

Richard A. Ivey

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Education

North Carolina State University, Raleigh, NC

Masters of Integrated Manufacturing Systems Engineering, May 2009

– GPA: 4.0

Auburn University, Auburn, AL

Bachelor of Science in Industrial & Systems Engineering, cum laude, May 2007

– GPA: 3.8 (major), 3.4 (overall)

Specialized Training

- Six Sigma Black Belt Training
- Lean System Design & Methodologies
- OSHA 10-hour Training Course

Experience

Healthcare Related:

Vanderbilt Heart & Vascular Institute, Nashville, TN

Quality Intern, Under the direction of Jeff Samz & Robin Steaban, May-December 2008

- Facilitating data-driven process improvement projects in an effort to reduce cost and increase quality
- Gaining valuable experience in the clinical setting during each phase of the improvement projects
- Leading Six Sigma review sessions for managers taking Green Belt Six Sigma course from ASQ

WakeMed Hospital, Raleigh, NC

Performance Improvement Intern, Under the direction of Kenneth Murray, Spring 2008

- Led a study to determine the amount of supplies unnecessarily discarded due to contamination
- Used OptiFlex supply scanning software and supply expense reports to quantify the amount of loss
- Presented recommended solution methods to reduce the amount of supplies wasted hospital-wide

Industrial Related:

ELMCO Inc., Hunstville, AL (acquired by Westar Aerospace & Defense in 2003)
Engineering Intern, Test and Evaluation Division, Summer 2003

- Performed systems analysis in accordance with defense technology
- Used Matlab to automate data processing
- Presented findings to employees at the conclusion of the summer

Academic Related:

International Research Experience, Kiev, Ukraine
Student Researcher in U.S.-Ukraine Research Experience for Students, Fall 2006
Under the direction of Professor Sergiy Butenko (PhD)

- Conducted research with graduate students in Ukraine using mathematical optimization techniques
- Attended seminars presented by Ukrainian professors discussing current research topics
- Developed relationships with Ukrainian students through numerous social activities

Texas A&M University, College Station, TX
REU Participant, Department of Industrial & Systems Engineering, Summer 2006
Under the direction of Professor Halit Uster (PhD)

- One of 33 participants in the USRG program at Texas A&M
- Studied inventory control techniques and facility location problems to gain background knowledge in these areas of supply chain management
- Assisted in development of mathematical models that reflect the integration of inventory and location decisions in continuous settings
- Examined the structural properties of the mathematical models in order to construct solution methods
- Studied Weiszfeld's algorithm and expanded the iterative approach to solve the integration of inventory and
- Presented findings at a poster session involving all REU participants at Texas A&M
- Assisted in teaching high school mathematics instructors basic inventory control techniques and the development of these techniques into research topics

Auburn University, Auburn, AL
Research Assistant, Department of Industrial & Systems Engineering, Spring 2006
Under the direction of Professor Emmett Lodree (PhD)

- Conducted interviews to investigate supply chain operations of local bookstores
- Prepared presentation slides to be used in a supply chain management class
- Developed student and bookstore questionnaires to be used in evaluating the supply chain characteristics of the area bookstores
- Teamed with another undergraduate to conduct investigations of the supply chain network and gain background insight on supply chain management

University of Oklahoma, Norman, OK

Research Assistant, School of Civil Engineering, December 2005 – present

Under the direction of Professor Jin-Song Pei (PhD)

- Continued with technical assistance and discussions to assist the technical writing in fall 2006
- Visited the team at OU in March 2006 to provide assistance and offer technical guidance to the other student participants, and assisted Dr. Pei to finalize technical execution plan
- Contributed to brainstorming, drafting, and completing manuscripts using \LaTeX that led to co-authorships in publications included at the 2005 IMAC Conference for structural health monitoring and the 2006 SPIE Conference for smart structures and materials
- Analyzed data from a wireless sensor network through data cleansing and regression analysis
- Explored the application of “Smart Dust” in road condition monitoring
- Conducted thorough literature review of relevant publications in the area of wireless sensor networks, specifically “Smart Dust”

REU Participant, School of Industrial Engineering, Summer 2006

Under the direction of Professor Shivakumar Raman (PhD) and Professor Jin-Song Pei (PhD)

- One of 11 participants in the metrology REU at OU
- Conducted testing of sensors utilizing a freeze-thawing chamber using LabView
- Provided detailed records of the results and presented them using Microsoft Excel
- Conducted literature review of “Smart Dust” applications
- Studied decision support systems using the analytical hierarchy process
- Created a decision support system to aid in selection of metrology equipment
- Presented findings to peers and faculty sponsors at the conclusion of the program through a poster presentation, Powerpoint presentation, and a 44 page technical report

Auburn University, Auburn, AL

Research Assistant, Department of Industrial & Systems Engineering, Spring 2005

Under the direction of Professor Lewis Payton (PhD)

- Studied CNC G-Code and hand wrote programs to encapsulate many features of G-Code
- Developed laboratory material for an undergraduate manufacturing processes class
- Sketched a friction stir-welding (FSW) tool using Solid Edge

Publications

Journal Paper:

1. “Development and Validation of ‘Smart Dust’ for Pavement Condition Monitoring,” Pei, J.S., Ivey, R.A, Lin, H.J., Landrum, A.R., Sandburg, C.J., King, T., Ferzli, N.A., Zaman, M.M., Refai, H.H. *International Journal of Structural Health Monitoring*, submitted in November 2006.

