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## Department of Industrial and Systems Engineering

### Faculty Background, Affiliations and Honors

- J. T. Black, Professor Emeritus, Ph.D., P.E.
- Robert “Bob” L. Bulfin, Technology Management Professor, Ph.D.
- Gerard “Jerry” A. Davis, Assistant Professor, Ph.D., C.P.E., C.S.P.
- John L. Evans, Associate Professor, Ph.D.
- Kevin R. Gue, Associate Professor, Ph.D.
- Emmett J. Lodree, Assistant Professor, Ph.D.
- Saeed Maghsoodloo, Professor, Ph.D., P.E.
- Chan S. Park, Ginn Distinguished Professor, Ph.D., P.E.
- Lu Ann Sims, Instructor and Academic Advisor, M.S.
- Alice E. Smith, Professor and Chair, Ph.D., P.E.
- Jeffrey “Jeff” S. Smith, Professor, Ph.D.
- Robert “Rob” E. Thomas, Professor, Ph.D., P.E., C.P.E.
- Jorge F. Valenzuela, Associate Professor, Ph.D.
- Levent Yilmaz, Associate Professor, Ph.D.

### Alumni Council Members

- Andrew T. Fischer (Chair)
- Marenda C. Caldwell, C.P.E.
- Kathryn L. Gardner Caspar
- Thomas C. Channell, P.E.
- Adam Farmer
- Gina Edkins Gloski
- Gary R. Godfrey
- David R. Jones
- Elon Maddox
- Leon McGinnis, Ph.D., P.E.
- Rick Reynolds, M.B.A., P.E.
- James T. Treharne, Ph.D.

## Archival Scholarly Publications

- Books and Book Chapters
- Journal Articles
- Refereed Conference Proceedings

## Sponsored Research Projects

- Alabama Cooperative Extension System - Agricultural Experiment Station
- Air Force Research Laboratory
- College of Engineering
- Continental AG
- Electronics and Telecommunications Research Institute - Korea
- Gui Technologies
- Horneck Electronics
- Mack-Blackwell Transportation Center
- Missile Defense Agency
- National Aeronautics and Space Administration (NASA)
- National Institute for Occupational Safety and Health (NIOSH)
- National Science Foundation
- Rockwell Automation
- Office of Naval Research
- Siemens
- Tripod Inc
- Technology Transfer

## Graduate Student Degrees

- Ph.D. Dissertations
- M.S. Theses
DEPARTMENT OF
Industrial and Systems Engineering
Samuel Ginn College of Engineering

- Offers four degrees – BISE, MISE, MS and PhD
- Dual degree MBA/MISE program
- Degree granting since 1932
- Outreach via DVD / internet available for all graduate degrees
- Over 4000 living alumni
- 200 Undergraduates, 100 MS/MISE students, 50 PhD students
- Ranked top 25% of programs by latest U.S. News & World Report
- New (2007) automotive manufacturing systems minor for ISE and ME students
- New (2009) automotive manufacturing systems graduate certificate
- Partner with University of Alabama – Birmingham in federally funded (CDC / NIOSH) Deep South Center for Occupational Safety and Ergonomics
- Over $1.5 million annual research expenditures with sponsorship from NSF, CDC / NIOSH, ONR, NASA, Federal Highway Administration, U.S. Air Force Research Laboratory, Missile Defense Agency and the many corporations and government organizations associated with the NSF I/U CRC Center for Advanced Vehicle Electronics (CAVE)
- Coursework in information technologies, simulation, quality control, lean manufacturing, operations research, manufacturing processes, electronics manufacturing, financial engineering, logistics and scheduling, reliability, probability and statistics, decision analysis, human factors, ergonomics, industrial hygiene, safety
- High achieving alumni including current or past:
  - CEO of Accenture
  - CEO of Gulf Power
  - CEO of Southern Nuclear
  - CEO of Pacific Bell
  - President, Honeywell Sensing & Control
  - CFO of Mirant Corp
  - COO of Apple Computer
  - VP and CIO of Verizon
  - VP of Northrop Grumman
  - Director of U. S. Army Aviation & Missile Control
  - Director of Safety, Johnson & Johnson
  - CEO of COLSA
  - Founder and Chairman, Frontier Technology

For more information visit eng.auburn.edu/ise
Faculty Background, Affiliations and Honors

J T. Black, Professor Emeritus, Ph.D., P.E.

