John Jackman
Industrial and Manufacturing Systems Engineering
Associate Professor

Educational Background

Pennsylvania State University, Ph.D., Industrial Engineering, 1986

Pennsylvania State University, M.E., Industrial Engineering, 1983

Rensselaer Polytechnic Institute, B.S., Chemistry, 1975

List of Academic Positions

Program Director, Division of Undergraduate Education, National Science Foundation, 5/27/2019 – 5/27/2023

Associate Professor, Iowa State University, 1993-present

Assistant Professor, Iowa State University, 1987-1993

Assistant Professor, Pennsylvania State University, 1986-1987

Other Professional Employment

Senior Industrial Engineer, Rockwell Collins Commercial Avionics, Cedar Rapids, IA., Summer 1996.

Summer appointment as Software Engineer, Systems Modeling Corporation, Pittsburgh, Pennsylvania, l988

Software Engineer, Systems Modeling Corp. State College, Pennsylvania, 1984-l987

Supervisor, Automated Analysis Group, Research & Development, Wyeth Labs, Inc., Radnor, Pennsylvania, 1981-1983

Research Chemist, Automated Analysis Group, Research & Development, Wyeth Labs, Inc., Radnor, Pennsylvania, 1976-1981

Materials Chemist, Nondestructive Evaluation, Reentry Systems Division, General Electric Corporation, Philadelphia, Pennsylvania, 1975-1976.

Honors, Recognitions, and Outstanding Achievements

NSF Director's Award for Superior Accomplishment, 2021

John L. Imhoff Global Excellence Award for Industrial Engineering Education, 2018, American Society of Engineering Education

Outstanding IE Professor, 2003, Engineering Student Council

A. D. Welliver Fellowship, 1995, Boeing

Outstanding IE Professor, 1995, Engineering Student Council

Patents

Jones, D., Brewer, M., Narasimhan, B., Jackman, J., Vaccine Delivery Devices, United States Patent, Patent No. 10,130,454 B2, Date of Patent: 11/20/2018

Clavijo, M., Brownfield, K., Jackman, J., Arruda, B., Tracheo-Bronchial Sampling Device,United States Patent Application, 11/5/2019.

Teaching

Undergraduate
  Manufacturing Systems Engineering
  Stochastic Modeling
  Simulation

Graduate
  Enterprise Modeling and Integration
  Requirements Engineering
  E-commerce Systems Engineering
  Simultaneous Engineering in Manufacturing Systems
  Geometric Modeling
  Simulation

Grants and Contracts

G. Kremer (PI), P. Kremer, J. Jackman, Rapid Damage Identification to Reduce Remanufacturing Costs, REMADE Institute, $300,000, 08/26/2020 – 8/25/2022.

M. J. Clavijo(PI), J. Jackman (Co-PI), Development and field validation of a tracheal-bronchial sampling device for detection of M. hyopneumonlae In naturally infected pigs, Iowa Pork Producers Association, 8/1/2018 – 7/31/2019, $12,000.

D. Jones (PI), J. Jackman, B. Narasimhan, Optimizing an immunocastration ear implant vaccine to prevent pain associated with bovine castration, USDA, 12/1/2017 – 10/30/2021, $177,448.

F. Peters (PI), M. Frank, C. Mackenzie, J. Jackman, Innovative Casting Technologies, Steel Founders Society of America, 1/1/17 – 12/31/21, $2,000,000.

C. Krejci (PI), C. Mackenzie, J. Jackman, G. Hu, Airplane Painting Capacity and Planning Tool For Boeing Analytics Research, Boeing Company, 9/30/15 – 10/17/16, $79408.

J. Jackman (PI), D. Peterson, REU Site: A National REU Site in Wind Energy Science, Engineering and Policy, NSF, EEC 1460984, 02/27/2015-2/26/2018, $365,845.

K. J. Min (PI), J. Jackman, Critical Life-Cycle Decision Making in Complex Engineering Projects for Engineering Economy Courses, NSF, DUE 1504912, 08/13/2015-08/12/2017, $250,000

M. Frank (PI), F. Peters, J. Jackman, M. Dorneich, Automated Manufacturability Analysis Software – "ANA": Early intervention to aid the conceptual design process and accelerate the digital path to manufacturing, DMDII 14-01-07, $2M, Aug 2015- August 2017

M. Frank, J. Jackman, F. Peters, P. Sarkar, V. Dayal, Innovative Offshore Vertical-Axis Wind Turbine Rotors, Department of Energy $4.1M ($1M to ISU), January 2012 –December 2016

