

# **JAMES R. BROYLES**

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Last Updated: February 2021

## **EDUCATION**

- Ph.D. ARIZONA STATE UNIVERSITY, Industrial Engineering (Operations Research), 2009  
Graduate Certificate in Statistics  
Dissertation: Markovian Models of Patient Throughput in Hospitals: A Regression and Decision Process Approach  
Committee Members: Jeffery Cochran, Co-chair; Douglas Montgomery, Co-chair; Gary Hogg; Michael Furukawa
- B.S.E. ARIZONA STATE UNIVERSITY, Industrial Engineering (Barrett Honors College), 2005  
Certificate in International Business  
Honors Thesis: Industrial Engineering in Hospitals: Framework, Practical Experience, and Resources  
Committee Members: Jeffery Cochran, Chair; Gary Hogg; David Pickus

## **RESEARCH INTERESTS**

Stochastic Modeling  
Applied Statistics  
Military Logistics  
Military Personnel  
Healthcare Operational Improvements  
Supply Chain Systems and Logistics  
Policy and Decision Making

## **RESEARCH AND WORK EXPERIENCE**

SENIOR OPERATIONS RESEARCHER  
RAND Corporation

2018-present  
Santa Monica, CA

OPERATIONS RESEARCHER RAND Corporation	2013-2018 Santa Monica, CA
PARDEE RAND GRADUATE SCHOOL FACULTY RAND Corporation	2012-2013 Santa Monica, CA
ASSOCIATE OPERATIONS RESEARCHER RAND Corporation	2009-2013 Santa Monica, CA
GRADUATE RESEARCH ASSISTANT Arizona State University, Department of Industrial Engineering	2005-2009 Tempe, AZ
ENGINEERING INTERN Banner Health, Department of Management Engineering	Summers 2005, 2006, 2007 Phoenix, AZ
UNDERGRADUATE RESEARCHER Arizona State University, Department of Industrial Engineering	2004-2005 Tempe, AZ
PLANNING ENGINEERING INTERN Micron Technologies	Summer 2004 Boise, ID

## PUBLICATIONS

### *RAND PEER REVIEWED PUBLICATIONS*

- [1] Chan EW, Krull H, Ahluwalia S, Broyles JR, Waxman D, Gurvey J, Colthirst PM, Schimmels J, Marinos A. (2020). Options for maintaining clinical proficiency during peacetime. Research Report. RR-2543-A.  
[https://www.rand.org/pubs/research\\_reports/RR2543.html](https://www.rand.org/pubs/research_reports/RR2543.html)
- [2] Reedy K, Harrington LM, Bennet BE, Bicksler B, Broyles JR, Corsi R, Emslie P, Goldman CA, Ibarra D, Jones DD, Karam R, Walsh M. (2020). Air Force nonrated technical training: selected topics to improve efficiency. Research Report. RR-2774-AF.  
[https://www.rand.org/pubs/research\\_reports/RR2774.html](https://www.rand.org/pubs/research_reports/RR2774.html)
- [3] Preston BL, LaTourrette T, Broyles JR, Catt D, Nelson C, Ringel JS, Waxman DA. (2019). Updating the costs of compliance for California's hospital seismic safety standards. Research Report. RR-3059-CHA.  
[https://www.rand.org/pubs/research\\_reports/RR3059.html](https://www.rand.org/pubs/research_reports/RR3059.html)
- [4] Robbins M, Broyles JR, Girardini J, Van Abel K, Boren P. (2019). Improving DoD's Weapon System Support Program: a critical readiness driver approach. Research Report. RR-2496-OSD. [https://www.rand.org/pubs/research\\_reports/RR2496.html](https://www.rand.org/pubs/research_reports/RR2496.html)