Ph.D., University of Illinois-Urbana, 1969

Research in materials processing/metal cutting theory and practice; manufacturing systems design and engineering; and linked-cell manufacturing systems

- Fellow, IIE
- Fellow, SME
- Fellow, ASME
- Founding Editor-in-Chief, Journal of Manufacturing Processes
- Emeritus Editor-in-Chief, Journal of Manufacturing Systems

Robert “Bob” L. Bulfin, Technology Management Professor, Ph.D.

Ph.D., Georgia Institute of Technology, 1975

Research in developing solution techniques which can be applied to problems in the real world. The work has consisted of defining problems, developing models, and determining solution procedures for these models. Some specific applications include allocating fuels in copper production, determining the best use of safety funds, and scheduling in a variety of situations

Gerard “Jerry” A. Davis, Assistant Professor, Ph.D., C.P.E., C.S.P.

Ph.D., Auburn University, 2001

Research in occupational safety and ergonomics; manpower, staffing and productivity issues associated with the labor force

- HFES: Education Technical Group (ETG)
- HFES: Safety Technical Group (STG)
- ASSE national committee evaluating doctoral level OSH curriculums and research opportunities in the US. (Invited)
John L. Evans, Associate Professor, Ph.D.

Ph.D., University of Alabama, Huntsville, 1991

Research in investigating next generation electronics packaging and manufacturing technologies needed for the advancement of the electronics industry and developing an automotive engineering education program for the expanding southeastern U.S. manufacturing base

- SMTA/CAVE - Conference Chair - Harsh Environment Electronics - Orlando, FL - August 2008
- SMTA - Technical Committee - Since 2001
- Alabama Automotive Manufacturing Association (AAMA) - Workforce Development Committee
- SMTA/CAVE - Conference Chair - Harsh Environment Electronics - Indianapolis, IN - July 2007
- SMTA - Track Chairmen - SMTA International - Harsh Environment Sessions - Orlando - October 2007

Kevin R. Gue, Associate Professor, Ph.D.

Ph.D., Georgia Institute of Technology, 1995

Research in logistics modeling and optimization, including distribution, transportation, warehousing and material handling

- Industrial & Systems Engineering Professor of the Year, 2008. Past President, College - Industry Council on Material Handling Education
- Chair, Facility Logistics Special Interest Group, Transportation Science & Logistics Society, INFORMS
- Co-Editor of a special issue of IIE Transactions on Facility Logistics
- Associate Editor, Naval Research Logistics
- Cluster Chair, Transportation Science & Logistics Society, INFORMS National Meeting, 2007
- Best Paper in Material Handling Award (2006-2007), Material Handling Industry of America; for “Improving the Unit-Load Warehouse” with Russell D. Meller, 2008
- Best Paper in Facility Logistics Track, Industrial Engineering Research Conference, 2008; for “Travel Models for Warehouses with Task Interleaving” with Russell D. Meller and Letitia M. Pohl
Emmett J. Lodree, Assistant Professor, Ph.D.

Ph.D., University of Missouri-Columbia, 2001

Research in operations research, production and inventory control theory, reliability and maintenance, scheduling theory and transportation logistics


Saeed Maghsoodloo, Professor, Ph.D., P.E.

Ph.D., Auburn University, 1968

Research in statistical quality control, Taguchi methods and multivariate analysis

• Associate Editor, IIE Transactions

Chan S. Park, Ginn Distinguished Professor, Ph.D., P.E.

