

MARK A. LAWLEY

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EDUCATION

PhD in Mechanical Engineering University of Illinois at Urbana-Champaign Dissertation: Structural Analysis and Control of Flexible Manufacturing Systems Advisor: Professor Placid Ferreira	1995
MS in Manufacturing Systems Engineering Auburn University Thesis: Robotic Mobility in Cellular Manufacturing Advisor: Professor JT. Black	1988
BS in Industrial Engineering Tennessee Technological University	1982

PROFESSIONAL POSITIONS

Head, Department of Industrial and Systems Engineering Holder of the Sugar and Mike Barnes Department Head Chair Texas A&M University	2016-Present
Deputy Director, Center for Remote Healthcare Technologies & Systems Texas Engineering Experiment Station, Texas A&M University	2015-Present
Professor, Texas A&M University Holder of the TEES Research Professorship Department of Industrial and Systems Engineering Department of Biomedical Engineering Department of Epidemiology and Biostatistics	2014 -Present
Professor, Purdue University Weldon School of Biomedical Engineering	2010 -2014
Provost Fellow for Engagement, Purdue University Purdue Office of Engagement	2012 -2013
Associate Professor, Purdue University Weldon School of Biomedical Engineering	2007 - 2010
Associate Professor, Purdue University School of Industrial Engineering	2003 -2007
Assistant Professor, Purdue University School of Industrial Engineering	1997 - 2003

Assistant Professor, University of Alabama, Tuscaloosa Department of Industrial Engineering	1995 – 1997
Fellow, University of Illinois at Urbana-Champaign Department of Energy Pre-Doctoral Fellowship in Integrated Manufacturing	1994 – 1995
Graduate Research Assistant University of Illinois at Urbana-Champaign Knowledge Based Engineering Systems Research Laboratory	1991 – 1994
Manufacturing Systems Engineer Bevill Center for Advanced Manufacturing Technology, Gadsden, AL	1988 – 1991
Graduate Research Assistant, Department of Industrial Engineering, Auburn University, Auburn, AL	1986 – 1988
Manufacturing Engineer Emerson Electric Company, Chromalox Division, Vernon, AL	1983 – 1986
Westinghouse Electric Corporation Graduate Placement Program Manufacturing Engineer and Supervisor, Aerospace Electrical Division, Lima, OH Industrial Engineer, Low Voltage Division, London, KY Quality Assurance Engineer, Defense Division, Baltimore, MD	1982 – 1983

DEPARTMENT HEAD LEADERSHIP

Leadership Training

Executive Certificate in Management and Leadership, Sloan School of Management, Massachusetts Institute of Technology, 2018. Courses taken include:

1. Creating the High Velocity Organization
2. Implementing Industry 4.0: Leading Change in Manufacturing and Operations
3. Cybersecurity Leadership for Non-Technical Executives
4. Building, Leading, and Sustaining the Innovative Organization

Leadership Activities

Faculty Hiring and Development

- Recruited and hired 15 new faculty members including:
 - Three full professors with tenure
 - Two associate professors with tenure
 - Seven assistant professors on tenure track
 - Three full time professors of practice
 - First associate head for external education in the College of Engineering
 - One NASA astronaut as professor of practice
 - Four new female faculty members
- Negotiated four spousal hiring opportunities
- Developed three successful promotion cases: two assistant to associate and one associate to full

Program Assessment and Planning

- Led development of departmental SWOT analysis (Strength, Weaknesses, Opportunities, Threats)

- Led development of departmental strategic plan focused on (1) faculty mentoring, (2) research productivity, (3) educational program development, (4) department visibility, and (5) external education opportunities

- Hosted successful ABET visit in 2016

Resource Acquisition and Management

- Acquired over 3000 square feet of additional laboratory space for departmental research
- Oversaw the development of state of the art advanced manufacturing laboratories
- Raised funding to upgrade video/audio technology in undergraduate classrooms

Diversity

- Hired four female faculty members
- Appointed two female academic professional faculty to the Texas A&M graduate faculty
- Granted courtesy appointment to female faculty from Department of Engineering Technology
- Recruited the President of the TAMU NSBE student chapter to Industrial Systems Engineering
- Significantly increased diversity representation on Industrial Advisory Board

International Efforts

- Led departmental interaction with Texas A&M Qatar leading to a successful workshop in Doha and a \$1M research grant from the Qatar National Research Foundation

External Engagement

- Visited former students and donors with departmental development officer
- Held former student information sessions in Dallas, Houston, San Antonio areas
- Visited Texas high schools and community colleges to recruit undergraduate students
- Managed departmental industrial advisory committee
- Initiated industrial advisory committee undergraduate scholarship program

College and University Activities

- Led successful head search for department of biomedical engineering
- Served on the Dean's Department Head Council
- Served on the Provost's Department Head Steering Committee

LICENSES and REGISTRATIONS

Registered Professional Engineer in the State of Texas

Registered Professional Engineer in the State of Alabama

Certified Manufacturing Engineer in Robotics, Society of Manufacturing Engineers

Certified in Material Requirements Planning and Just-In-Time, American Production
and Inventory Control Society

HONORS AND AWARDS

Sugar and Mike Barnes Department Head Chair in Industrial and Systems Engineering, 2017

Judge for Edelman Award, Institute for Operations Research and the Management Sciences, 2017

Faculty Exceptional Service Award (ISEN), 2016

Fellow, Institute of Industrial Engineers (IIE), 2015

TEES Research Endowment, Texas A&M University, 2014

Chancellor's One Health Designation, Texas A&M University, 2014

Provost Fellow for Engagement, Purdue University, 2012

Institute of Industrial Engineers (IIE) Transactions, Best Applied Paper Award, 2011

Institute of Industrial Engineers (IIE) Transactions, Best Applied Paper Award, 2008

Purdue University "Seeds for Success" Award, 2006, 2007 (for funded grants exceeding \$1M)

James H. Greene Graduate Educator Award, School of IE, Purdue University, 2006

Regenstrief Faculty Scholar, 2005

Kayamori Best Paper Award, Institute of Electrical and Electronics Engineers (IEEE) International
Conference on Robotics and Automation, 2002

Best Paper Nomination, Artificial Neural Networks in Engineering (ANNIE) Conference, 2002

Commendation from the U.S. Postal Service, 2002
Best Theoretical Paper, Japan-USA Symposium on Flexible Automation, 1998
Outstanding Industrial Engineering Faculty Member, University of Alabama, 1997
Sigma Xi, Research Society, 1995
Phi Kappa Phi, General Academic Honors, 1995
U.S. Department of Energy Integrated Manufacturing Fellowship, 1994
Award of Excellence, U.S. Army Construction Engineering Research Laboratory, 1994
Outstanding Industrial Engineering Senior, Tennessee Technological University, 1982
Alpha Pi Mu, Industrial Engineering Honors, 1981
Tau Beta Pi, Engineering Honors, 1981
Kappa Mu Epsilon, Mathematics Honors, 1980

MEMBERSHIPS IN PROFESSIONAL SOCIETIES

Institute of Industrial and Systems Engineers, IISE
Institute of Electrical and Electronics Engineers, IEEE
Institute for Operations Research and the Management Sciences, INFORMS
Society of Industrial and Applied Mathematics, SIAM

TAMU COMMITTEE PARTICIPATION

Provost's Department Head Steering Committee
Dean's Department Head Counsel
BMEN Head Search Committee, Chair
ISEN Faculty Search Committee
ISEN ABET Committee
ISEN Senior Design Committee, Chair
ISEN Executive Committee
ISEN Awards Committee
ISEN Post-Tenure Review Committee
ISEN Preliminary Exam Review Committee
Center for Remote Healthcare Technologies & Systems, Faculty Search Committee
Global Pandemic Policy Advisory Committee, Scowcroft Institute of International Affairs, Bush School of Government

PURDUE COMMITTEE PARTICIPATION

Faculty Affairs Committee, 2013-2014
Global Policy Research Institute Academy, 2013-2014
University Senate, 2011-2013
BME Primary Committee, 2007-2013
BME PhD Qualifying Procedures (PQP) committee, 2007-2012
Chair of BME Graduate Committee 2008-2011
Graduate Faculty Council, 2008-2011
BME Graduate Committee, 2007- 2011
Healthcare Engineering Signature Area Committee, 2006
Pharmaceutical Engineering Search Committee, 2006
RCHE Faculty Search Committee, 2005-2006
Junior Faculty Council, 2004-2006
Industrial Engineering Head Search Committee, 2004-2005
Committee for Faculty Relations, 2003-2005
Industrial Engineering Computer Committee 2003-2004
Industrial Engineering Undergraduate Curriculum Committee, 1998, 1999, 2000, 2001, 2002
Industrial Engineering Student Advisory Committee, 1998, 1999, 2000

