Shanghai, China, 2007
- (20) “Quality Function Deployment”, a one day short course given to TRW, Shanghai, China, 2008
- (21) “Quality Engineering and Design of Experiment”, a 3 day short course given to Apple Inc, Shanghai, China, 2008
- (22) “Quality Engineering and Design of Experiment”, a 3 day short course given to Apple Inc, Shenzhen, China, 2008
- (23) “Quality Engineering and Design of Experiment”, a 3 day short course given to Apple Inc, Cupertino, California, 2009
- (24) ”QFD and Axiomatic Design”, a short course module in IE 428 – Design for Six Sigma, For Department of Industrial Engineering and Management Science, McCormick School of Engineering, Northwestern University , Evanston, IL, 2009
- (25) “Lean Product Development”, a one day short course given to for Kulicke and Soffa, Shainghai, China, 2009
- (26) ”QFD and Axiomatic Design”, a short course module in IE 428 – Design for Six Sigma, For Department of Industrial Engineering and Management Science, McCormick School of Engineering, Northwestern University , Evanston, IL, 2011
- (27) “Design for Six Sigma”, a 9 day workshop hosted by Lean Prove, Florence, Italy, 2014
- (28) Lean Six Sigma Green Belt Training, co-instructed with Jayant Trewn, to Fabio Perini North America, Green Bay, Wisconsin, 2015

### **Course Taught at University**

IE 4250 Engineering Data Analysis

IE 6210 Probability and Statistics  
IE 6270 Engineering Experimental Design  
IE 6560 Deterministic Optimization Method  
IE 7250 Quality Engineering  
IE 7610 Fundamentals of Six Sigma  
IE 7710 Stochastic Processes  
IE 8200 Multivariate Statistical Methods in Quality Engineering

## **SERVICE**

### **Committee Assignments at University**

Member, University Library Committee 1997  
Member, University Tenure and Promotion Committee, 2009  
Member, Healthy Urban Waters Program, Wayne State University, 2015-Present  
Member, Urban Center for Antimicrobial Resistance, Discovery, Education, and Stewardship, Wayne State University, 2015-Present  
Member, College Tenure and promotion committee, 1998-2012  
Member, Research Committee, College of Engineering, Wayne State University, 2016-  
Chair, Departmental Research and Ph.D Program Committee, 2011-Present  
Chair, Departmental Budget Committee, 2003 – 2011  
Member, Departmental Research and Ph.D Program Committee, 2003-Present  
Member, Departmental Master Program Committee, 2002-2009

### **Service to Government Agencies and Professional Organization**

#### **Service to Government**

#### **Review Panel Members:**

National Science Foundation  
Israel Science Foundation  
Research Grants Council, Hong Kong

## **Service to Professional Organizations**

### **(1) Editorial Functions**

- Department Editor, *IIE Transactions on Healthcare Systems Engineering*
- Chief Guest Editor, Special Issue of Health Informatics, *IIE Transactions on Healthcare Systems Engineering*
- Associate Editor, *IIE Transactions*
- Associate Editor: *International Journal of Six Sigma and Competitive Advantage*
- Editorial Board Member: *International Journal of Quality Engineering and Technology*
- Editorial Board Member: *International Journal of Experimental Design and Process Optimization*
- Reviewers of  
*IIE Transactions,*  
*IIE Transactions on Healthcare Systems Engineering*  
*Linear Algebra and its Applications,*  
*IEEE transactions on reliability,*  
*Journal of Statistical Computation and simulation,*  
*International Journal of Quality, Reliability and safety Engineering,*  
*International Journal of Production Economics*  
*Health Services Research*

### **(2) Conference Organizations**

- Track Chair, Healthcare Track, 2017 IISE Annual Conference and Expo, 2016 – 2017
- Organizing Committee Member and Session Chair, NSF Health Systems Optimization Workshop, September 12-13, 2014, Chicago
- Organizing Committee Member and Track Chair, 2015 IIE/SHS Healthcare Systems Process Improvement Conference, Feb 18-20, Orlando, FL
- Co-Chair, INFORMS Southeast Michigan Symposium, Oct 3, 2014
- Co-Chair, INOFORMS Southeast Michigan Symposium, Nov 8, 2013



- Organizing Committee Member and Cluster Chair, INFORMS Conference on Healthcare, June 23-26, 2013
- Conference Chairman for J. F. Pearson The First Annual Conference on Corporate Innovation and R&D Management-Managing technology and innovation for maximum return and competitive advantage, June 7-10, 2005, Shanghai, China
- Organizing Committee Member, ORSA/TIMS Joint National Meeting, Detroit, October 23-6, 1994
- Cluster Chair, , INFORMS Conference on Healthcare, June 23-26, 2013
- Session Chairs, *INFORMS, ISERC*

### **(3) Professional Society Committee**

- Chair: Edward Medal Award Committee, American Society of Quality, 2006-2007
- Member: Deming Medal Award Committee, American Society of Quality, 2008-Present
- Member, Conference Committee, Society of Healthcare Systems, IIE, 2014-2015
- Member, Education Committee, Society of Healthcare Systems, IIE, 2014-Present
- Member, Academic Committee, Society of Healthcare Systems, IIE, 2016-Present
- President: INFORMS Southeast Michigan Chapter 2015

### **Consulting Arrangement**

I have worked and consulted with the following industrial companies and other organizations

- Electrical Power Research Institute (2016)
- Quicken Loans (2016)
- Abbott laboratories
- Apple Inc
- BASF
- Bosch/Siemens home electronics
- Chrysler LLC
- Ford Motor Company
- General Motors
- John D. Dingell VA Medical Center
- Karmanos Cancer Institute
- Siemens
- USCAR Low Emission paint Consortium
- ZTE