Conference Papers:

1. “An Application of ‘Smart Dust’ for Pavement Condition Monitoring,” Ferzli, N.A., Ivey, R.A., King, T., Sandburg, C.J., Pei, J.S., Zaman, M.M., Refai, H.H., Lin, H.J., Landrum A., and Victor, R., *Proceedings of SPIE - Volume 6174*, San Deigo, CA, April 11, 2006.

2. “Experimental Investigation of ‘Smart Dust’ for Pavement Condition Monitoring,” Ferzli, N.A., Sandburg, C.J., King, T., Pei, J.S., Zaman, M.M., Refai, H.H, Ivey, R.A., and Harris, O., *Proceedings of the 24th International Modal Analysis Conference (IMAC XXIV)*, St. Louis, MO, January 30 - February 2, 2006.

Technical Reports:

1. “Sacred Harp Musical Heritage Association (SHMHA) Database,” Prepared for Computer Integrated Manufacturing Course at NC State University, December 2007.
2. “Expansion Procedures for Airport Security Operations,” Ivey, R.A., Frost, J.R., Crane, P.R., Prepared for Senior Design course at Auburn University, Spring 2007.
3. “Analysis of Integrated Inventory and Location Decisions,” Ivey, R.A., Keskin, B.B, and Uster, H. Prepared for the USRG at Texas A&M , Summer 2006.
4. “Sally Models SM Pizza Shop,” Ivey, R.A., Frost, J. R., and Crane, P.R., Prepared for Simulation course at Auburn University, Spring 2006.
5. “Study of Wireless Sensor Network to Detect Hazardous Road Conditions,” Ivey, R.A. and Harris, O., Prepared for REU at the University of Oklahoma, Summer 2005.
6. “Selection of Proper Measuring Equipment,” Park, D., Ivey, R.A., Cortez, C., Prepared for REU at the University of Oklahoma, Summer 2005.

Coursework

Lean Production Systems	Six Sigma
Advanced Statistical Quality Control	Operations Planning & Control
Business Finance	Database Applications
Simulation	Engineering Economics
Operations Research (Stochastic & Deterministic)	Manufacturing Systems
Manufacturing Processes	Decision Support Systems
Methods Engineering & Work Measurement	Occupational Safety & Ergonomics

Professional Affiliations

- American Society for Quality (ASQ), 2006 - present
- Institute of Industrial Engineers (IIE), 2003 - present, Treasurer of Auburn University student chapter for 2006-07 academic year
- Institute for Operations Research and Management Science (INFORMS), 2005-08

Awards & Achievements

- NC State Carl F. Zorowski Scholarship, 2007-08 academic year
- Alpha Pi Mu (Industrial Engineering National Honor Society), Spring 2007
- Samuel Ginn College of Engineering Dean’s List, Fall 2006
- NSF Computer Science, Engineering, & Mathematics Scholarship, Fall 2006 - present
- Sacred Harp Publishing Company Scholarship, 2002-06
- Joe Beasley Memorial Scholarship Foundation Scholarship, 2003-06

- Harry Wendelstedt School For Umpires top 30 graduate, 2004

Computer Skills

- **IE related:** MINITAB, JMP, MS Access, MS Excel, Arena, AutoCAD, LINGO, Matlab, Solid Edge
- **General:** L^AT_EX, Adobe Illustrator, Adobe Photoshop, Macromedia Dreamweaver

Extracurricular Activities

- Sacred Harp Singer – A&E Cold Mountain Special, 2004 and performance on Academy Awards Show, 2004
- Graduate of Harry Wendelstedt School for Umpires, 2004
- Student Tigers Unlimited (STUF), 2002-07
- Student Alumni Association (SAA), 2005-07
- Intramural sports at Auburn University & NC State University, 2002-08
- Capital City Umpires Association, 2008
- Alexander City Umpires Association, 2004-07 present
- Greater Huntsville Umpires Association, Spring 2002 - present
- Alabama Junior College Collegiate Umpires Association, 2002-03

References

Kenneth Murray

Director, Organizational Process Improvement
WakeMed Health & Hospitals
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Steve Jackson

Associate Director & Research Assistant Professor
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JT. Black

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