JOURNAL ACTIVITIES**Department Editor**

IIEE Transactions
IIEE Transactions on Healthcare Engineering

Associate Editor

IIEE Transactions
IEEE Transactions on Automation Science and Engineering
International Journal of Production Research
SME Journal of Manufacturing Systems
SME Journal of Manufacturing Processes
International Journal of Production Research, Guest Editor, Special Issue on Operations Research in Healthcare, 2015

Referee

IIEE Transactions
Health Care Management Science
IIEE Transactions on Healthcare Engineering
IEEE Transactions on Robotics and Automation
IEEE Transactions on Man, Systems, and Cybernetics
IEEE Transactions on Automation Science and Engineering
IEEE Transactions on Automatic Control
International Journal of Flexible Manufacturing Systems
International Journal of Production Research
Journal of Discrete Event Dynamic Systems
Journal of Manufacturing Science and Engineering
Journal of Manufacturing Systems
Manufacturing and Service Operations
Production and Operations Management

TEACHING (LAST EIGHT YEARS)

Course	Course Title	Term	Enrollment	Resp.
ISEN 459, 460	Capstone Senior Design	Fall 2014-15	65	100%
		Spring 2015-16	88	
		Fall 2016	105	
BME 495	Healthcare Engineering: Queuing and Scheduling	Fall 2013	26	100%
		Fall 2012	24	
MGMT 590	Healthcare Policy and Operations	Spring 2012	10	100%
BME 595	Simulating Healthcare Systems	Spring 2012	10	100%
BME 695B	Critical Literature Survey	Fall 2011	6	100%

BME 495	Healthcare Engineering: Queuing and Scheduling	Fall 2011	15	100%
MGMT 590	Healthcare Policy and Operations	Spring 2011	13	100%
BME 695	Critical Literature Survey	Fall 2010	5	100%
BME 695	Optimal Control in Healthcare Systems	Spring 2010	8	100%
IE 580	Systems Simulation	Fall 2009	41	100%
BME 595	Healthcare Engineering	Fall 2009	15	100%
BME 405	Senior Design	Spring 2009	25	100%
IE 580	Systems Simulation	Fall 2008	40	100%
BME 595	Modeling Hospital Operations	Spring 2008	16	100%
BME 695	Critical Literature Survey: Optimal Fistula Access for Dialysis Patients	Fall 2007	8	100%
BME 595	Healthcare Engineering	Fall 2007	29	100%
IE 580	Systems Simulation	Fall 2006	50	100%
IE 431	IE Senior Design	Fall 2006	53	100%
IE 590	Analysis of Manufacturing Systems	Sum. 2006	30	100%

PhD and MS Thesis Committees Chaired

NAME	DEGREE	GRAD. DATE	CO-CHAIR	THESIS TITLE
Sulki Park	PhD	2020	H. Kum	Post-Acute Care
Maryam Khatami	PhD	2019		Stochastic Optimization of Inpatient Discharge Processes
Ashkan Hassani	PhD	2019		Capacity Planning for Post-Acute and Long Term Care Services
Ineen Sultana	PhD	2019		Modeling Referral Patterns to Post-Acute Care
Julie Hammett	PhD	2019		Remote Healthcare
Josef Zapletal	PhD	2020		Multi-modeling of Infectious Disease Vectors
Iqra Ejaz	PhD	2018		Optimal Condition-based Maintenance of Degrading Servers

Maria Correa Health Systems Engineer, Dell Medical School UT Austin	MS	2017		Clinical Inertia and Population Health for Diabetes Care: An Agent Based Model
Karla Gonzalez	ESM	2017		NA
Ramez Ayoub, Business Strategy Consultant, Accenture	MSBME	2013		Prediction Tool for Hospital Readmissions
Yan Li Assistant Professor of Public Health, Icahn School of Medicine at Mount Sinai	PhD, BME	2014	Nan Kong	Optimizing Patient Access in Healthcare
Stephen Steidle, Senior Consulting Analyst, Cigna	MSIE	2013	Seokcheon Lee	Sequential Scheduling with Reentrant
Ji Lin, Data Scientist at Yiguo	PhD, BME	2012		Optimal Sequential Clinical Scheduling and Approximate Dynamic Programming
Manan Javeri Head of Expansion, UberEATS	MSIE	2011	Hong Wan	Rotation Planning and Scheduling for Medical Resident Education
Sara Shashaani Assistant Professor, Industrial Engineering, North Carolina State University	MSIE	2011	Hong Wan	Chemotherapy Patient Scheduling with Uncertainty
Santanu Chakraborty Senior Director, Advertising Effectiveness at NBCUniversal Media	PhD, IE	2010	Hong Wan	Scheduling and Maintenance Problems in Clinical Healthcare Delivery
Feng Lin Director, Health Economics & Outcomes Research at Daiichi Sankyo	PhD, BME	2010		Optimal Control Problems in Public Health
Krishna Jayakumar Senior Engagement Manager, ThreatMetrix	MSIE	2010		Petri Net Based Simulation Modeling to Analyze Emergency Department Diversion
Renata Konrad Associate Professor of Operations and Industrial Engineering,	PhD, IE	2009	Y. Yih	Modeling Inpatient Flow from Hospital Information Systems

Worcester Polytechnic Institute				
PoChing DeLaurentis Research Scientist, Purdue University	PhD, IE	2009	J.P. Richard	Hospital Stockpiling Problems for Influenza Pandemic
Narayanan Varadarajan Director Commercial Limit Manager, American Express	MSIE	2008		Emergency Department Analysis Using Petri Nets
Shengyong Wang Professor of Mechanical Engineering, University of Akron	PhD, IE	2006		Robust Supervision and Condition Based Control for Single-Unit Resource Allocation
Charlie Spry	MSIE	2006		Analysis of Surgical Instrument Processing
Jonathan Turner Director of Perioperative Services at University Health Care System	MSIE	2006		Configuring Damaged Water Systems for Optimal Distribution with Transport Costs
Guruprasad Sankaranarayanan VP Operations and Innovation - OYO Rooms	MSIE	2006		Predicting Patient No-Show for Medical Appointments
Jianhong Qiao Manager, Supply Chain Analytics and Operations Research at Bain & Company	PhD, IE	2005	J.P. Richard	Vulnerability Assessment and Mitigation for Large-Scale Water Infrastructure
Song Foh Chew Professor of Mathematics, Southern Illinois University	PhD, IE	2005		Liveness Enforcing Supervision for Automated Systems with Process Synchronization
Kristy Crist Senior Director, Program & Change Management at TIAA	MSIE	2005	Reha Uzsoy	Scheduling Production and Engineering Lots in Semiconductor Wafer Fabs

Widodo Sulistyono Business Transformation Global Program Manager, Dell	PhD, IE	2004		Supervisory Control and Operational Robustness for Complex Resource Allocation Systems
Janet Bensman Engineer at Honda of America	MSIE	2004		The Effects of Flexibility on Supply Chain Vulnerability
Jong-hyun Ryu	MSIE	2004		A Study of the Interactions Between the Shifting Bottleneck Scheduling and the Resource Order Deadlock Avoidance Policy in a Semi-Conductor Reentrant Flow-Line
Nagi Gebraeel Professor of Industrial and Systems Engineering, Georgia Institute of Technology	PhD, IE	2003		Vibro-Acoustical Condition Monitoring of Rolling Element Thrust Bearings for Maintenance Management
Vijay Parmeshwaran Senior Principal, IQVIA	MSIE	2003		Neural Net Models for Bearing Condition Monitoring
Asima Mishra Team Lead, iPhone Product Team, Apple	MSIE	2003		Evaluating the Performance of Cross-Docks: A Data Envelopment Analysis Based Approach
Jill Baumann	MSIE	2002	Jennifer Ryan	Performance Analysis of Cross-docking Centers
Rong Li Assistant Professor of at Management, Syracuse University	MSIE	2001	Jennifer Ryan	Decision Models for Large Scale Condition Monitoring
Arunabh Barua	MSIE	2001	Reha Uzsoy	An Investigation of the Interaction between Scheduling and Structural Control Policies in Automated Manufacturing
Sanjeev Nanda Analytics Leader at BMO Financial Group	MIE UA	1998		Efficiency Analysis of Deadlock Avoidance Policies for Flexible Manufacturing Systems
Nagi Gebraeel	MSIE	1998		Deadlock Avoidance in Real-Time FMS Tool Allocation
Chris Mullinax Mathematics Teacher, Porter- Gaud School, Charlston	MIE UA	1998		Optimal Patient Assignments in Large Scale Intensive Care Nurseries