J. McCalley, J. Jackman, P. Sarkar, L. Brasche, A New PhD Program in Wind Energy Science, Engineering and Policy, NSF, 1/1/2012 – 12/31/2017, $3,152,063

J. Jackman, S. Gilbert, M. Hagge, G. Starns, Problem Framing Skills in Engineering Problem

Solving, NSF, 9/1/2010- 8/31/2014, $400,000

C. Ogilvie, J. Danielson, H. Bender, D. Niederhauser, J. Jackman , Dissemination of ThinkSpace: an online delivery tool of authentic, complex problems to increase students' problem-solving skills, NSF, 10/1/2010-9/30/2012, $200,000

M. Frank, F. Peters, J. Jackman, V. Dayal, Advanced Manufacturing Innovation Initiative, Joint project with TPI Composites and Sandia National Laboratories, total funding by Department of Energy, Iowa Power Fund, TPI Composites at $6,300,000, ($1,053,000 to ISU via IA Power Fund), July 2009-August 2012

Z. Y. Guerra de Castillo, J. Jackman, Uncertainties In Scheduling Operations In Maritime Transportation Systems, SENACYT of Panama, 9/1/2009 – 8/31/2011, $95,590

L. Potter, J. Jackman, Integrating Professional Communication Skills into an Engineering Curriculum, Engineering Information Foundation, 7/1/2007 – 6/31/2008, $24,950

F. Peters, J. Jackman, M. Frank, Advanced Steel Castings, Department of Defense, collaborative project with University of Iowa, University of Northern Iowa, Steel Founders Society of America and Benet Laboratories, November 2006-April 2009, $1,050,000 ($250,000 to ISU)

K.J. Min, J. Jackman, Citizen-Based Assessment and Improvement of E-Government Services for Small and Medium-Sized Communities in Midwestern States, Sloan Foundation, 7/1/2005 – 6/30/2007, $45,000

J. Jackman, Internet-Based Technologies for Production Planning, Granting Agency: Proplanner Inc., The Center for Advanced Technology Development (CATD), 9/1/2002 – 7/31/2003, $20,998

S. Olafsson, S. Ryan, F. Peters, J. Jackman, An Active Learning Environment for Information Technology Across the Curriculum,: NSF, 1/1/2003 – 12/31/2003, $100,000

J. Jackman, F. Peters, S. Vardeman, Stochastic Process Control of Green Sand Mulling, John Deere Foundry Waterloo, CATD/ISU, 7/1/1998 – 2/28/1999, $60,000

J. Jackman, Event-Driven Fluid Filling and Leak Testing for Backhoe Assembly, John Deere-Dubuque, CATD/ISU, 6/30/1998 – 9/30/1998, $17,213

J. Jackman, General Motors Integrated Manufacturing Systems Lab, General Motors, 1/1/1990 – 12/31/1995, $125,000

J. Jackman, Off-Line Programming for Conformal Coating of Printed Circuit Boards, Rockwell International, 3/21/1994 – 9/30/1994, $37,560

J. Jackman, D. McBeth,: Packaging Line Productivity Study, Penford Products Company, 3/18/1994 – 8/15/1994, $10,500

J. Jackman, Computer-Aided Process Planning for Conformal Coating of Printed Circuit Board, Rockwell International, 2/21/1994 – 3/30/1994, $4,320

W. Kuo, J. Jackman, D. Gemmill, Manufacturing Fellows Program in Concurrent Engineering Design, U.S. Dept. of Education, Project No. P200-A101-73, July l99l-August l994, $300,315.

J. Jackman, Automated Tissue Culture Process, Solvay Animal Health, Inc., 1992-1993, $72,190.

J. Jackman, Conformal Coating Equipment Evaluation, Rockwell International CACD, 1993, $2000.

W. Kuo, H. T. David, J. Jackman, S. Vardeman, Functionality and Cost Engineering, NSF, DDM-9006390, June l990-November l992, $l47,350

J. Jackman, D. Gemmill, R. Liu, Concurrent Engineering for the Life Cycle Process, Iowa Center for Emerging Manufacturing Technology, 1991-1993, $537,270

J. Jackman, S. Vardeman, NSF Instrumentation and Laboratory Improvement: Quality in Manufacturing Laboratory, National Science Foundation, March 1990-August 1992, $94,700

J. Jackman, A Comparative Analysis for Facility Evaluation, Neumann Monson PC, 1991, $l0,000

J. Jackman, Simulation of Selective Binding," Brown Printing, Inc., 1990, , $l370

J. Jackman, Simulation of Roll-to-Roll Amorphous Silicon Solar Cell Manufacture, Iowa Thin Film Technologies, 1990-l99l, $7500