Ph.D., Georgia Institute of Technology, 1977

Research in pricing transmission congestions (power economics and energy modeling), real options (strategic investment decisions under uncertainty) and financial engineering

• Fellow, IIE

• Emeritus Editor-in-Chief, The Engineering Economist

• Wellington Award Committee, Chair, Engineering Economy Division, Institute of Industrial Engineers
Lu Ann Sims, Instructor and Academic Advisor

M.S. Georgia Institute of Technology, 1978

Research in engineering education
• Program Evaluator, ABET
• Undergraduate Academic Advisor
• Faculty Advisor, IIE

Alice E. Smith, Professor and Chair, Ph.D., P.E.

Ph.D., Missouri University of Science and Technology, 1991

Research in the modeling and optimization of complex systems with emphasis on methods inspired by nature
• Fellow, IIE
• Society of Women Engineers National Upward Mobility Award Judge (2007, 2008)
• IEEE Evolutionary Computation Technical Committee (2007-08)
• Editorial Board, Computers & Operations Research (Elsevier), 2005-present
• Associate Editor, IEEE Transactions on Evolutionary Computation (IEEE), 1998-present
• Design and Manufacturing Editorial Board, IIE Transactions (IIE), 1996-2008
• Associate Editor, INFORMS Journal on Computing (INFORMS), 1995-present
• American Society for Engineering Education (ASEE): Zone II Best Paper Award 2007
• The Seventh Metaheuristics International Conference (MIC 2007) (International Program Committee). Montreal
Jeffrey “Jeff” S. Smith, Professor, Ph.D.

Ph.D., Penn State University, 1992
Research in discrete event simulation and manufacturing systems design and analysis
• College-Industry Council on Material Handling Education - Vice President
• 2008 Track Coordinator, IERC
• 2007-08 Session Chair, Winter Simulation Conference
• 2007 IERC Session Chair
• 2007 IERC Track Coordinator
• 2007 INFORMS National Meeting Session Chair

Robert “Rob” E. Thomas, Professor, Ph.D., P.E., C.P.E.

Ph.D., Texas A & M University, 1988
Research in general occupational safety and ergonomics, occupational biomechanics, human factors engineering, workplace and work area design
• Senior Member and participant of the American Industrial Hygiene Association
• Co-Chair for Professional Development Symposium: Making the Business Case of Ergonomics at the American Industrial Hygiene Conference and Exhibition (AIHce 08), 1 June, 2008, Minneapolis, MN, Attended by approximately 70 occupational safety and health professionals
• Senior Member and participant of the American Industrial Hygiene Association Ergonomics Committee (elected to the special Steering Group)

Jorge F. Valenzuela, Associate Professor, Ph.D.

Ph.D., University of Pittsburgh, 2000
Research in stochastic modeling and optimization, both theory and applications; research involves stochastic models for the evaluation of production costs and optimization of electric power generation
• Chair of INFORMS Section on Energy, Natural Resources, and the Environment (2006-2008)
• Session chair, INFORMS 2008
• Chair Combined Colloquia, INFORMS 2007
• Session chair, INFORMS 2007
• Session chair, IERC 2007
Levent Yilmaz, Associate Professor, Ph.D.
Joint Appointment with Computer Science and Software Engineering

Ph.D., Virginia Tech, 2002

Modeling and simulation, agent-directed simulation, complex adaptive systems, systems modeling for science and innovation policy, computational modeling of creative scientific discovery systems, software modeling and design

• Editor-in-Chief of Simulation: Transactions of the Society for Modeling and Simulation International (2008-present)
• Editorial Board Member of the International Journal of Simulation and Process Modeling (2007-present).
• Editorial Board Member of the Simulation & Gaming Journal (2008-present).
• Editorial Board Member of the International Journal of Engineering Education (2007-present)
• Member of the Board-of-Directors of the Society for Modeling and Simulation International (2007-2008)
• Advisory Board Member of the International Modeling & Simulation Body of Knowledge Initiative (2008-present)
• Advisor to Workforce Development Committee of the Alabama Modeling and Simulation Council (2007-present).
• Program Co-chair, 2007 Summer Computer Simulation Conference, July 15-18, 2007, San Diego, CA, USA
• Founding organizer and Program chair, Agent-Directed Simulation Symposium Series (2007, 2008) of the Spring Simulation Multiconference (SpringSim’08)
• Publications Chair, the 46th ACM Southeast Conference, March 28-29, 2008. Auburn, AL
**Affiliate Faculty**