Post-Doctoral Research Fellows

NAME	DATE	TOPIC	CURRENT POSITION
Michelle Alvarado	January 2015- July 2017	Healthcare Delivery	Assistant Professor, University of Florida
Amber Elkins	January 2016- present	Healthcare Delivery	Research Scientist, TAMU School of Veterinary Medicine
Yan Li	September 2014- May 2015	Healthcare Delivery	Assistant Professor, Icahn School of Medicine at Mount Sinai Medical Hospital
Bo Zeng	January 2007 – February 2008	Healthcare Delivery	Associate Professor, Department of Industrial Engineering, University of Pittsburgh
Ayten Turkcan	January 2004- December 2005	Railroad Transportation	Senior Operations Research Scientist, New York City Fire Department

GRANT ACTIVITY

AGENCY NAME TITLE OF GRANT	FUNDING DURATION	TOTAL AWARD	ROLE and AMOUNT PERSONALLY RESPONSIBLE	CO- INVESTIGATOR
National Institutes of Health <i>Southwest Consortium for Technology Innovation in Pediatrics (SW-CTIP)</i>	5 years 9/2018 – 8/2023	\$2M	Co-PI	B. Haridas, PI G. Cote, Co-PI D. Maitland, Co-PI J. Criscione, Co-PI S. Biswas, Co-PI R. Gutierrez-Osuna, Co-PI
Kleberg Foundation <i>UNI- Transformative and Affordable Medical Technologies and Systems to Improve Diabetes Health</i>	4 years 1/2018- 12/2021	\$958K	Co-PI \$200K	G. Cote, PI M. Grunlan, Co-PI R. Gutierrez-Osuna, Co-PI F. Sasangohar, Co- PI
National Science Foundation, Engineering Research Center: <i>Precise Advanced Technologies and Health Systems for Underserved Populations (PATHS- UP)</i>	5 years with possible 5 year renewal	\$20M for first 5 years	Co-PI \$200K in first two years for stakeholder development team	G. Cote PI-TAMU O. Aydogan PI- UCLA A. Sabharwal, PI- Rice J. Ramella-Roman, PI-FIU

Qatar National Research Foundation: <i>Smart, Secure, Non-invasive Wearable System for Proactive Detection of Hypoglycemia</i>	3 years 9/2017- 8/2020	\$700K with \$100K TEES matching	PI TAMU- College Station	K. Qaraqe PI TAMU-Q
American Heart Association, <i>National Implementation and Dissemination for Chronic Disease Prevention</i>	1 year 10/2016- 9/2017	\$267K	Co-PI	W. Garney, PI K. Garcia, Co-PI
TEES Seed Grant <i>Optimizing Water Distribution Networks in the Face of Uncertain Events</i>	1 year 2017	\$50K	Co-PI	L. Ntaimo PI A. Mostafavidarani, Co-PI
Centers for Disease Control and Prevention “Western Gulf Coast Center of Excellence for Vector-Borne Diseases” Subproject: <i>Predictive models for the spread of mosquito-borne diseases in temperate climates</i> University of Texas Medical Branch at Galveston	5 years 1/2017- 12/2021	\$10M \$520K for subproject	Co-PI \$125K	B. Hur, PI M. Erraguntla, Co- PI
Defense Health Program in the U.S. Department of Defense - Army SBIR Phase II: <i>Data Integration and Predictive Analysis System (IPAS) For Prediction, Analysis, and Response Management of Infectious Diseases</i>	2 years	\$1M	Co-PI \$80,000	M. Erraguntla, PI Knowledge-Based Systems, Inc.
Veterans Health Services <i>Supply Chain Management</i>	11/2015 02/2017	\$259,834	PI	NA
Patient-Centered Outcomes Research Institute (PCORI) Tier I Pipeline Award Program	7 months (5/1/15 - 2/1/16)	\$15,000	PI	
National Science Foundation/ <i>Collaborative Research: Optimal Inpatient Discharge Planning with Uncertainty</i>	3 years (09/01/14 - 08/31/17)	\$479,000	co-PI, \$120,000	N. Kong, Purdue P. Parikh, Wright State
Indiana Hospital Association, Purdue Healthcare Advisors / “A Decision Support System for Estimating the Impact of Discharge Interventions on	16 months (09/01/12 - 12/31/13)	\$130,000	PI - \$130,000	NA

Hospital Readmission Rates and In-patient Financial Flows”				
Regenstrief Center for Healthcare Engineering: “Proactive Scheduling/Planning for Chronic Care”	1 year (8/1/11 – 7/31/13)	\$120,000	PI, \$120,000	L. Sands
National Institutes for Health STTR Phase 1 with Advanced Process Combinatorics: “Optimizing Operating Room Efficiency”	1 year (8/1/10 – 7/31/11)	\$120,000	co-PI, \$30,000	B. Doebbeling
Centers for Disease Control (CDC) / Indiana Department of Health “Degradation of Healthcare Services in Pandemic Influenza”	1 year (10/01/08-09/30/09)	\$523,000	co-PI, \$120,000	M. A. Sloan
Regenstrief Center for Healthcare Engineering: “Optimal Long Term Care Resource Allocation for Older Adults in Medicaid”	1 year (05/01/08 – 04/30/09)	\$40,000	co-PI, \$8,000	N. Kong, L. Sands, J. Thomas
National Science Foundation/ “Outpatient Clinical Scheduling: Theory and Implementation”	3 years (06/01/07 – 05/31/10)	\$459,000	PI, \$154,000	L. Sands, K. Muthuraman, D. Willis
Regenstrief Foundation/ “Outpatient Clinical Scheduling: Theory and Implementation”	2 years (08/15/07 – 08/15/09)	\$395,000	PI, \$395,000	N/A
Indiana State Department of Health/ “Feasibility Analysis for Alternate Care Site Design for Pandemic Events”	1 year (09/01/06 – 09/01/07)	\$240,000	PI, \$60,000	D. McKinnis, D. Abraham, G. Avery
Indiana Department of Health/ “GAP Analysis for Indiana Health Districts Pandemic Influenza Plans”	5 months (05/01/06 – 09/30/06)	\$215,000	co-PI, \$107,500	D. McKinnis
Ascension Health/ “Travel Grant”	1 year 2006	\$3,500	PI, \$3,500	N/A
Indiana University Medical Group, Kenya Program/ “Nutrition Management System for AMPATH”	1 year (01/01/06 – 12/31/06)	\$90,000	co-PI, \$45,000	Y. Yih

Regenstrief Center for Healthcare Engineering: "Blueprint for Effective Patient Flow"	1 year (05/01/06 – 05/31/07)	\$83,000	PI, \$30,000	R. Rardin, Y. Yih
Regenstrief Center for Healthcare Engineering: "Streamlining IHIE Implementation at St. Vincent Hospitals: Sabbatical Leave"	10 months (08/01/05 – 05/31/06)	\$27,000	PI, \$27,000	N/A
Regenstrief Center for Healthcare Engineering: "Streamlining IHIE Implementation at St. Vincent Hospitals"	1 year (08/01/05 – 08/31/06)	\$25,000	PI, \$25,000	N/A
Regenstrief Center for Healthcare Engineering: "Condition Based Clinic Scheduling for Chronically Ill Patients"	16 months (01/01/05 – 05/31/06)	\$38,000	PI \$19,000	Y. Yih
Regenstrief Foundation / "The Regenstrief Institute for Healthcare Engineering: Applying the Principles of Engineering and Management for the Improvement of Healthcare"	3 years (01/01/05 – 12/31/07)	\$3,000,000 (Center Startup)	co-PI, \$273,096	M. Jischke, J. Pekny, W. Cleveland, H. Moskowitz, L. Sands, S. Witz, et al.
PRF / "Vulnerability Assessment for Water Infrastructure Systems against Intentional Attacks"	2 years (08/01/04 – 07/31/06)	\$48,000	PI, \$24,000	J.P. Richard
Union Pacific Railroad Company/"Rock Train Scheduling Methods for Union Pacific"	9 months (04/01/04 – 12/31/04)	\$50,000	PI, \$50,000	A. Turkcan
Central Indiana Corporate Partnership/ "Transportation, Distribution and Logistics: A Strategic Opportunity for Indiana and Purdue"	1 year (07/01/03 – 07/31/04)	\$285,000	co-PI, \$22,000	R. Uzsoy, F. Mannering, L. Schwarz, E. Schmidt, D. Bullock, V. Despande, C. Clifton, A. Elmagarmid, R. Eberts, J. Pekny, E. Howell, R. Rardin, J. Schneider
General Motors Research and Development/ "Development of a Statistical Methodology for Performance Evaluation of Crossdocking Centers"	18 months (06/01/01 – 12/31/02)	\$95,000	PI, \$42,500	J. Ryan