S. Vardeman, J. Jackman, Quality in Manufacturing Laboratory," Iowa State University Instructional Development Grant, 199l, $2060

J. Jackman, Feature Based System Specification," Engineering Research Institute, Iowa State University, l989-l990, $3500

J. Jackman, A Manufacturing Simulation Device for MAP Compatible Systems," Iowa State University, l989-l990, Principal Investigator, $2,500

J. Jackman, Computer Control Laboratory," National Science Foundation, l988-l990, $53,956.

D. Medeiros, J. Jackman, Visualization of Statistical Principles, Pennsylvania State University, l986-l987, Co-Principal Investigator, $4000

Chapters in Books (in print or accepted)

Mohammadzadeh, M., Dubey, P., Gunay, E. E., Jackman, J. K., Kremer, G. E., & Kremer, P.A. (2024). Deep Learning for Defect Detection in Inspection. In Technology Innovation for the Circular Economy. Editor Nabil Nasr, Scrivener Publishing, Wiley, ISBN: 978-1-394-21427-3.

Lechtenberg T., Gunay E., Chu CY., Kremer G., Kremer P., Jackman J. (2022) Development of an Ontology for Defect Classification in Remanufacturing. In: Sen Z., Oztemel E., Erden C. (eds) Recent Advances in Intelligent Manufacturing and Service Systems. Lecture Notes in Mechanical Engineering, pp. 21-33, Springer, Singapore. https://doi.org/10.1007/978-981-16-7164-7_3

J. Jackman, S. Ryan, S. Olafsson, S., & V. Dark, Meta-problem Spaces and Problem Structure, In D.H. Jonassen (Ed.), Learning to solve complex, scientific problems. Mahwah, NJ: Lawrence Erlbaum Associates (2007)

S. Ryan, S., J. Jackman, P. Kumsaikaew, V. Dark, & S. Olafsson, Use of Information in collaborative problem solving. In D.H. Jonassen (Ed.), Learning to solve complex, scientific problems. Mahwah, NJ: Lawrence Erlbaum Associates (2007)

J. Jackman, Information Network Applications, Handbook for Industrial Engineering, McGraw-

Hill, (2001)

Articles in Journals (in print or accepted)

Mohammadzadeh, M., Dubey, P., Gunay, E. E., Jackman, J. K., Okudan Kremer, G. E., & Kremer, P. A. (2024). Deep Learning for Defect Detection in Inspection. Technology Innovation for the Circular Economy: Recycling, Remanufacturing, Design, Systems Analysis and Logistics, 143-155.

Dubey, P., Günay, E.E., Jackman, J., Kremer, G.E., Kremer, P. (2023). Deep Learning-Powered Visual Inspection Using SSD Mobile Net V1 with FPN. In: Kim, KY., Monplaisir, L., Rickli, J. (eds) Flexible Automation and Intelligent Manufacturing: The Human-Data-Technology Nexus. FAIM 2022. Lecture Notes in Mechanical Engineering. Springer, Cham. https://doi.org/10.1007/978-3-031-17629-6_78

Dubey, P., Jackman, J., Kremer, G.E., Kremer, P. (2023). A Probabilistic Model to Estimate Automated and Manual Visual Inspection Errors. In: Kim, KY., Monplaisir, L., Rickli, J. (eds) Flexible Automation and Intelligent Manufacturing: The Human-Data-Technology Nexus. FAIM 2022. Lecture Notes in Mechanical Engineering. Springer, Cham. https://doi.org/10.1007/978-3-031-17629-6_72

Rama Srikar Mutyala, Kijung Park, Elif Elçin Günay, Gayeon Kim, Sharon Lau, John Jackman & Gül E. Okudan Kremer. Effect of FFF process parameters on mechanical strength of CFR-PEEK outputs. Int J Interact Des Manuf 16, 1385–1396 (2022). https://doi.org/10.1007/s12008-022-00944-8.

K. Jo Min & John Jackman (2022) Real Option-Based decision model for fuel saving devices in transportation vehicles under flexible design, The Engineering Economist, 67:1, 2-24, DOI: 10.1080/0013791X.2021.2017094.

K. Jo Min, Laura Lilienkamp, John Jackman & Chung-Hsiao Wang (2020) Supply contracts for critical and strategic materials of high volatility and their ramifications for supply chains, The Engineering Economist, 65:4, 266-287, DOI: 10.1080/0013791X.2020.1712508

R. G. Schaut, M. T. Brewer, J. M. Hostettera, K. Mendozaa, J. E. Vela-Ramirezb, S. M. Kelly, J. K. Jackman, G. Dell'Anna, J. M. Howard, B. Narasimhanb, W. Zhoug, D. E. Jones (2018) A single dose polyanhydride-based vaccine platform promotes and maintains anti-GnRH antibody titers, Vaccine, 36. 1016-1023.

