

Douglas L. McWilliams, PhD, CPIM

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Education

- Ph.D., North Carolina A&T State University, Industrial Engineering
- M.S., Mississippi State University, Industrial Engineering
- B.S., Jackson State University, Industrial Management

Teaching

- Business Statistics
- Maintenance Management
- Production Cost Control
- Systems Engineering Mgmt.
- Principles of Management
- Lean Manufacturing
- Quality Control
- Engineering Economics
- Discrete-Event Simulation
- Operations Management

Research

Modeling and analysis of complex production systems in the manufacturing and service sectors. Using operations research tools to solve inventory and scheduling related problems in the areas of product lifecycle management and supply chain management.

Professional Experience

- Assistant Professor of Technology Management, Division of Business and Industry, Mississippi State University, Meridian, MS, 8/2008 – present
- Assistant Professor of Industrial Technology, Department of Industrial Technology, Purdue University, West Lafayette, IN, 8/2004 – 7/2008
- Graduate Research Assistant, Department of Industrial Engineering, North Carolina A&T State University, Greensboro, NC, 6/2003 – 7/2004
- Graduate Instructor, Department of Industrial Engineering, North Carolina A&T State University, Greensboro, NC, 9/2002 – 5/2004
- Production Manager, Glass Bead Production Plant, Cataphote, Inc., Jackson, MS, 1/1998 – 12/1999
- Industrial Engineer, Building Wire and Power Cable Plant, Southwire Company, Starkville, MS, 6/1995–12/1997

Awards and Honors

- Chrysler Summer Faculty Internship (Summer 2007, Summer 2008)
- Certified in Production and Inventory Management (CPIM)
- Alpha Pi Mu National Industrial Engineering Honor Society

- Epsilon Pi Tau International Honor Society for Professions in Technology
- Registered Engineer-In-Training (Mississippi)

Scholarly Activities

Publications

- McWilliams, D. (2009). A dynamic load balancing approach to solve the parcel hub scheduling problem. *Computers and Industrial Engineering*, doi:10.1016/j.cie.2009.03.013.
- McWilliams, D. (2009). Managing lean DRC systems with demand uncertainty: An analytical approach. *International Journal of Advanced Manufacturing Technology*, doi:10.1007/s00170-009-2030-y.
- Badawi, I., McWilliams, D., & Tetteh, E. (2009). Enhancing lean manufacturing learning experience through hands-on simulation exercises. Submitted to the *Simulation and Gaming*.
- McWilliams, D. (2009). Iterative improvement to solve the parcel hub scheduling problem. Submitted to the *Computers and Industrial Engineering*.
- McWilliams, D. (2009). A genetic based scheduling algorithm for the PHSP with unequal batch size inbound trailers. Submitted to the *International Journal of Industrial Engineering - Theory, Applications and Practice*.
- McWilliams, D. (2009). A beam search heuristics to solve the parcel hub scheduling problem. Submitted to the *Journal of Heuristics*.
- McWilliams, D. (2009). Fluid approximation to the performance modeling and analysis of transshipment terminals in the parcel delivery industry. Submitted to the *International Journal of Logistics*.
- McWilliams, D. (2008). Genetic-based scheduling to solve the parcel hub scheduling problem. *Computers and Industrial Engineering*, doi:10.1016/j.cie.2008.10.011.
- McWilliams, D. Stanfield, M., and Geiger, C. (2008). Minimizing the completion time of the transfer operations in a central parcel consolidation terminal with unequal-batch-size inbound trailers, *Computers and Industrial Engineering* 54 (4), 709-720.
- McWilliams, D. & Tetteh, E. (2008). Implementing a new assembly line in an existing facility: A lean manufacturing approach. *Proceedings of the 17th Annual Industrial Engineering Research Conference*, Vancouver, British Columbia, Canada, May 17-21, 2008.
- McWilliams, D. & Tetteh, E. (2008). Value-stream mapping to improve productivity in transmission case machining. *Proceedings of the 17th Annual Industrial Engineering Research Conference*, Vancouver, British Columbia, Canada, May 17-21, 2008.
- McWilliams, D. & Tetteh, E. (2008). Evaluation a reusable container program: A case study. *Proceedings of the 17th Annual Industrial*

Engineering Research Conference, Vancouver, British Columbia, Canada, May 17-21, 2008.