Nathan Dorris, Ph.D., C.P.E.  
Dorris & Associates International  
Woojin Park, Ph.D.  
Federal Government of the Republic of Korea  
Robert Rummer, Ph.D., C.P.E.  
U.S.D.A. Forest Service  
Chip Wade, Ph.D., C.P.E.  
Applied Biomechanics and Ergonomics Inc.

**Visiting Scholars**

Dr. Sohier Baioumy  
Benha University, Egypt  
Dr. Sung Ho Choi  
Kangnung University, Korea  
Dr. Edgardo Escalante  
Monterrey Tech University, Mexico  
Dr. Un Gi Joo  
Sun Moon University, Korea  
Dr. Soroor Al-Khafiji  
University of Technology, Iraq  
Mr. Tom M. A. Marechal  
Eindhoven University of Technology, The Netherlands  
Dr. Marc Schleyer  
Karlsruhe Institute of Technology, Germany
ALUMNI COUNCIL MEMBERS

Andrew T. Fischer (Chair)
Corporate Safety and Environmental Director
Hager Company
Montgomery, AL
BIE, 1993; MIE, 1994

Marenda C. Caldwell, C.P.E.
United Parcel Service / Corporate International Retail Services
Atlanta, GA
Montgomery, AL
BIE, 1992

Kathryn L. Gardner Caspar
Marketing Product Manager
Cooper Lighting
Peachtree City, GA
BIE, 2001

Thomas C. Channell, P.E.
Engineer
U.S. Army Aviation and Missile Command
Madison, AL
BIE, 1991; MBA, 1999; MISE, 2006
ALUMNI COUNCIL MEMBERS

Adam Farmer
Logistics Engineering Manager
Simmons Bedding Company
Mableton, GA
BISE, 2002; MS, 2004

Gina Edkins Gloski
Principal
Semiconductor Operations Consulting
Shirley, MA
BIE, 1982

Gary R. Godfrey
Partner
Accenture
Atlanta, GA
BIE, 1986

David R. Jones
Manager Material Control – Supply Chain
American Cast Iron Pipe Company
Birmingham, AL
BIE, 1991
ALUMNI COUNCIL MEMBERS

Elon Maddox

Lead Financial Analyst
AT&T
Birmingham, AL
BIE, 1973; MIE, 1974

Leon McGinnis, Ph.D., P.E.

Eugene C. Gwaltney Professor of Manufacturing Systems
School of Industrial and Systems Engineering
Georgia Tech
Atlanta, GA
BIE, 1970

Rick Reynolds, M.B.A., P.E.

Principal
Vital X Consulting Group
Auburn, AL
BIE, 1988

James T. Treharne, Ph.D.

Colonel (Retired)
U.S. Army
Deputy Division Chief, Operational Capability Assessments
Center for Army Analysis
Fort Belvoir, VA
MSIE, 1991; PhD (ISE) 1999
Books and Book Chapters


Bold type denotes faculty of the Department of Industrial and Systems Engineering at Auburn University
Journal Articles


**Bold type** denotes faculty of the Department of Industrial and Systems Engineering at Auburn University


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Refereed Conference Proceedings


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**Sponsored Research Projects**

**Alabama Cooperative Extension System - Agricultural Experiment Station**

Emmett J. Lodree and Norbert Wilson, “Improving the Supply Chain Management of Alabama Turf Grass Producers.” ($50,000). Co-PIs, Deacue Fields and David Han

**Air Force Research Laboratory**

Levent Yilmaz, co-PI: Alvin Lim. “Insertion of Multiresolution Simulation Technology into a Federated Simulation Infrastructure.” ($121,647).