- [5] Hussey PS, Ringel J, Ahluwalia S, Anhang Price R, Buttorff C, Concannon TW, Lovejoy SL, Martsof G, Rudin RS, Schultz D, Sloss EM, Watkins KE, Waxman DA, Bauman M, Briscoombe B, Broyles JR, Burns RM, Chen EK, DeSantis AS, Ecola L, Fischer SH, Friedberg MW, Gidengil CA, Ginsburg PB, Gulden T, Gutierrez CI, Hirshman S, Huang CY, Kandrack R, Kress A, Leuschner K, MacCarthy S, Maksabedian EJ, Mann S, Matthews LJ, May LW, Mishra N, Kraus L, Muchow AN, Nelson J, Naranjo D, O'Hanlon CE, Pillemer F, Predmore Z, Ross R, Ruder T, Rutter CM, Uscher-Pines L, Vaiana ME, Vesely J, Hosek SD, Farmer CM. (2015). Resources and capabilities of the Department of Veterans Affairs to provide timely and accessible care to veterans. Research Report. RR-1165/2-VA. [http://www.rand.org/pubs/research\\_reports/RR1165z2.html](http://www.rand.org/pubs/research_reports/RR1165z2.html)
- [6] Broyles JR, Glick P, Hu J, Lim Y. (2012). Cataract blindness and the cost-effectiveness of simulation-based training for cataract surgeons: an assessment of the HelpMeSee approach. Technical Report. TR-1303-HMI. [http://www.rand.org/pubs/technical\\_reports/TR1303.html](http://www.rand.org/pubs/technical_reports/TR1303.html).
- [7] Moore M, Wermuth M, Resnick AC, Green HD, Broyles JR, Hickey S, Ostwald J, Leuschner KJ, Biever K. (2012). Bridging the gap: prototype tools to support local disaster preparedness planning and collaboration. Technical Report. TR-764. [http://www.rand.org/pubs/technical\\_reports/TR764z1.html](http://www.rand.org/pubs/technical_reports/TR764z1.html).
- [8] Olmsted S, Luangkesorn L, Broyles J, Sama P. (2010) Modeling the capacity of the Laboratory Response Network. Restricted Distribution Report.

*PEER REVIEWED JOURNAL AND CONFERENCE PUBLICATIONS*

- [1] Cordova A, Eibner C, Vardavas R, Broyles JR, Giroso F. (2013). Modeling employer self-insurance decisions after the Affordable Care Act. *Health Services Research*. DOI: 10.1111/1475-6773.12027.
- [2] Broyles JR, Cochran JK, Montgomery DC. (2011). A Markov decision process to dynamically match hospital inpatient staffing to demand. *IIE Transactions on Health Systems Engineering*. 1(2): 116-130.
- [3] Broyles JR, Cochran JK. (2011). A queuing based statistical approximation of hospital emergency department boarding. *Proceedings of the International Conference on Computers and Industrial Engineering*.
- [4] Broyles JR, Cochran JK, Montgomery DC. (2010). A statistical Markov chain approximation of transient hospital inpatient inventory. *European Journal of Operational Research*. 207(3):1645-1657.
- [5] Cochran JK, Broyles JR. (2010). Developing nonlinear queuing regressions to increase emergency department patient safety: approximating renegeing with balking. *Computers and Industrial Engineering*. 59(3):378-386.

- [6] Broyles JR, Roche KT. (2008). Capacitating outpatient clinics using queuing theory. *IIE Industrial Engineering Research Conference*. 6 pages on CD-ROM, Vancouver, British Columbia, Canada.
- [7] Burdick T, Broyles JR. (2008). Faster and safer emergency care with queuing. *American Society for Quality Conference*. Houston, TX.
- [8] Broyles JR, Cochran JK. (2007). Estimating business loss to a hospital emergency department from patient renegeing by queuing-based regression. *IIE Industrial Engineering Research Conference*. 6 pages on CD-ROM, Nashville, TN.

*PEER REVIEWED PUBLICATIONS IN PREPARATION*

- [1] Broyles JR, McKay S, Robber AA, Van Abel K, DeYoreo M, Kenney C, Leuschner KJ. Staffing Models for U.S. Customs and Border Protection's Support Services: A Methodology and Specific Applications. Target: RAND Research Report.
- [2] Pearson M, Broyles JR, Arifkhanova A, Beckham R, Needleman J. Assessing the value of operational improvement in hospitals: evaluation of a patient throughput collaborative. Target: Milbank Quarterly.

*BOOK CHAPTERS*

- [1] Burdick TL, Cochran JK, Andrews R, Bucco ME, Broyles JR, Roche KT. (2009). Door to doc toolkit: planning ED capacity for delivering safe care. Managing ED and Hospital Systems. Ed. David Eitel. Taylor & Francis.
- [2] Roche KT, Broyles JR. (2009). Queuing theory in healthcare. Performance Improvement in Hospitals and Health Systems. Ed. James R. Langabeer II. Healthcare Information and Management Systems Society (HIMSS Publishing).
- [3] Roche KT, Broyles JR. (2009). Simulation modeling in healthcare. Performance Improvement in Hospitals and Health Systems. Ed. James R. Langabeer II. Healthcare Information and Management Systems Society (HIMSS Publishing).