National Science Foundation/ "PRISM Reunion and Symposium on Integration, Networking, and the Next Decade"	1 year (01/01/01 – 12/31/02)	\$5,000	co-PI, \$1,600	S. Nof, R.Eberts
Purdue Research Foundation Grant / "Scheduling Operating Rooms"	2 years (01/01/01 – 12/31/02)	\$26,000	co-PI, \$13,000	J. Ryan
National Science Foundation GOALI / "Implementing Global Schedules in Automated Facilities"	3 years (10/01/00 – 9/30/03)	\$569,000	co-PI, \$189,000	R. Uzsoy, S. Mohan, H. Aytug
Saigh Foundation/ "Robust Control Models for Reducing Software Costs in Automated Manufacturing Systems"	1 year (05/01/99 – 4/30/00)	\$25,000	PI, \$25,000	NA
Purdue Research Foundation Grant / "Deadlock Free Resource Allocation in Automated Manufacturing Systems"	2 years (09/01/98 – 12/31/00)	\$24,000	PI, \$24,000	NA
Purdue Research Foundation 1998 Summer Faculty Grant/ "Real Time Resource Allocation in Automated Manufacturing"	2 months (05/01/98 – 06/30/98)	\$5,000	PI, \$5,000	NA
National Science Foundation International Travel Grant/ "Travel to 1998 International Conference on Robotics and Automation, Leuven, Belgium"	1 month (05/01/98 – 05/31/98)	\$500	PI, \$500	NA
Uniroyal-Goodrich, Tuscaloosa, AL/ "Uniroyal-Goodrich Undergraduate Summer Internship Program"	4 months (05/01/96 – 08/31/96)	\$30,000	PI, \$30,000	NA
University of Alabama Research Grants Committee/ "Deadlock- Free AGV Management for Flexible Manufacturing Systems"	1 month (05/01/96 – 05/31/96)	\$4,000	PI, \$4,000	NA
Brown and Sharpe Mfg., Co., North Kingstown, RI/"Metrology Equipment Grant"	1 year (05/01/96 – 05/31/96)	\$75,000	co-PI, \$10,000	J. Cuttino, G. Ferguson, J. Gershenson, J. Matson

PUBLICATIONS

Refereed Journal Publications¹

1. Zapletal, J., Gupta, H., Erraguntla, M., Adelman, Z., Myles, K., Lawley, M. "Predicting Aquatic Development and Mortality Rates of *Aedes Aegypti*", *PLOS ONE*, 1st submission.
2. Sultana, I., Erraguntla, M., Kum, H., Delen, D., Lawley, M. "Post-Acute Care Referral: A Cohort Study of Patients with Coronary Artery Bypass Graft or Valve Replacement" *BMC Medical Informatics and Decision Making*, 1st submission.
3. Hosseinian, R., Mehta, R., Erraguntla, M., Lawley, M. "Static and Dynamic Work Activity Classification from a Single Accelerometer: Implications for Ergonomic Assessment of Manual Handling Tasks" *IISE Transactions on Occupational Ergonomics and Human Factors*, 1st revision.
4. Ejaz, I., Alvarado, M., Gautam, N., Gebrael, N., Lawley, M. "A Condition-based Maintenance for Queues with Degrading Servers", *IEEE Transactions on Automation Science and Engineering*, 1st revision.
5. Sultana, I., Erraguntla, M., Kum, H., Delen, D., Lawley, M. "Associations between Hospital Readmission and Length-of-Stay and Post-Acute Care following Coronary Artery Bypass Graft or Valve Replacement" *Health Informatics Journal*, 1st revision.
6. Khatami, M., Alvarado, M., Kong, N., Pratik Parikh, Lawley, M. "Optimal Discharge Planning Under Uncertainty" *Manufacturing and Service Operations Management*, 1st revision.
7. Correa, M., Li, Y., Kum, H., Lawley, M. "Assessing the Effect of Clinical Inertia on Diabetes Outcomes: A Modeling Approach" *Journal of General Internal Medicine*, in-press.
8. Zapletal, J., Erraguntla, M., Adelman, Z., Myles, K., Lawley, M. "Impacts of Diurnal Temperature and Larval Density on Aquatic Development of *Aedes Aegypti*" *PLOS ONE*, 13(3): e0194025.
9. Rodriguez-Paras, C., Tippey, K., Brown, E., Sasangohar, F., Creech, S., Kum, H., Lawley, M., Benzer, J. "Investigating Post-Traumatic Stress Disorder (PTSD) Mobile Health (mHealth) Applications Usage and Validation: An App Investigation and Scoping Literature Review." *Journal of Medical Internet Research*, 5 (10), 2017.
10. Gorman, D., Elkins, E., Lawley, M. "A Systems Approach to Understanding and Improving Research Integrity." *Science and Engineering Ethics*, 1-19, 2017.
11. Erraguntla, M., Zapletal, J., Lawley, M. "Framework for Infectious Disease Analysis (FIDA): a Comprehensive and Integrative Multi-modeling Approach to Disease Prediction and Management," *Health Informatics Journal*, pp. 1-18, 2017.
12. Gao, J., Liu, N., Lawley, M., Hu, X. "An Interpretable Classification Framework for Information Extraction from Online Healthcare Forums" *Journal of Healthcare Engineering*, Article ID 2460174, 12 pages, vol. 2017. doi:10.1155/2017/2460174.
13. McCombs, S., Tian, Z., Turkcan, A., Nuti, L., Zhang, L., Sands L., Lawley, M. "Cancelled Primary Care Appointments: A Prospective Cohort Study for Diabetic Patients" *Journal of Medical Systems*, 41(4):53. doi: 10.1007/s10916-017-0700-0, 2017.
14. Konrad, R., Vanberkel, P., Lawley, M. "A New Data Source to Support Hospital Operations Modeling: Message-Exchange Protocols" *IISE Transactions on Healthcare Engineering*, 7(1), pp. 30-42, 2017.
15. Alvarado, M., Kum, H., Lawley, M. "Patient Barriers to Remote Health for Type 2 Diabetes: A Systematic Review" *Journal of Medical Internet Research*, 19(2):e28. doi: 10.2196/jmir.6382, 2017.
16. Li Y., Lawley M., Siscovick D.S., Zhang D., Pagán J.A. "Agent-based Modeling of Chronic Diseases: a Narrative Review and Future Research Directions" *Preventing Chronic Disease*, 13:150561, 2016.

¹ Citation summary: <http://scholar.google.com/citations?user=smqjwZwAAAAJ&hl=en&oi=ao>

17. Li, Y., Kong, N., Lawley, M. "Capacity Planning for Long Term Care" *IIE Transactions*, 48(12), pp. 1098-1111, 2016.
18. Nuti, L., Turkcan, A., Lawley, M. A., Zhang, L., Sands, L., & McComb, S. "The Impact of Interventions on Appointment and Clinical Outcomes for Individuals with Diabetes: a Systematic Review" *BMC Health Services Research*, 15:355, DOI: 10.1186/s12913-015-0938-5, 2015.
19. Li, Y., Kong, N., Lawley, M., Weiss, L., and Pagán, J.A. "Advancing the Use of Evidence-Based Decision Making in Local Health Departments with Systems Science Methodologies" *American Journal of Public Health*, 105(S2) S217-S222, 2015.
20. Li, Y., Kong, N., Lawley, M., and Pagán, J. A. "Using Systems Science for Population Health Management in Primary Care" *Journal of Primary Care & Community Health*, 5(4) 242-246, 2014.
21. Zeng, B., Zhao, H., Lawley, M. "The Impact of Overbooking on Primary Care Patient No-show" *IIE Transactions on Healthcare Engineering*, 3(3), 147-170, 2013.
22. Chakraborty, S., Muthuraman, K., Lawley, M. "Sequential Scheduling with Patient No-Show: The Impact of Predefined Slot Structures" *Socio-Economic Planning Sciences Special Issue on Healthcare Modeling*, 47, 205-219, 2013.
23. Konrad, R., Lawley, M. "Monitoring Adherence to Evidence Based Practices: A Method to Utilize HL7 Messages from Hospital Information Systems" *Applied Clinical Informatics (ACI)*, 4, 126-143, 2013.
24. Nuti, L., Lawley, M., Tian, Z., Turkcan, A., Sands, L. "Diabetic Patients that No-show to their Primary Care Appointments: Subsequent Emergency Department Visits and Hospitalizations" *Biomed Central (BMC) Health Services Research*, doi:10.1186/1472-6963-12-304,12:304, 2012.
25. Chew, S., Wang, S., and Lawley, M. "Process Completing Sequences for Resource Allocation Systems with Process Synchronizations" *Journal of Control Science and Engineering*, doi:10.1155/2012/424051, 2012.
26. Turner, J., Qiao, J., Lawley, M., Richard, J.P., Abraham, D. "Mitigating Shortage and Transportation Costs in Damaged Water Infrastructure" *Socio-Economic Planning Sciences Special Issue on Disaster Planning and Logistics*, 46(4), 315-326, 2012.
27. Turkcan, A., Zeng, B., Lawley, M. "Chemotherapy Operations Planning and Scheduling" *IIE Transactions on Healthcare Systems Engineering*, 2(1), 31-49, 2012.²
28. Turkcan, A., Zeng, B., Muthuraman, K., and Lawley, M. "Sequential Clinical Scheduling with Service Criteria" *European Journal of Operational Research*, 214(3), 780-795, 2011.
29. Huang, P., Lawley, M., Morin, T. "Tight Bounds for Periodicity Theorems on the Unbounded Knapsack Problem" *European Journal of Operational Research*, 215(2), 319-324, 2011.
30. Lin, J., Muthuraman, K., Lawley, M. "Optimal and Approximate Algorithms for Sequential Clinical Scheduling with No-shows" *IIE Transactions on Healthcare Systems Engineering*, 1(1), 20-36, 2011.³
31. Chew, S., Wang, S., Lawley, M. "Resource Failure and Blockage Control for Production Systems" *International Journal of Computer Integrated Manufacturing*, 24(3), 229-241, 2011.
32. Adida, E., DeLaurentis, P., Lawley, M. "Hospital Stockpiling for Disaster Response" *IIE Transactions*, 43, 1-15, 2011.
33. Daggy, J., Lawley, M., Willis, D., Thayer, D., Suelzer, C., DeLaurentis, P., Turkcan, A., Chakraborty, S., Sands, L. "Using No-show Modeling to Improve Clinic Performance" *Health Informatics Journal*, 16(4), 246-259, 2010.
34. Lin, F., Muthuraman, K., Lawley, M. "An Optimal Control Theory Approach to Non-Pharmaceutical Interventions" *Biomed Central (BMC) Infectious Diseases*, 10(32), 2010.