**College of Engineering**

Gerard A. Davis, “COE Safety Project.” ($55,000)

**Continental AG**

Jeffrey S. Smith and John L. Evans, “Simulation Modeling and Analysis Support,” ($93,000)

**Electronics and Telecommunications Research Institute - Korea**


**Gul Technologies**

John L. Evans, “Automotive Substrate Technology.” ($30,000)

**Henkel Electronics**


**Mack-Blackwell Transportation Center**

Kevin R. Gue, A Nationwide Maglev Train Network for Very High-Speed Freight Distribution, University of Arkansas, Co-PI, R. Meller ($100,000, $20,000 to AU)

**Missile Defense Agency**


**National Aeronautics and Space Administration (NASA)**

Alice E. Smith and Jeffrey S. Smith, “Academy of Aerospace Quality – Phase II,” ($230,890)

**National Institute for Occupational Safety and Health (NIOSH)**

Gerard A. Davis and Robert E. Thomas, NIOSH ERC Training Grant T42/ OH00843436-07; “Occupational Injury Prevention Research Training.” ($87,514)

Gerard A. Davis and Robert E. Thomas, NIOSH ERC Training Grant T42/ OH00843436-07; “Occupational Injury Prevention Research Training.” ($98,257)

Robert E. Thomas and Gerard A. Davis, NIOSH ERC Training Grant T42/OH008434-07; “Occupational Safety and Ergonomics Program.” ($197,020)

**Bold type** denotes faculty of the Department of Industrial and Systems Engineering at Auburn University
Robert E. Thomas and Gerard A. Davis. NIOSH ERC Training Grant T42/OH008434-07; “Occupational Safety and Ergonomics Program.” ($199,489)

Robert E. Thomas and Gerard A. Davis. NIOSH ERC Training Grant T42/OH008434-07; “Occupational Safety and Ergonomics Program.” ($203,725)

Robert E. Thomas and Gerard A. Davis. NIOSH ERC Training Grant T42/OH00843436-07; “Occupational Injury Prevention Research Training.” ($98,385)

**National Science Foundation (NSF)**


John L. Evans, “Advanced Capacitor Technology for Automotive Applications - NSF’s Center for Advanced Vehicle Electronics (CAVE).” ($75,000)


Kevin R. Gue, “Designing Distribution Centers for the Service Economy,” co-PI: R. Meller (Univ. Arkansas). ($400,000, approx. $170,000 to Auburn)


Chan Park and Jorge Valenzuela, “Pricing Transmission Congestion to Alleviate Stability Constraints in Bulk Power Planning,” with co-PI M. Halpin ($363,000).

Alice E. Smith and John L. Evans, “Next Generation of Manufacturing Engineers for the Automotive Sector,” with co-PI P. Jones (Mechanical Engineering), #DUE-0422361. ($400,000)

Alice E. Smith, “US-Turkey Workshop: on Women in Industrial Engineering Academia - U.S. and Middle East.” ($60,000)


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Jorge Valenzuela, “Research Experiences for Undergraduates,” supplement to grant # 0245650, ($6,000)

Jorge Valenzuela and Gerard A. Davis, “REU Site in Automotive Manufacturing Systems.” ($285,400)

Jorge Valenzuela and Gerard A. Davis, “U.S. – Korea: Planning Visit to Add an International Experience to REU.” ($13,651)

Levent Yilmaz [with B. Edwards, Co-PI], “Dynamics of Creativity and Innovation in Virtual Scientific Commons.” ($315,029)

Levent Yilmaz, “The Synergy of Conflict and Creativity in Open Source Software Development Communities.” ($76,450)

**Rockwell Automation**


**Office of Naval Research**


Kevin R. Gue, “Surge Operations for Distribution Centers.” ($137,084)

**Siemens**

John L. Evans, “Printed Circuit Board Testing for Harsh Environment Applications - Siemens VDO Automotive.” ($75,000)

**Tripod Inc**

John L. Evans, “Harsh Environment Substrate Technology.” ($60,000)

**Technology Transfer**

Levent Yilmaz and Trident Systems Inc., “Safe Test Boundary (STB) Technology- An Approach and Algorithms for Understanding the Indirect Impact of Change Between Two Large, Complex Software Source Code Baselines With the Goal to Greatly Reduce the Amount of Re-testing Required for the System Upgrades.” Received $841K in SBIR investment and generated $1.6 Million revenue. Listed in the Navy 2007 book, SBIR/STTR Success Stories in Small Business Innovation Research/Small Business Technology Transfer, as one of the top 50 technologies transferred.