*SOLUTION MANUALS*

- [1] Johnson RT, Broyles JR, Rigdon CJ. (2009). Student Solutions Manual to Accompany: Introduction to Time Series Analysis and Forecasting, Authors: Montgomery DC, Jennings CL, Kulahci M. Wiley. New York.

*CONFERENCE PRESENTATIONS*

- [1] Broyles JR, Oguz M(2015). A methodology for estimating caseload in the U.S. Army's disability rating process. *Institute For Operational Research and the Management*

*Sciences Conference*. Philadelphia, PA.

- [2] Broyles JR, Resnick A. (2013). A prototype model for medical capabilities-based disaster preparedness. *Institute For Operational Research and the Management Sciences Conference*. Minneapolis, MN.
- [3] Broyles JR, Krull HM, Haugseth MT. (2012). A queuing network to improve the U.S. military service member disability rating process. *Institute For Operational Research and the Management Sciences Conference*. Phoenix, AZ.
- [4] Broyles JR, Cochran JK. (2011). A queuing based statistical approximation of hospital emergency department boarding. *International Conference on Computers and Industrial Engineering*. University of Southern California, Los Angeles, CA.
- [5] Broyles JR, Cochran JK, Montgomery DC. (2008). Approximating inpatient census distributions with queuing based regression. *Institute For Operational Research and the Management Sciences Conference*. Poster.
- [6] Broyles JR, Roche KT. (2008). Capacitating outpatient clinics using queuing theory. *Institute of Industrial Engineers Research Conference*. The Westin Bayshore, Vancouver, British Columbia, Canada.
- [7] Burdick TL, Broyles JR. (2008). Faster and safer emergency care with queuing. *American Society for Quality Annual Conference*. Houston, Texas. 5-7.
- [8] Broyles JR, Cochran JK. (2007). Estimating business loss to a hospital emergency department from patient renegeing by queuing-based regression. *Institute of Industrial Engineers Research Conference*. Nashville Convention Center, Nashville, Tennessee.

## **GRANT AND CONTRACT PROPOSALS**

- [1] Broyles JR. (2014). A methodology for cost-effective hospital nurse staffing. *National Science Foundation*. \$375,000.
- [2] Abir M, Broyles JR. (2013). Impact of ED length of stay and hospital operations on pediatric outcomes. *National Institute for Chile Health and Development*. \$517,000.
- [3] Pearson M, Needleman J, Broyles JR (2013). Evaluation of NJHA Hospital Engagement Network collaborative with the Institute for Healthcare Optimization. New Jersey Hospital Association. Awarded ~\$500,000.
- [4] Broyles JR. (2012). A model to estimate health progression and medical expenditures of obesity reduction interventions in California. *RAND Internal Research Proposal*.

- [5] Broyles JR, Jones S, Haims M. (2011). Measuring current wait times and creating performance metrics to reduce waiting for elected surgery. *Mexican Institute of Social Security*. \$159,891.
- [6] Broyles JR, Jones S, Haims M. (2011). Reducing waitlists and wait-times for elective surgery by strategically allocating surgical capacity. *Mexican Institute of Social Security*. \$158,480.
- [7] Moore M, Duarte F, Harris K, Kadiyala S, Broyles JR. (2011). Estimating the disease burden and risk factors of influenza in the southern hemisphere. *Center for Disease Control Influenza and Other Respiratory Diseases in the Southern Hemisphere*. \$1,000,000.
- [8] Glick P, Broyles JR, Vardavas R, Lim Y. (2010). Cataract blindness and the cost-effectiveness of simulation-based training for cataract surgeons. *Help Me See*. Awarded \$180,000.
- [9] Broyles JR. (2008). Conference travel grant. *Graduate and Professional Student Association, Arizona State University*. Awarded.
- [10] Broyles JR, Cochran JK. (2005). Undergraduate research grant. *Fulton School of Engineering, Arizona State University*. Awarded.