² 2nd Most Cited Article, *IIE Transactions on Healthcare Systems Engineering* as of 2018

³ 6th Most Cited Article, *IIE Transactions on Healthcare Systems Engineering* as of 2018
<http://www.tandfonline.com/action/showMostCitedArticles?journalCode=uhse21>

35. Baumann, J., Lawley, M., Mishra, A., Ryan, J.K., Tew, J., Wu, P. "Evaluating the Performance of Cross-docks: A Data Envelopment Analysis Approach" *International Journal of Operations and Quantitative Management*, 16(1), 23-42, 2010.
36. Chakraborty, S., Muthuraman, K., Lawley, M. "Sequential Clinical Scheduling with General Service Times and No-show Patients" *IIE Transactions*, 42, 1-13, 2010. ⁴
37. Zeng, B., Turkcan, A., Lin, J., Lawley, M. "Clinic Scheduling Models with Overbooking for Patients with Heterogeneous No-show Probabilities" *Annals of Operations Research, Special Issue on Operations Research in Health Care Delivery*, 178(1), 121-144, 2010.
38. Lim, J., Yih, Y., Gichunge, C., Tierney, W., Le, T., Zhang, J., Lawley, M., Peterson, T., Mamlin, J. "The AMPATH Nutritional Information System: Designing a Food Distribution Electronic Record System in Rural Kenya" *Journal of the American Medical Informatics Association*, 16, 882-888, 2009.
39. Wang, S., Chew, S., Lawley, M. "Implementation Guidelines for Robust Supervisors in Automated Manufacturing" *International Journal of Production Research*, 47(23), 6499 – 6524, 2009.
40. Chew, S., Wang, S., Lawley, M. "Robust Supervision for Product Types with Multiple Unreliable Resources" *IEEE Transactions on Automation Science and Engineering*, 6(1), 195-200, 2009.
41. Chakraborty, S., Gebraeel, N., Lawley, M., Wan, H. "Empirical Residual Life Estimation for Components with Non-symmetric Priors" *IIE Transactions*, 41(4), 372-387, 2009.
42. Avery, G., Lawley, M., Garrett, S., Caldwell, B., Durr, M., Abraham, D., Lin, F., DeLaurentis, P., Kopach-Konrad, R., Peralta, M., Russell, A., Staples, D., Ignacio, L., Sandino, R. "Planning For Pandemic Influenza: Lessons from the Experiences of Thirteen Indiana Counties" *Journal of Homeland Security and Emergency Management*, 5(1), 1-29, 2008.
43. Parmeshwaran, V., Turkcan, A., Lawley, M., Richard, J.P. "A Time-Space Scheduling Model for Optimizing Recurring Bulk Railcar Deliveries" *Transportation Research Part B*, 42(5), 438-454, 2008.
44. Lin, F., Spry, C., Lawley, M., Coyle-Rogers, P., McCarthy, K., and Yih, Y. "Using Simulation to Design a Central Sterilization Department" *Association of Perioperative Registered Nurses (AORN)*, 88940, 555-567, 2008.
45. Muthuraman, K., Lawley, M. "A Stochastic Overbooking Model for Sequential Clinical Scheduling with No-shows" *IIE Transactions*, 40:9,820-837, 2008.⁵
46. Wang, S., Chew, S., Lawley, M. "Using Shared Resource Capacity for Robust Control of Failure Prone Manufacturing Systems" *IEEE Transactions on Systems, Man, and Cybernetics*, 38(3), 605-627, 2008.
47. Gebraeel, N. and Lawley, M. "An Adaptive Neural Network Degradation Model for Computing and Updating Residual Life Distributions" *IEEE Transactions on Automation Science and Engineering*, 5(1), 154-163, 2008.
48. Konrad, R., Lawley, M., Criswell, M., Hasan, I., Chakraborty, S., Pekny, J., Doebbeling, B. "Applying System Engineering Approaches in Improving Healthcare Delivery" *Journal of General Internal Medicine*, 22, Supplement 3, 431-437, 2007.
49. Kopach, R., DeLaurentis, P., Lawley, M., Muthuraman, K., Ozsen, L., Rardin, R., Wan, H., Intrevado, P., Qu, X., Willis, D. "Effects of Clinical Characteristics on Successful Open Access Scheduling" *Health Care Management Science*, 10, 111-124, 2007.
50. Qiao, J., Jeong, H., Abraham, D., Lawley, M., Richard, J.P., Yih, Y. "Optimal Allocation of Security Resources in Water Infrastructure" *IIE Special Issue on Homeland Security*, 38, 1-15, 2007. ⁶
51. Gebraeel, N., Lawley, M., Wu, S., and Yih, Y. "A Neural-Network Integrated Decision Support System for Optimal Predictive Maintenance" *IEEE Transactions on Systems, Man, and Cybernetics*, 37(2), 226-236, 2007.

⁴ Best Applied Paper Award, IIE Transactions 2011

⁵ 10th most cited article in IIE Transactions, 2012

⁶ Best Applied Paper Award, IIE Transactions 2008

52. Chew, S., Lawley, M. "Robust Supervisory Control for Resource Allocation Systems with Multiple Unreliable Resources" *IEEE Transactions on Automation Science and Engineering*, 3(3), 2006.
53. Jeong, H., Qiao, J., Abraham, D., Lawley, M., Richard, J.P., Yih, Y. "Minimizing the Consequences of Intentional Attack on Water Infrastructure" *Computer-Aided Civil and Infrastructure Engineering*, 21, 79-92, 2006.
54. Aytug, H., Lawley, M., McKay, K., Mohan, S., and Uzsoy, R. "Executing Production Schedules in the Face of Uncertainties: A Review and Some Future Directions" *European Journal of Operational Research*, 161, 86-110, 2005.
55. Gebraeel, N., Lawley, M., Li, Rong, and Ryan, J.K. "Residual Life Distributions from Component Degradation Signals: A Bayesian Approach" *IIE Transactions*, 37(6), 543-557, 2005.⁷
56. Gebraeel, N., Lawley, M., Liu, R., V. Parmeshwaran, "Residual Life Predictions from Vibration Based Degradation Signals: A Neural Net Approach" *IEEE Transactions on Industrial Electronics*, 51(3), 694-700, 2004.
57. Aytug, H., Barua, A., Lawley, M., and Uzsoy, R. "Observations on the Interactions Among Deadlock Avoidance Policies and Dispatching Rules in Automated Manufacturing Systems" *International Journal of Production Research*, 41(1); 81-95, 2003.
58. Lawley, M. "Control of Deadlock and Blocking in Production Systems with Unreliable Workstations" *International Journal of Production Research*, 40(17); 4563-4582, 2002.
59. Lawley, M. and Sulistyono, W. "Robust Supervisory Control Policies for Manufacturing Systems with Unreliable Resources" *IEEE Transactions on Robotics and Automation*, 18, 346-359, 2002.
60. Mullinax, C. and Lawley, M. "Assigning Patients to Nurses in Neonatal Intensive Care" *Journal of the Operational Research Society*, 53(1); 25-35, 2002.
61. Park, J., Reveliotis, S., Lawley, M., Ferreira, P. "Correction to the RUN DAP for Conjunctive RAS" *IEEE Transactions on Automatic Control*, 46(4), 672, 2001.
62. Sulistyono, W. and Lawley, M. "Deadlock Avoidance for Manufacturing Systems with Partially Ordered Process Plans" *IEEE Transactions on Robotics and Automation*, 17(6); 819-832, 2001.
63. Gebraeel, N. and Lawley, M. "Deadlock Detection, Prevention, and Avoidance for Automated Tool Sharing Systems in Flexible Manufacturing" *IEEE Transactions on Robotics and Automation*, 17(3); 342-356, 2001.
64. Lawley, M. and Reveliotis, S. "Optimal Deadlock Avoidance in Sequential Resource Allocation Systems: Hard and Easy Cases" *International Journal of Flexible Manufacturing Systems*, 13(4); 385-404, 2001.
65. Lawley, M. "Integrating Routing Flexibility and Algebraic Deadlock Avoidance Policies in Automated Manufacturing Systems" *International Journal of Production Research*, 38(13); 2931-2950, 2000.
66. Lawley, M. and Mittenthal, J. "Order Release and Deadlock Avoidance Interactions in Counterflow System Optimization" *International Journal of Production Research*, 37(3); 3043-3062, 1999.
67. Lawley, M., 1999, "Deadlock Avoidance for Production Systems with Flexible Routing" *IEEE Transactions on Robotics and Automation*, 15(3); 497-510, 1998.
68. Lawley, M., Reveliotis, S., Ferreira, P. "A Correct and Scalable Deadlock Avoidance Policy for Flexible Manufacturing Systems" *IEEE Transactions on Robotics and Automation*, 14(5); 796-810, 1998.
69. Lawley, M., Reveliotis, S., Ferreira, P. "The Application and Evaluation of Banker's Algorithm for Deadlock Free Buffer Space Allocation in Flexible Manufacturing Systems" *International Journal of Flexible Manufacturing Systems*, 10(1); 73-100, 1998.
70. Lawley, M., Reveliotis, S., Ferreira, P. "Structural Control of Flexible Manufacturing Systems and the Neighborhood Policy: Part 2 Generalization, Optimization, and Efficiency" *IIE Transactions*, 29(10); 888-899, 1997.

