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Industrial and Management Systems Engineering Department

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## **EDUCATION**

2006, Ph.D., Industrial Engineering and Management Sciences, Northwestern University, USA  
2002, M.S., Industrial Engineering and Management Sciences, Northwestern University, USA  
2000, B.S., Electronic Engineering, Tsinghua University, China

## **WORK EXPERIENCE**

2006–Present                      Assistant Professor  
Industrial and Management Systems Engineering Department  
West Virginia University, Morgantown, WV

## **RESEARCH**

### **Research Interest**

- Applied statistics
- Computer simulation of stochastic systems

### **Grants Awarded**

- “Transient analysis of manufacturing systems: a simulation-based transfer function modeling approach for responsive production planning,” \$196,815, NSF, 2011-2014.  
Role: PI; Responsibility: 100%.
- “Efficient design of biological experiments for dose-response modeling in nanomaterial toxicology studies,” \$196,815, NSF, 2011-2014.  
Role: PI; Responsibility: 100%.
- “Bioactivity of engineered fiber-shaped nanomaterials,” \$900,000, NIH, 2009-2012 (PI: A. Holian and N. Wu).  
Role: Co-PI; Share: \$191,051.
- “Sensitivity analysis of reliability for structure-based software via simulation,” \$49,900, the NASA Office of Safety and Mission Assurance (OSMA) Software Assurance Research Program (SARP) managed through the NASA Independent Verification and Validation (IV&V) Facility, Fairmont, West Virginia, 2006-2007.  
Role: PI; Responsibility: 100%.

## Publications

\*WVU students under supervision of Dr. Feng Yang

### Working Paper

- J. Liu\* and F. Yang, 2011, "Transient analysis of general queueing systems via simulation-based transfer function modeling," submitted to *the ACM Transactions on Modeling and Computer Simulation (TOMACS)*.
- C. Xiang\*, F. Yang, M. Li, M. Jaraiedi and N. Wu, 2011, "Experimental and statistical analysis of environmental fate of surface-functionalized titanium dioxide nanoparticles in aquatic system," submitted to *Environmental Science & Technology*.
- M. Li\*, F. Yang and J. W. Fowler, 2011, "Quoting manufacturing due dates via simulation-based statistical method," manuscript in preparation.
- F. Yang, Z. Geng\* and N. Wu, 2011, "An efficient statistical procedure for multivariate calibration of sensor arrays," manuscript in preparation.

### Journal Articles

- Z. Geng\*, F. Yang and N. Wu, 2011, "Optimum design of sensor arrays via simulation-based multivariate calibration," *Sensors & Actuators: B. Chemical* 156 (2): 854-862.
- J. Liu\*, F. Yang, H. Wan and J. W. Fowler, 2011, "Capacity planning through queueing analysis and simulation-based statistical methods: a case study for semiconductor wafer fabs," *International Journal of Production Research* 49 (15): 4573-4591.
- F. Yang, J. Liu\*, B. L. Nelson, B. E. Ankenman and M. Tongarlak, 2011, "Metamodeling for cycle time-throughput-product mix surfaces using progressive model fitting," *Production Planning and Control* 22 (1): 50-68.
- F. Yang, 2010, "Neural network metamodeling for cycle-time based performance profiles in manufacturing," *European Journal of Operations Research* 205 (1): 172-185.
- F. Yang, B. E. Ankenman and B. L. Nelson, 2008, "Estimating Cycle Time Percentile Curves for Manufacturing Systems via Simulation," *INFORMS Journal on Computing* 20 (4): 628-643.
- F. Yang, B. E. Ankenman and B. L. Nelson, 2007, "Efficient generation of cycle time-throughput curves through simulation and metamodeling," *Naval Research Logistics* 54: 78-93.

### Book Chapter

- B. E. Ankenman, J. M. Bekki, J. W. Fowler, G. T. Mackulak, B. L. Nelson and F. Yang, "Simulation in production planning, an overview with emphasis on recent developments in cycle time estimation," Chapter 6 in *Planning in the Extended Enterprise: A State of the Art Handbook*, eds. By K. G. Kempf, P. Keskinocak, and R. Uzsoy, Springer.

### Refereed Proceedings

- J. Liu\*, Chihui Li\*, F. Yang, H. Wan and Reha Uzsoy, 2011, "Production planning for semiconductor manufacturing via simulation optimization," *Proceedings of the 2011 Winter Simulation Conference*, accepted.
- F. Yang and J. Liu\*, 2010, "Transient Analysis of General Queueing Systems via Simulation-

Based Transfer Function Modeling," *Proceedings of the 2010 Winter Simulation Conference*, 1110-1122.