**STUDENT DISSERTATION COMMITTEES, INVITED SEMINARS, AND MENTORSHIP OPPORTUNITIES**

- [1] DISSERTATION COMMITTEE MEMBER 2012-2015  
 Student: M. Tyler Haugseth  
 Pardee RAND Graduate School, RAND Corporation Santa Monica, CA
- [2] INDEPENDENT STUDY FACULTY ADVISOR 2012  
 Student: M. Tyler Haugseth  
 RAND Corporation Santa Monica, CA
- [3] SUMMER ASSOCIATE ADVISOR 2012  
 Summer Associate: Kenneth Chong  
 RAND Corporation Santa Monica, CA
- [4] INVITED SPEAKER TO RAND EUROPE’S SEMINAR ON HEALTH AND INFORMATION TECHNOLOGY AND  
 RAND’S PAYDAY LOGISTICS SEMINAR 2011  
 RAND Corporation Santa Monica, CA  
 Title: A prototype model for medical capabilities-based disaster preparedness
- [5] INVITED SEMINAR SPEAKER 2010  
 University of Sonora, Department of Industrial Engineering Hermosillo, Son, Mexico

Title: Modeling patient throughput in hospitals and other quantitative methods in health policy (1 session of approximately 15 students and 4 faculty)

- [6] GUEST LECTURER  
Arizona State University, Department of Industrial Engineering  
ASU 101-FSE: The ASU Experience (for Engineers) (3 sessions of 19 students)

2008  
Tempe, AZ
- [7] TEACHING INTERN  
Arizona State University, Department of Industrial Engineering  
IEE598/498: Operations Research in Hospitals (2 sessions of 12 students)

2008  
Tempe, AZ
- [8] SENIOR DESIGN PROJECT MENTOR  
Arizona State University, Department of Industrial Engineering  
IEE490: Project in Design/Development (2 groups of 4 students)

2007  
Tempe, AZ
- [9] GUEST INSTRUCTOR  
Banner Health, Department of Management Engineering  
Six Sigma Training: Queuing Theory (1 session of 25 students)

2007  
Phoenix, AZ
- [10] GUEST SPEAKER  
Healthcare Information Management and Systems Society  
Title: The Science of Throughput (1 session of approximately 25 healthcare administrators and clinicians)

2007  
Web Seminar

## RESEARCH PROJECTS

- IMPLEMENTING IMPROVED SUPPORT FOR READINESS DRIVERS  
RAND Corporation, National Defense Research Institute  
Sponsor: Office of Secretary of Defense  
Principal Investigators: James R. Broyles, Anthony DeCicco

2018-2019
- USING DATA ANALYTICS FOR PRESCRIPTIVE AND PROACTIVE ARMY SUSTAINMENT  
RAND Corporation, Arroyo Center  
Sponsor: U.S. Army G-4  
Principal Investigators: Kenneth Girardini, James R. Broyles

2018-2019
- AUTHORIZED STOCKAGE LIST STANDARDIZATION  
RAND Corporation, Arroyo Center  
Sponsor: U.S. Army G-4  
Principal Investigators: Kenneth Girardini

2017-2018

CBP WORKFORCE STAFFING MODELS RAND Corporation, Homeland Security Operations and Analysis Center Sponsor: Customs and Border Protection Principal Investigators: James R. Broyles	2017-2018
OCIE ALTERNATIVE DISTRIBUTION CONCEPT IMPLEMENTATION PROJECT RAND Corporation, Arroyo Center Sponsor: US Army Materiel Command Principal Investigators: James R. Broyles, Bryan Boling	2016-2017
METHODS TO EVALUATE CHANGES TO TRAINING RAND Corporation, Project Air Force Sponsor: US Air Force, Air Education and Training Command Principal Investigators: Lisa Harrington, Kathleen Reedy	2016-2017
IMPROVING SUPPORT FOR WEAPON SYSTEM READINESS DRIVERS RAND Corporation, National Security Research Division Sponsor: Office of the Secretary of Defense Principal Investigators: Marc Robbins	2016-2017
ALIGNING FULL-TIME SUPPORT TO ACHIEVE DESIRED RESERVE COMPONENT READINESS LEVELS RAND Corporation, Arroyo Center Sponsor: US Headquarters Department of the Army G-8 Principal Investigators: Stephen Dalzell, Jennifer Kavanagh	2016-2017
REVIEW OF THE U.S. ARMY'S SUITABILITY FITNESS AND HOMELAND SECURITY PERSONNEL DIRECTIVE-12 SCREENING PROGRAMS RAND Corporation, Arroyo Center Sponsor: US Headquarters Department of the Army G-1 Principal Investigators: John Bordeaux, Radha Iyengar	2015-2016
ANALYZING THE EFFECT OF GCSS-A FORECASTING AND ERP SOLUTION EXCESS MANAGEMENT PROCESSES ON THE ARMY'S SUPPLY POSTURE RAND Corporation, Arroyo Center Sponsor: US Army Materiel Command Principal Investigators: Kenneth Girardini, James R. Broyles	2015-2016
ALTERNATIVE ORGANIZATIONAL CLOTHING AND INDIVIDUAL EQUIPMENT DISTRIBUTION RAND Corporation, Arroyo Center Sponsor: US Army Materiel Command Principal Investigators: James R. Broyles, Elvira N. Loredó	2015-2016