R. Schaut, M. T. Brewer, K. Mendoza, J. Jackman, B. Narasimhan, D. E. Jones (2018) A polyanhydride-based implantable single dose vaccine platform for long-term immunity, Vaccine, 36, 1024-1025.

Hagge, M., Amin-Naseri, M., Jackman, J.; Guo, E., Gilbert, S., Starns, G., Faidley, L., Intelligent Tutoring System for Thermodynamic Phase Diagrams (2017), Advances in Engineering Education, 6(1).

H. Zhang and J. Jackman (2014) Feasibility of Automatic Detection of Surface Cracks in Wind Turbine Blades, Wind Engineering, 38(6), 575-586.

K. J. Min, J. Jackman and D. Gemmill, (2013) Assessment and Evaluation of Objectives and Outcomes for Continuous Improvement of an Industrial Engineering Program, International

Journal of Engineering Education, 29 (2), 520-532, 2013.

P.D. Antonenko, J. Jackman, P. Kumsaikaew, R.R. Marathe, D.S. Niederhauser, C.A. Ogilvie and S.M. Ryan, Understanding student pathways in context-rich problems. Education and Information Technologies, **16**, 323–342 (2011)

Z. Y. Guerra de Castillo, J. Jackman and S. Ólafsson, Stochastic Flow Shop Scheduling Model for the Panama Canal, J. of the Operational Research Society, **62**, 69–80, (2011)

P. Ball, H. Grierson, K.J. Min, J. Jackman and P. Patterson, Working on an Assignment with People You'll Never Meet! Case Study on Learning Operations Management in International Teams, International Journal of Engineering Education, **23**, 368-377 (2007)

P. Kumsaikaew, J. Jackman &V. Dark, Task Relevant Information in Engineering Problem Solving," Journal of Engineering Education, **95**, 227-239 (2006)

S.M. Ryan, J. Jackman, F. Peters, S. Olafsson and M. Huba, The Engineering Learning Portal for Problem Solving, The Engineering Economist, **49,** 1-19 (2004)

T.H. Yang and J. Jackman, A Shannon Sampling Approach to Form Error Estimation," Journal of Engineering Manufacture, **216 Part B**, 225-233 (2002)

T.H. Yang and J. Jackman, Form Error Estimation Using Spatial Statistics, Transactions of the ASME Journal of Manufacturing Science and Engineering, **122**, 262-272 (2000)

L. Schmidt and J. Jackman, Modeling Recirculating Conveyors with Blocking, European Journal of Operational Research, **124**, 422-436 (2000)

J. Jackman and D. Park, Probe Orientation for Coordinate Measuring Machine Systems Using Design Models, Robotics and Computer-Integrated Manufacturing, **14**, 229-236 (1998), https://doi.org/10.1016/S0736-5845(97)00031-8.

John Jackman (1998) Review of:"Modeling Techniques for Business Process Reengineering and Benchmarking"Guy Doumeingts and Jim Browne (eds) Chapman & Hall, 1997, IIE Transactions, 30:10, 987-988, DOI: 10.1080/07408179808966553

T.H. Yang and J. Jackman, A Probabilistic View of Problems in Form Error Estimation, Transactions of the ASME Journal of Manufacturing Science and Engineering, **119**, 375-382 (1997)

M.E. Johnson and J. Jackman, Interval Coverage in Multiclass Queues Using Batch Mean Estimates, Management Science, **42**, 1744-1752 (1996)

L. Schmidt and J. Jackman, Evaluating Assembly Sequences for Automated Assembly Systems, IIE Transactions, **27**, 23-31 (1995)

J. Jackman, R. Linn and D. Hyde, Petri Net Modeling of Relay Ladder Logic, J. of Design and Manufacturing, **5**, 143-151 (1995)

B. Choi, W. Kuo and J. Jackman, Petri Net Extensions for Modeling and Validating Manufacturing Systems, Int. J. Production Research, **32**, 1819-1835 (1994)

J. Jackman, J. Deng, H. Ahn, W. Kuo and S. Vardeman, A Compliance Measure for Alignment of Cylindrical Part Features, IIE Transactions, **26**, 2-10 (1994)

J. Jackman and M.E. Johnson, The Role of Queueing Network Models in Performance Evaluation of Manufacturing Systems, J. Operational Research Society, **44**, 797-807 (1993)