⁷ 2nd most-cited article, IIE Transactions, 2018

<http://www.tandfonline.com/action/showMostCitedArticles?journalCode=uiie21>

71. Lawley, M., Reveliotis, S., Ferreira, P. "Structural Control of Flexible Manufacturing Systems and the Neighborhood Policy: Part 1 Correctness and Scalability" *IIE Transactions*, 29(10); 877-887, 1997.
72. Lawley, M., Reveliotis, S., Ferreira, P. "Design Guidelines for Developing Deadlock Handling Strategies in Flexible Manufacturing Systems" *International Journal of Flexible Manufacturing Systems*, 9(1); 5-29, 1997.
73. Reveliotis, S., Lawley, M., Ferreira, P. "Polynomial Complexity Deadlock Avoidance Policies for Sequential Resource Allocation Systems" *IEEE Transactions on Automatic Control*, 42(10); 1344-1357, 1997.
74. Lu, S., Smith, K., Herman, A., Mattox, D., Silliman, M., Lucenti, M., Jacobs, J., Chazin, D., Lawley, M., and Case, M. "SWIFT: System Workbench for Facilitating and Integrating Teams" *The International Journal of Intelligent and Cooperative Information Systems*, 3(2); 173-187, 1994.
75. Herman, A., Lawley, M., Lu, S., and Mattox, D. "An Opportunistic Approach to Process Planning within a Concurrent Engineering Environment" *Annals of CIRP*, 42(1); 545-548, 1993.
76. Albright, T., Ingram, R., and Lawley, M. "The Beville Manufacturing Case: Using Factory Simulation Software to Teach the Concept of Activity Based Costing and Nonfinancial Performance Measures" *The Journal of Accounting Education*, 10(2); 329-348, 1992.
77. Lawley, M. and Black, JT, "Design of a Self-Propelled Mobile Robot" *SME Transactions of NAMRI XIV*, 299-303, 1989.

In Preparation

1. Hassani, A., Kong, N., Lawley, M. "Capacity Planning Under Distributed Decision Making in Long Term Care"
2. Alvarado, M., Zhang L., Lawley, M. "Design of Penalties and Incentives for Hospital Readmission"
3. Khatami, M., Lawley, M. "Multi-stage Risk-averse Inpatient Discharge Planning Under Uncertainty"
4. Feng H., Alvarado, M., Lawley, M. "Sequential Clinical Scheduling with Patient Re-entrant: The Case of Mohs Micrographic Surgery"

Conference Papers

1. Li, Y., Alvarado, M., Lawley, M. "Tutorial: Simulation in Healthcare" *Proceedings of the Winter Simulation Conference*, Washington DC, December 2016.
2. Alvarado, M., Zhang, Y., and Lawley, M. "Hospital Readmission Reduction Strategies Using a Penalty-Incentive Model" *ISERC 2016*, 2016.
3. Elkins, A., Gorman, D., Maddock, J., Kum, H., & Lawley, M. "The Value of the Frame: Painting Complexity Using Two Chronic Disease Models" *Journal of the International Society for the Systems Sciences: Proceedings of the 59th Annual Meeting of the International Society for Systems Sciences – Berlin, DE*, 2015.
4. Elkins, A., Gorman, D., Maddock, J., Kum, H., & Lawley, M. *Framing & Value in Social System Modelling*. Poster presented at the *59th Annual Meeting of the International Society for Systems Sciences*, Berlin, DE, 2015.
5. Li, Y., Kong, N., Lawley, M., and Pagán, J. A. "Assessing Lifestyle Interventions to Improve Cardiovascular Health Using an Agent-based Model" in *Proceedings of the 2014 Winter Simulation Conference*, Savannah, GA, 2014.
6. Li, Y., Kong, N., Lawley, M., and Sands, L. "Optimizing Multi-type Service Capacity for an Accountable Care Organization" in *Proceedings of the Manufacturing & Service Operations Management Conference*, Seattle, WA, 2014.
7. Li, Y., Kong, N., Lawley, M., and Pagán, J. A. "Using Simulation Modeling to Compare Alternative Lifestyle Approaches and Prevent Cardiovascular Disease" in *Proceedings of the 36th Annual Meeting of the Society for Medical Decision Making*, Miami, FL, 2014. (*Lee B. Lusted Prize Finalist)

8. Li, Y., Kong, N., Lawley, M. and Pagán, J. A. "An Agent-based Model for Ideal Cardiovascular Health" Poster in *Complex Systems, Health Disparities and Population Health Conference*, NIH Campus, Bethesda, MD, February 2014.
9. Steidle, S., Lee, S., Lawley, M. "Sequential Clinical Scheduling with Re-entrant: the Case of Mohs Microsurgery" *Proceedings of the 2013 Industrial Engineering Research Conference (IERC)*, Puerto Rico, May 2013.
10. Chockalingam, A., Jayakumar, K., Lawley, M. "A stochastic control approach to avoiding Emergency Department overcrowding" *Proceedings of the 2010 Winter Simulation Conference (WSC)*, 2399 - 2411, Baltimore, MD, December 2010.
11. Konrad, R., Lawley, M. "Input Modeling for Hospital Simulation Models Using Electronic Messages" *Proceedings of the 2009 Winter Simulation Conference (WSC)*, 134-14, Austin, TX, December 2009.
12. DeLaurentis, P., Adida, E., and Lawley, M. "Hospital Stockpiling for Influenza Pandemics with Pre-determined Response Levels" *IEEE/INFORMS International Conference on Service Operations, Logistics and Informatics, 2009. SOLI '09*, 37-42, Chicago, IL, July 2009.
13. Konrad, R., Lawley, M., and Lambert, S. "Characterizing Inpatient Hospital Flow from Information Systems Messaging" *Proceedings of the 2008 Industrial Engineering Research Conference (IERC)*, Vancouver, B.C., May 2008.
14. DeLaurentis, P., Adida, E., and Lawley, M. "A Game Theoretical Approach for Hospital Stockpiling in Preparation for Pandemics" *Proceedings of the 2008 Industrial Engineering Research Conference (IERC)*, Vancouver, B.C., May 2008.
15. Chakraborty, S., Muthuraman, K., and Lawley, M. "Sequential Clinical Scheduling with General Service Times and No-show Patients" *Proceedings of the 2008 National Science Foundation Awardees Conference*, Knoxville, TN, January 2008.
16. Parmeshwaran, V., Richard, J.P., Lawley, M., and Turkcan, A. "A Heuristic Solution Procedure to Optimize Recurring Bulk Railcar Deliveries" *Proceedings of the 2007 Industrial Engineering Research Conference (IERC)*, Nashville, TN, May 2007.
17. Criswell, M., Hasan, I., Kopach, R., Lawley, M., McWilliams, D., and Varadarajan, N. "Emergency Department Divert Avoidance using Petri Nets" *Proceedings of IEEE Second International Conference on System of Systems Engineering (ICSoSE)*, San Antonio, TX, April 16-18, 2007.
18. Muthuraman, K. and Lawley, M. "A Probabilistic Overbooking Policy for Open Access Clinical Scheduling" *Proceedings of the 18th Annual Conference of the Production and Operations Management Society (POMS)*, Dallas, TX, May 4-7, May 2007.
19. Lawley, M., Doebbling, B., and Pekny, J. "Applying System Engineering Approaches to the Care of Complex Patients" *Department of Veteran's Affairs State of the Art (SOTA) Conference*, Washington D.C., September 2006.
20. Qiao, J., Jeong, H., Richard, J. P., Lawley, M., Abraham, D. and Yih, Y. "Consequences Mitigation Strategies for Water Networks against Physical Destruction" *Proceedings of the 2006 Industrial Engineering Research Conference (IERC)*, Orlando, FL, May 2006.
21. Qu, X., Rardin, R., Stuart, J., Tieman, L., Wan, H., Lawley, M., Willis, D and Rosenman, M. "A Statistical Model for the Prediction of Patient Non-Attendance in a Primary Care Clinic" *Proceedings of the 2006 Industrial Engineering Research Conference (IERC)*, Orlando, FL, May 2006.
22. Sankaranarayanan, G., Lee, S., Yih, Y., Lawley, M., Suelzer, C., Thayer, D. and Doebbeling, B. "Patient No Show Prediction in Outpatient Clinics in Veterans Administration" *Proceedings of the 2006 Industrial Engineering Research Conference (IERC)*, Orlando, FL, May 2006.
23. Lee, S., Locker, M., Yih, Y., Lawley, M., Suelzer, C., Thayer, D. and Doebbeling, B. "Dynamic Open Access Scheduling for Outpatient Clinics: A Simulation Study" *Proceedings of the 2006 Industrial Engineering Research Conference (IERC)*, Orlando, FL, May 2006.
24. Spry, C. and Lawley, M. "Evaluating Hospital Pharmacy Staffing and Work Scheduling Using Simulation" *Proceedings of the 2005 Winter Simulation Conference*, Orlando, FL, December 2005.