- Tetteh, E. & McWilliams, D. (2007). Doing business in Ghana: Feasibility analysis of Dell's direct model technology. *Business Journal for Entrepreneurs*, 2007 (4).
- McWilliams, D. & McLeod, A. (2005). Performance analysis of batch production and one-piece flow under demand uncertainty. *Proceedings of the 38th Annual Convention of the National Association of Industrial Technology*. St. Louis, Missouri, November 2005.
- McWilliams, D., Stanfield, P., & Geiger, C. (2005). The parcel hub scheduling problem: a simulation-based solution approach. *Computers and Industrial Engineering*, 49 (3), 393-412.
- McWilliams, D. & Stanfield, P. (2005). Improving the performance of transfer operations in parcel consolidation terminals. *Proceedings of the 12th Annual Conference on Industry, Engineering, and Management Systems*. Cocoa Beach, Florida, March 2005.
- McWilliams, D. & Stanfield, P. (2005). Simulation-based scheduling for parcel consolidation terminals: a comparison of iterative improvement and simulated annealing. *Proceedings of the 38th Annual Winter Simulation Conference*, Orlando, Florida, December 2005.
- Torres, P., Stephens, M.P., & McWilliams, D. (2005). Improving production performance through lean manufacturing techniques. *International Journal of Advanced Manufacturing Systems*, 8(1), 17-27.
- McWilliams, D. & Stanfield, P. (2004). A simulation optimization approach to solve the hub scheduling problem with unequal batch size trailers. *Proceedings of the 13th Annual Industrial Engineering Research Conference*, Houston, Texas, May 2004.
- McWilliams, D. & Stanfield, P. (2003). Minimizing makespan in a hub sortation operation. *Proceedings of the 10th Annual Conference on Industry, Engineering, and Management Systems*. Cocoa Beach, Florida, March 2003.
- McWilliams, D. & Stanfield, P. (2003). A framework for minimizing the completion time of a hub sortation operation. *Proceedings of the 12th Annual Industrial Engineering Research Conference*, Portland, Oregon, May 2003.
- Stanfield, P., McWilliams, D., Sarin, S., Barnes, E., & Lin, E. (2001). Object models of supply chains for optimization, simulation, and control. *Proceedings of the Eighth Annual Conference on Industry, Engineering, and Management Systems*, Cocoa Beach, Florida, March 2001.

Working Papers

- Tetteh, E., McWilliams, D., & Byrd, K. (2009). Human visual inspection of automotive paint finishes.

Professional affiliations

- Institute of Industrial Engineers (IIE)
- National Association of Industrial Technology (NAIT)
- The Institute for Operations Research and Management Science (INFORMS)
- American Production and Inventory Control Society (APICS)

Doctoral Students

- McLeod, Alister A.
Industrial Technology
Assessing Workers Knowledge of Lean Manufacturing Principles and Practices in Central Indiana (tentative)
May 2008 (anticipated)
- Elbadawi, Isam A.
Industrial Technology
Curriculum Development for Digital Manufacturing (tentative)
May 2009 (anticipated)

Master's Degree Students

- Shorter, Rachel B
Industrial Technology
A Feasibility Study for Implementing a Reusable Container Program
May 2007
- Dix, Steven
Industrial Technology
Delivering Benefits through Six Sigma: A Case Study on Turbine Spacers
May 2007
- Ballard, Brandon
Industrial Technology
Implementing a New Assembly Line in an Existing Facility through the use of Lean Manufacturing Tools
May 2007
- Olsen, James
Industrial Technology
Streamlining and Integrating Assumption Data
May 2007
- Harney, James
Industrial Technology
Improving Annual Physical Inventory and Exploring Different Inventory Methods
May 2007

- ElBadawi, Isam
Industrial Technology
Enhancing Lean Manufacturing Teaching with Hands-on Exercises
Dec 2006
- Mardanzai, Mustafa
Industrial Technology
A Pilot Study of the Impact of Visual Control in Component Downtime
May 2006
- Good, Joseph
Industrial Technology
Process Flow Mapping in Case Machining
May 2006