VETERANS ACCESS, CHOICE AND ACCOUNTABILITY ACT ASSESSMENT B: ESTIMATING SUPPLY 2014-2015  
RAND Corporation, RAND Health

Sponsor: Centers for Medicare and Medicaid Services; MITRE Corporation

Principal Investigators: Carrie Farmer, Robin Weinick, Michael Greenberg, Jeanne Ringel,  
Heather Krull, Christine Eibner, Peter Hussey, Susan Hosek

MAINTAINING DEPLOYMENT CLINICAL PROFICIENCY DURING PEACETIME 2014-2016  
RAND Corporation, Arroyo Center

Sponsor: Assistant Secretary of the Army for Manpower and Reserve Affairs; The Office  
of the Surgeon General

Principal Investigators: Edward W. Chan, Heather Krull

ANALYSIS TO SUPPORT FIELDING OF GLOBAL COMBAT SUPPORT SYSTEM— ARMY 2014-2016  
RAND Corporation, Arroyo Center

Sponsor: US Headquarters Department of the Army G-4

Principal Investigator: Kenneth Girardini

IMPLEMENTING AN ALTERNATIVE OCIE DISTRIBUTION SYSTEM 2014-2015  
RAND Corporation, Arroyo Center

Sponsor: US Army Materiel Command

Principal Investigators: Elvira N. Loreda, James R. Broyles

LEVERAGING AND EXTENDING THE ARMY'S LOGISTICS ERPs 2014-2015  
RAND Corporation, Arroyo Center

Sponsor: US Army

Principal Investigator: Kenneth Girardini

DETERMINING ALTERNATIVE DISTRIBUTION FOR ARMY ORGANIZATION CLOTHING AND INDIVIDUAL  
EQUIPMENT 2013-2014

RAND Corporation, Arroyo Center

Sponsor: US Army

Principal Investigators: Elvira N. Loreda, James R. Broyles

ERP DEVELOPMENT AND METRICS FOR LOGISTICS ERP 2013-2014  
RAND Corporation, Arroyo Center

Sponsor: US Army

Principal Investigator: Kenneth Girardini

EVALUATING THE EFFECTIVENESS OF NEW JERSEY HOSPITAL OPERATIONAL IMPROVEMENT EFFORTS  
2013-2014

RAND Corporation, RAND Health

Sponsor: New Jersey Hospital Association

Principal Investigators: Marge Pearson, Jack Needleman

INTEGRATED DISABILITY EVALUATION CASELOAD PROJECTION 2012-2013  
RAND Corporation, Arroyo Center  
Sponsor: US Army  
Principal Investigator: Heather Krull

UNDERSTANDING ARMY CASELOADS AND STAFFING FOR THE INTEGRATED DISABILITY EVALUATION SYSTEM 2012-2013  
RAND Corporation, Arroyo Center  
Sponsor: Office of the Surgeon General/U.S. Army Medical Command, Deputy Chief of Staff, G-1, U.S. Army  
Principal Investigator: Susan D. Hosek

IMPROVING THE SOLDIER DISABILITY RATING PROCESS 2012  
RAND Corporation, National Security Research Division, National Defense Research Institute  
Sponsor: RAND Corporation (internal research)  
Principal Investigator: Heather M. Krull

MAXIMIZING COST AVOIDANCE OF A CONUS OCIE REPAIR SYSTEM 2011-2013  
RAND Corporation, Arroyo Center  
Sponsor: Tank and Automotive Command Life Cycle Management Command Integrated Logistics Support Center  
Principal Investigators: James R. Broyles, Elvira N. Loreda

IDENTIFYING EFFICIENCIES IN OCIE INVENTORY MANAGEMENT FOR REGIONAL WAREHOUSES 2011-2012  
RAND Corporation, Arroyo Center  
Sponsor: Tank and Automotive Command Life Cycle Management Command Integrated Logistics Support Center  
Principal Investigators: James R. Broyles, Carol Fan