**Bold type** denotes faculty of the Department of Industrial and Systems Engineering at Auburn University
Graduate Student Degrees

Ph.D. (Dissertations)

Huseyin Balci, “Valuation of Power Generation Investments in Deregulated Capacity Markets”
Advisor – Jorge Valenzuela
Currently IRP Analyst, Dominion Resources

Orhan Dengiz, “Maximizing Connectivity and Performance in Mobile Ad Hoc Networks Using Mobile Agents”
Advisor – Alice E. Smith
Currently Vice President, DnD Technical Solutions, Ankara, Turkey

Hyun Jin Han, “Estimating Project Volatility and Developing Decision Support System in Real Options Analysis”
Advisor – Chan S. Park
Currently Lt. Colonel, Army of Republic of Korea

Grady Holman, “Patient Handling: Restrictions & Conditions”
Advisor – Robert E. Thomas
Currently Assistant Professor of Industrial Engineering, University of Louisville

Ching Ying Huang “Comparing the Overlapping of Two Independent Confidence Intervals with a Single Confidence Interval for Two Normal Population Parameters”
Advisor – Saeed Maghsoodloo
Currently Instructor, Department of Business Administration, Chang Gung University, Taiwan

Bold type denotes faculty of the Department of Industrial and Systems Engineering at Auburn University
Pinar Kaymaz, “Electric Power Generation Expansion in Deregulated Markets”  
Advisor – **Jorge Valenzuela**  
Currently Senior Analyst, Entergy

Rani Muhdi, “The Development and Representation of Occupant Performance in Building Evacuation Modeling”  
Advisor – **Gerard A. Davis**  
Currently Assistant Professor of Engineering Management and Systems Engineering, Old Dominion University

Selda Taskin, “Supply Chain Planning for Hurricane Response with Information Updates”  
Advisor – **Emmett J. Lodree**  
Currently with ASELSAN, Ankara, Turkey

Haluk Yapicioglu, “Retail Spatial Design with a Racetrack Aisle Network Considering Revenue and Adjacencies”  
Advisor – **Alice E. Smith**  
Currently Post Doc, Department of Industrial and Systems Engineering, Auburn University

Advisor – **Jorge Valenzuela**  
Currently Assistant Professor, Kadir Has University, Istanbul, Turkey

Duoxing Zhang, “Real Options Evaluation of Financial Investment in Flexible Manufacturing Systems in the Automotive Industry”  
Advisor – **John L. Evans**  
Currently Project Manager, Business Development China, Schaeffler Group China

**M.S. (Theses)**

Veysel Dalkilic, “A Supply Chain Approach to Shelf Space Allocation”  
Advisor – **Jeffrey S. Smith**  
Currently IT Specialist, EnerjiSA, Istanbul, Turkey

Goran Ivanovic, “Aisle Designs for Unit-Load Warehouses with Multiple Pickup and Deposit Points”  
Advisor – **Kevin R. Gue**  
Currently Analyst, Knapp Logistics

Kyongsun Kim, “Group Versus Staggered Replacement Policy – Strategic Replacement Decisions”  
Advisor – **Chan S. Park**  
Currently Captain, Army of Republic of Korea

Joshua Ridenour, “Overmolded Substrate on Aluminum Metal Backing for Harsh Environment Applications”  
Advisor – **John L. Evans**  
Currently Engineer, Redstone Arsenal

**Bold type** denotes faculty of the Department of Industrial and Systems Engineering at Auburn University
2008 NSF Women in IE Academia Workshop participants (Ankara, Turkey)

2008 Alpha Pi Mu class