- J. Liu\* and F. Yang, 2008, "Evaluating the transient behavior of queueing systems via simulation and transfer function modeling," *Proceedings of the 2008 Winter Simulation Conference*, 516-524.
- J. Xu\*, F. Yang and H. Wan, 2007, "Controlled sequential bifurcation for software reliability study," *Proceedings of the 2007 Winter Simulation Conference*, 281-288.
- F. Yang, J. Liu\*, M. Tongarlak, B. E. Ankenman and B. L. Nelson, 2007, "Metamodeling for cycle time-throughput-product mix surfaces using progressive model fitting," *Proceedings of the 2007 Winter Simulation Conference*, 322-330.
- F. Yang, B. E. Ankenman and B. L. Nelson, 2005, "Estimation of percentiles of cycle time in manufacturing simulation," *Proceedings of the 2005 Winter Simulation Conference*, 475-484.
- R. T. Johnson, F. Yang, B. E. Ankenman and B. L. Nelson, 2004, "Nonlinear regression fits for simulated cycle time vs. throughput curves for semiconductor manufacturing," *Proceedings of the 2004 Winter Simulation Conference*, 1951-1955.

#### Conference Presentations

- "Quoting manufacturing due dates via simulation-based statistical methods," Presentation, *INFORMS (Institute for Operations Research and the Management Sciences) Annual Meeting*, Charlotte, NC, Nov. 13-16, 2011.
- "Transient Analysis of General Queueing Systems via Simulation-Based Transfer Function Modeling," Presentation, *Winter Simulation Conference*, Baltimore, MD, Dec. 5-8, 2010.
- "Multivariate Modeling for Calibration of a Gas Sensor Array," Presentation, *INFORMS (Institute for Operations Research and the Management Sciences) Annual Meeting*, San Diego, CA, Oct. 11-14, 2009.
- "Evaluating the transient behavior of queueing systems via simulation and transfer function modeling," Presentation, *INFORMS (Institute for Operations Research and the Management Sciences) Annual Meeting*, Washington, DC, Oct. 12-15, 2008.
- "Controlled sequential bifurcation for software reliability study," Presentation, *Winter Simulation Conference*, Washington, DC, Dec. 9-12, 2007.
- "Metamodeling for cycle time-throughput-product mix surfaces using progressive model fitting," Presentation, *Winter Simulation Conference*, Washington, DC, Dec. 9-12, 2007.
- "Metamodeling for cycle time-throughput-product mix surfaces using progressive model fitting," Presentation, *INFORMS (Institute for Operations Research and the Management Sciences) Annual Meeting*, Seattle, WA, Nov. 4-7, 2007.
- "Multi-product cycle time and throughput evaluation via simulation on demand," Presentation, *INFORMS (Institute for Operations Research and the Management Sciences) Annual Meeting*, Pittsburgh, PA, Nov. 5-8, 2006.
- "Estimation of percentiles of cycle time in manufacturing simulation," Presentation, *Winter Simulation Conference*, Orlando, FL, Dec. 4-7, 2005.
- "Nonlinear regression fits for simulated cycle time vs. throughput curves for semiconductor manufacturing," Presentation, *Winter Simulation Conference*, Washington, DC, Dec. 7-10, 2004.

- “Efficient generation of cycle time-throughput (CT-TH) curves through simulation and metamodeling,” Presentation, *INFORMS Annual Conference*, Atlanta, GA, Oct. 17-22, 2003.

## **TEACHING**

- Discrete-event simulation (undergraduate)
- Stochastic Processes (graduate)
- Operations management (undergraduate)

## **PROFESSIONAL ACTIVITIES AND SERVICES**

### **Professional Affiliation**

- Member, Institute for Operations Research and Management Science (INFORMS), 2001-Present.
- Member, INFORMS Simulation Society, 2003- Present.

### **Professional Service**

- Reviewer for *IIE Transactions*, *American Statistician*, *European Journal of Operations Research*, *Journal of the Operational Research Society*, *Transactions on Modeling and Computer Simulation (TOMACS)*, *IEEE Transactions on Semiconductor Manufacturing*, *Computers & Industrial Engineering*, *Journal of Simulation*, *International Journal of Simulation and Process Modeling*, and *Sensors*.
- Judge, INFORMS QSR (Quality, Statistics, and Reliability) Best Student Paper, 2008
- Instructor, NSF funded “Engineers of Tomorrow” summer experience program for Appalachian area high school students, 2007-2008.