25. Wang, S., Chew, S. and Lawley, M. "Using Shared Resource Capacity for Robust Control of Failure Prone Manufacturing Systems" *Proceedings of the 2005 Institute of Electrical and Electronics Engineers (IEEE) Conference on Automation Science and Engineering*, Edmonton, Canada, August 2005.
26. Chew, S. and Lawley, M. "Robust Supervisory Control for Resource Allocation Systems with Multiple Unreliable Resources" *Proceedings of Institute of Electrical and Electronics Engineers (IEEE) Conference on Automation Science and Engineering*, Edmonton, Canada, August 2005.
27. Qiao, J., Jeong, J., Lawley, M., Abraham, D., Richard, J.P. and Yih, Y. "A Consequence Mitigation Model for Water Networks Subject to Intentional Physical Attacks" *Proceedings of the 2005 American Society of Civil Engineers (ASCE) International Conference of Computing in Civil Engineering*, Cancun, Mexico, July 2005.
28. Jeong, H.S., Abraham, D.M., Qiao, J., Lawley, M., Richard, J.P. and Yih, Y. "Issues in Risk Management of Water Networks against Intentional Attacks" *Proceedings of the 2004 American Society of Civil Engineers (ASCE) International Pipeline Conference*, San Diego, CA, 2004.
29. Gebraeel, N., Lawley M. and Parmeshwaran V. "Bearing Life Percentile Prediction for Maintenance Management and Replacement Decisions" *13th International Flexible Automation and Intelligent Manufacturing (FAIM) Conference*, Tampa, FL, June 2003.
30. Chew, S., Lawley, M. and Reveliotis, S. "Liveness Enforcing Supervision for Resource Allocation Systems with Complex Workflows" *Proceedings of 9th International Conference on Methods and Models in Automation and Robotics*, Miedzyzdroje, Poland, August 2003.
31. Chew, S., Lawley, M. and Reveliotis, S. "Liveness Enforcing Supervision for Resource Allocation Systems with Process Synchronizations" *42nd Institute of Electrical and Electronics Engineers (IEEE) Conference on Decision and Control*, Maui, HI, December 2003.
32. Gebraeel, N., Lawley, M. and Liu, C.R. "Vibration Based Condition Monitoring of Thrust Bearings for Maintenance Management" *Artificial Neural Networks in Engineering (ANNIE) in association with Institute of Electrical and Electronics Engineers (IEEE) Neural Network Council*, St. Louis, MO, November 10-13, 2002.⁸
33. Sulistyono, W. and Lawley, M. "Robust Supervisory Control Policies for Manufacturing Systems with Unreliable Resources" *Proceedings of 2002 Institute of Electrical and Electronics Engineers (IEEE) International Conference on Robotics and Automation*, 199-204, Washington, D.C., 2002.⁹
34. Aytug, H., Lawley, M., Mohan, S. and Uzsoy, R. "Executing Production Schedules in the Face of Uncertainties: A Brief Review and Some Future Directions" *International Conference on Industrial Engineering and Production Management Systems*, Laval University, Quebec City, 2001.
35. Roszkowska, E. and Lawley, M. "Supervisory Control for Flexible Assembly Systems with AGV Material Handling" *Proceedings of 6th International Conference on Methods and Models in Automation and Robotics*, Vol. 2, 853-8, Technical University Szczecin, Szczecin, Poland, 2000.
36. Gebraeel, N. and Lawley, M. "Deadlock Characterization for Automated Tool Sharing Systems" *Proceedings of 2000 Japan-USA Symposium on Flexible Automation*, 2000JUSFA-13152, Ann Arbor, MI, 2000.
37. Sulistyono, W. and Lawley, M. "Optimal Deadlock Avoidance in Flexible Manufacturing Systems with Flexible Sequencing" *Proceedings of 2000 Japan-USA Symposium on Flexible Automation*, 2000JUSFA-13127, Ann Arbor, MI, 2000.
38. Sulistyono, W. and Lawley, M. "Deadlock Avoidance for Manufacturing Systems with Partially Ordered Process Plans" *Proceedings of 2000 Institute of Electrical and Electronics Engineers (IEEE) International Conference on Robotics and Automation*, Vol. 4, pp. 3383-3388, San Francisco, CA, 2000.
39. Lawley, M. "Deadlock Avoidance for Manufacturing Systems with Flexible Routing and Mixed Capacity" *Proceedings of 1998 Institute of Electrical and Electronics Engineers (IEEE) International Conference on Systems, Man, and Cybernetics*, Vol. 1, pp. 594-599, Los Angeles, CA, 1998.

⁸ Nominated for Best Paper Award, 2002 ANNIE Conference

⁹ Kayamori Best Paper Award, 2002 IEEE International Conference on Robotics and Automation