IMPROVING ARMY END-TO-END SUPPLIER CHAIN MEASUREMENT AND PERFORMANCE 2011-2012  
RAND Corporation, Arroyo Center  
Sponsor: Assistant Secretary of the Army for Acquisition, Logistics, and Technology; Deputy Chief of Staff, G-4  
Principal Investigator: Yun Kang

SIMULATING THE EFFECTS OF THE AFFORDABLE CARE ACT ON HEALTH INSURANCE COVERAGE 2011-2012  
RAND Corporation, RAND Health  
Sponsor: U.S. Department of Labor, Assistant Secretary for Planning and Evaluation

Principal Investigator: Christine Eibner

IMPROVING INVENTORY MANAGEMENT OF OCIE AT SIERRA ARMY DEPOT 2010-2011  
RAND Corporation, Arroyo Center  
Sponsor: Army Integrated Logistics Support Center, TACOM LCMC  
Principal Investigators: Carol Fan, Elvira Loredo

ASSESSING THE EFFECTIVENESS OF A SIMULATOR TRAINED CATARACT SURGERY DELIVERY METHOD 2010-2011  
RAND Corporation, RAND Health  
Sponsor: Help Me See  
Principal Investigator: Peter J. Glick

REDUCING ARMY TRANSPORTATION COST THROUGH EFFECTIVE FORWARD POSITIONING 2010-2011  
RAND Corporation, Arroyo Center  
Principal Investigator: Kenneth Girardini

MANAGING SUPPLIER RELATIONSHIP THROUGH DRAW DOWN 2010-2011  
RAND Corporation, Arroyo Center  
Sponsor: Army Material Command, Army G-4  
Principal Investigators: Edward G. Keating

BRIDGING THE GAP: PROTOTYPE TOOLS TO SUPPORT LOCAL DISASTER PREPAREDNESS, PLANNING, AND COLLABORATION 2009-2011  
RAND Corporation, Center for Military Health and Policy Research  
Sponsor: Department of Defense Office of the Assistant Secretary for Health Affairs  
Principal Investigators: Melinda Moore, Michael A. Wermuth

ORGANIZATIONAL CLOTHING AND INDIVIDUAL EQUIPMENT (OCIE) 2009-2010  
RAND Corporation, Arroyo Center  
Sponsor: Army G-4  
Principal Investigators: Carol E. Fan, Elvira Loredo

MODELING THE LABORATORY RESPONSE NETWORK 2009-2010  
RAND Corporation, RAND Health  
Sponsors: Association of Public Health Laboratories, Centers for Disease Control and Prevention  
Principal Investigator: Stuart Olmsted

COMPARE: PROVIDER MODULE ON BUNDLED PAYMENTS 2009-2010  
RAND Corporation, RAND Health

DOOR-TO-DOC 2005-2009  
Arizona State University, Department of Industrial Engineering  
Sponsor: The Agency for Healthcare Research and Quality (AHRQ)  
Principal Investigators: Twila L. Burdick, Jeffery K. Cochran

UNDERGRADUATE RESEARCH 2004-2005  
Arizona State University, Department of Industrial Engineering

## SERVICE

### *RAND CORPORATION SERVICE*

RAND REPORT REVIEWER 2009-present  
RAND CONFERENCE RECRUITER 2012, 2013, 2015  
OPERATIONS RESEARCH APPLICANT REVIEWER 2012-2016

### *PEER REVIEWED JOURNAL REFEREEING*

Annals of Operations Research  
European Journal of Operational Research  
Foundations of Computing and Decision Sciences  
Health Care Management Science  
International Journal of Industrial and Systems Engineering  
International Journal of Production Economics  
Journal of the Operational Research Society

## AWARDS AND HONORS

Outstanding Graduate Award 2009  
Arizona State University, Arizona State Alumni Association Tempe, AZ

Gilbreth Memorial Fellowship 2007-2008, 2008-2009  
The Institute of Industrial Engineers (IIE) Norcross, GA

Fulton Fellow 2005-2007  
Arizona State University, Fulton School of Engineering Tempe, AZ  
Fellowship Program for Outstanding Ph.D. Students

Excellence in Leadership Award 2004, 2005  
Arizona State University, Fulton School of Engineering Tempe, AZ

**PROFESSIONAL MEMBERSHIPS**

The Institute for Operations Research and the Management Sciences (INFORMS)  
Omega Rho, INFORMS Honors Society  
The Institute of Industrial Engineers (IIE)  
Alpha Pi Mu, Industrial Engineering Honors Society