40. Lawley, M. "Deadlock Characterization for Manufacturing Systems with Flexible Routing" *Proceedings of 1998 Japan-USA Symposium on Flexible Automation*, pp. 1193-1196, Otsu, Japan, 1998.¹⁰
41. Lawley, M. "Flexible Routing and Deadlock Avoidance in Automated Manufacturing Systems" *Proceedings of 1998 Institute of Electrical and Electronics Engineers (IEEE) International Conference on Robotics and Automation*, Vol. 1, pp. 591-596, Lueven, Belgium, 1998.
42. Sahay, R., Matson, J., Miller, D. and Lawley, M. "Single Machine Scheduling with Sequence Dependent Setup Times and Setup Carry-Over" *Proceedings of 1998 Industrial Engineering Research Conference (IERC)*, Banff, Canada, 1998.
43. Reveliotis, S. and Lawley, M. "Application of Banker's Algorithm for Deadlock Avoidance in FMS" *Proceedings of the 6th Institute of Electrical and Electronics Engineers (IEEE) International Conference on Emerging Technologies and Factory Automation*, pp. 214-220, Los Angeles, CA, 1997.
44. Reveliotis, S., Lawley, M. and Ferreira, P. "On the Complexity of Optimal Deadlock Avoidance in Flexible Manufacturing Systems" *Proceedings of 1997 Institute of Electrical and Electronics Engineers (IEEE) International Conference on Robotics and Automation*, Vol. 2, pp. 1008-1012, Albuquerque, NM, 1997.
45. Ferreira, P., Lawley, M., and Reveliotis, S, "Deadlock Avoidance Policies for Resource Allocation Systems with Applications to FMS" *Proceedings of the 6th Institute of Electrical and Electronics Engineers (IEEE) International Conference on Emerging Technologies and Factory Automation*, Vol.1, pp. 42-48, Kauai, HI, 1996.
46. Lawley, M., Reveliotis, S. and Ferreira, P. "Configurable and Scalable Real Time Control Policies for Deadlock Avoidance in Flexible Manufacturing Systems" *Proceedings of the Sixth International Flexible Automation and Intelligent Manufacturing Conference*, pp. 758-768, Atlanta, GA, 1996.
47. Reveliotis, S., Lawley, M. and Ferreira, P. "Deadlock Avoidance Policies for Large-Scale Flexibly Automated Manufacturing Systems" *Proceedings of 1996 Conference on Agile and Intelligent Manufacturing Systems*, Troy, NY, 1996.
48. Reveliotis, S., Lawley, M. and Ferreira, P. "An Analytical Framework for Structural Control of Flexible Manufacturing Systems" *Proceedings of 11th International Conference on Computer Aided Production Engineering*, pp. 249-254, London, England, 1995.
49. Reveliotis, S., Lawley, M. and Ferreira, P. "Structural Control Policies for Flexible Manufacturing Systems" *Proceedings of 11th International Conference on Computer Aided Production Engineering*, pp. 255-260, London, England, 1995.
50. Wallace, J., Herman, A., Mowbray, D., Burnett, A. and Lawley, M. "A Framework for Flight Vehicle Simulation" *Proceedings of 1994 Object Oriented Simulation Conference*, 26(2); pp. 176-182, Tempe, AZ, 1994.
51. Lawley, M. and Ferreira, P. "An Automaton Based Framework for Analysis and Control of Flexible Manufacturing Systems" *Proceedings of 1994 Mid-America Conference on Intelligent Systems*, pp. 144-152, Kansas City, KS, 1994.
52. Lu, S., Smith, K., Herman, A., Mattox, D., Silliman, M., Lucenti, M., Jacobs, J., Chazin, D., Lawley, M. and Case, M. "SWIFT: System Workbench for Facilitating and Integrating Teams" *Proceedings of the Institute of Electrical and Electronics Engineers (IEEE) Second Workshop on Enabling Technologies and Infrastructure for Collaborative Enterprises*, pp. 48-59, Morgantown, WV, 1993.
53. Chaudhari, S., Webster, D. and Lawley, M. "Phases of Robotic Cell Design for DeBurring" *Proceedings of International Conference of DeBurring and Surface Conditioning*, Society of Manufacturing Engineers, University of Missouri-Rolla, Rolla, MO, 1991.
54. Matson, J., Webster, D., Dutt, R. and Lawley, M. "Evaluating and Extending the Flexibility of a Cell Layout: A Case Study" *Proceedings of 1990 International Industrial Engineering Conference (IERC)*, pp. 248-253, San Francisco, CA, 1990.

¹⁰ Best Theoretical Paper Award, 1998 Japan-USA Symposium on Flexible Automation, Otsu, Japan.

Book Chapters

1. Li Y., Kong N., Lawley M., Pagán J. "An Agent-based Model for Ideal Cardiovascular Health" In *Decision Analytics and Optimization in Disease Prevention*, John Wiley & Sons, Ed. Nan Kong, Forthcoming.
2. Turkcan, A., DeLaurentis, P., Lin, J., Nuti, L., Tian, Z., Zhang, L., Lawley, M., Sands, L. "No-show Modeling in Ambulatory Care" *Healthcare Operations Management*, Springer, Ed. Brian Denton, 2013.
3. Konrad, R., Kucukyazici, B., Lawley, M. "Using Patient Flow to Examine Hospital Operations" *Management Engineering for Effective Healthcare Delivery: Principles and Applications* IGI Global, Ed. Alexander Kolker and Pierce Story, 2011.
4. Lin, F., Kong, N., Lawley, M. "Capacity Planning for Publicly Funded Community Based Long-Term Care Services" *Community-Based Operations Research: Decision Modeling for Local Impact and Diverse Populations*, Springer, Ed. Michael P. Johnson Jr, 2011.
5. Wang, S. Chew. S., Lawley, M. "Robust Control for Single Unit Resource Allocation Systems" *Challenges and Paradigms in Applied Robust Control*, InTech, Ed. A. Bartoszewicz, 2011.
6. Thomas, M., Lawley, M., Liu, R. "Manufacturing Support for Contingency Logistics" *Handbook of Military Industrial Engineering*, CRC Press, Ed. A. Badiru, 2009.
7. DeLaurentis. P., Lawley, M., Abraham, D. "Consequence Mitigation: Current Research and Future Trends" *Wiley Handbook of Science and Technology for Homeland Security*, Wiley, Ed. John G. Voeller, 2008.
8. Qiao, J., Jeong, J., Lawley, M. and Abraham, D. "Security Issues in Water Infrastructure" *Advances in Homeland Security, Vol. 1, The Science of Homeland Security*, Purdue University Press, Ed. S. Amass, A. Bhunia, A. Chaturvedi, D. Dolk, S. Peeta and M. Atallah, 2006.
9. Lawley, M. "Deadlock Analysis and Avoidance for Systems with Flexible Routing" *Deadlock Resolution in Computer-Integrated Systems*, Marcel Dekker, Ed. M. Zhou and M. Fanti, 2005.
10. Gebraeel, N., Lawley, M., Liu, R. "Vibration-based Condition Monitoring of Thrust Bearings for Maintenance Management" *Intelligent Engineering Systems Through Artificial Neural Networks: Volume 12*, ASME Press, Ed. Cihan H. Dagli, Anna L. Buczak, Joydeep Ghosh, Mark J. Embrechts, Okan Ersoy and Stephen W. Kercel, 2002.
11. Reveliotis, S., Lawley, M. and Ferreira, P. "Structural Control of Large-Scale Flexibly Automated Manufacturing Systems" *Computer Aided and Integrated Manufacturing Systems, Techniques and Applications*, Gordon and Breach Science Publishers, Ed. Cornelius Leondes, 1998.

ENGAGEMENT ACTIVITIES

Dr. Lawley believes that the essence of university engagement involves mutually beneficial collaborations between those working in industry and those in academics. Further, he believes that many of the most compelling research problems evolve through engagement opportunities. Given this, he has participated in industry engagement through Continuing Engineering Education (CEE), Technical Assistance (TAP), Senior Design, the Regenstrief Center for Healthcare Engineering (RCHE), and the Purdue Healthcare Advisors (PHA, which he helped found in 2006). Through CEE, he taught many distance education courses for students at companies such as General Motors, Ford, and Cummins. Through TAP and IE Senior Design, he supervised and contributed to short term projects with numerous manufacturers, hospitals, clinics, and other businesses including Whirlpool, Cummins, Caterpillar, Alcoa, General Motors, the U.S. Postal Service, St. Elizabeth's Hospital, Ingersoll-Rand, Wabash National, and many others. Through RCHE and PHA, he worked directly with healthcare partners to develop research collaborations and directions. These partners include Ascension Health, the St. Vincent Ministries, the Roudebush Veteran's Affairs Hospital, the American College of Physicians, Community Physicians of Indiana, and the Indiana State Department of Health. Recent engagement projects (past 6 years) in which Dr. Lawley has played a leadership role include:

1. Pandemic Flu Planning GAP Analysis for Indiana Local Health Departments, Indiana State Department of Health, Indianapolis, IN.
2. Alternate Care Site Planning for Pandemic Flu Planning, Indiana State Department of Health / Centers for Disease Prevention and Control, Indianapolis, IN.
3. Design of a Nutrition Prescription Database and Food Distribution System for HIV Patients in Rural Kenya, Indiana University Medical School Kenya Program, Eldoret, Kenya.
4. Decision Support Tool for Selecting Discharge and Transitional Care Interventions to Reduce 30-Day Readmissions, Indiana Hospital Association, Indianapolis, IN.
5. Blueprint for Effective In-patient Flow, Ascension Health, St. Louis, MO.
6. Financial Sustainability for the Patient Centered Medical Home, American College of Physicians, Philadelphia, PA.
7. Analysis of Pre-Registration and Central Scheduling for Outpatient Services, Community Healthcare System, Munster, IN.
8. Analysis for Renovation and Expansion of Existing Facility versus Construction of New Facility, St Mary's Medical Center, Evansville, IN.
9. Redesign of Endoscopy Services, Tipton Hospital, Tipton, IN.
10. Improvement of Patient Flow in Surgery, Putnam County Hospital, Greencastle, IN.
11. Design of an Emergency Department Simulator, St. Vincent Hospital, Carmel, IN.
12. Re-design of Central Sterilization Processing, St. Vincent Hospital, Indianapolis, IN.
13. Re-design of Ambulatory and In-patient Surgical Centers, Clark Memorial Hospital, Clarksville, IN.
14. Intensive Care Unit Nurse Station Redesign, Witham Memorial Hospital, Lebanon, IN.
15. Analysis and Improvement of Storage Areas, Witham Memorial Hospital, Lebanon, IN.