J. Jackman, W. Kuo and S. Vardeman, Stochastic Rendering of Geometric Forms in Design for Manufacturing, J. Design and Manufacturing, **1**, 57-66 (1991)

J. Jackman, Unit Load Size Determination Based on Economic Move Quantity, J. Operational Research Society, **42**, 703-711 (1991)

J. Caven and J. Jackman, An Icon-Based Approach to System Control Development, IEEE Transactions on Industrial Electronics, **37**, 259-264 (1990)

J. Jackman and M.E. Johnson, Sensitivity Analysis of Serial Transfer Lines Using Finite Perturbation Analysis, International Journal of System Science, **20**, 129-137 (1989)

M.E. Johnson and J. Jackman, Infinitesimal Perturbation Analysis: A Tool for Simulation, Journal of Operational Research Society, **40**, 243-254 (1989)

J. Jackman, J. and D.J. Medeiros, A Graphical Methodology for Simulating Local Area Networks, IEEE Transactions on Communications, **36**, 459-464 (1988)

V. D. Reif, W. M. Eickhoff, J. Jackman and N. J. DeAngelis, Automated Stability-Indicating High-Performance Liquid Chromatographic Assay for Ethinyl Estradiol and (Levo)norgestrel Tablets, Pharmaceutical Research, **4**, 54-58 (1987)

Conference Proceedings

Mohammadzadeh, M., Gunay, E. E., Jackman, J., Kremer, G. E., Kremer, P. A. (2024) Utilization of Data Augmentation Techniques in Automated Inspection Systems for Defect Detection in Metals with Limited Data, REMADE Circular Economy Tech Summit and Conference, Washington, D.C. on April 10-11, 2024.

Mohammadzadeh, M., Dubey, P., Gunay, E. E., Jackman, J., Kremer, G. E., Kremer, P. A. (2023) Deep Learning for Defect Detection in Inspection, Remade Circular Economy Tech Summit & Conference, Washington, D.C., March 20 - 21, 2023.

Min, K. J., & Jackman, J., & Zhao, Z. (2022, August), Work in Progress: Visual Learning and Teaching Aids for Abstract Concepts in Inventory Control towards Better Learning Outcomes Paper presented at 2022 ASEE Annual Conference & Exposition, Minneapolis, MN. https://peer.asee.org/41092

Zhao, Z., McCloskey, M., Sackpraseuth, A., Jackman, J., Min, K. (2020) Decision Support for Arctic Area Infrastructures under Changing Climate and Uncertainty, Proceedings of the 2020 IISE Annual Conference, November 1-3, 2020.

Zhao, Z., Jackman, J., Min, K. J. (2019), Engineering Economic Valuation of Ready-Made Design for Transportation Vehicles, The International New York Conference on Engineering and Technology (NY2019), November 15-17, 2019, Albany, New York.

Zhao, Z., Jackman, J., Min, K. J. (2019), Logistic Depot Planning under Repair and Maintenance Cost Uncertainties under Changing Climate, The International New York Conference on Engineering and Technology (NY2019), November 15-17, 2019, Albany, New York.

J. Min, J. Jackman and Z, Zhao, Work in Progress: Visual and Tactile Aids in Multidisciplinary Engineering for Better Learning Outcomes, Proceedings of the 2018 ASEE Annual Conference, Salt Lake City, UT, June 24-27, 2018.

J. Min, J. Jackman and M. Zugg, "Visualization aids for abstract concepts towards better learning outcomes," 2017 IEEE Frontiers in Education Conference (FIE), Indianapolis, IN, 2017, pp. 1-5.doi: 10.1109/FIE.2017.8190462

Li, X., Krejci, C., MacKenzie, C., Jackman, J., Hu, G., Hu, C., Graunke, A., Burnett, G., (2017), Capacity Planning and Production Scheduling for Aircraft Painting Operations, Proceedings of the IISE Annual Conference, May 20-23, 2017, Pittsburgh, PA.

Zhang, M., MacKenzie, C., Krejci, C., Jackman, J., Hu, G., Hu, C., Burnett, G., Graunke, A., (2017), Probabilistic methods for long-term demand forecasting for aviation production planning, Proceedings of the IISE Annual Conference, May 20-23, 2017, Pittsburgh, PA.

Chay, J., Jackman, J., Frank, M., Peters, F., (2017), A New Metric for Evaluating Machinability of a Design, Proceedings of the IISE Annual Conference, May 20-23, 2017, Pittsburgh, PA.

Min, K. J., Jackman, J., Zugg, M., (2017), Economic Decision Making for Projects under High Volatility, Proceedings of the IISE Annual Conference, May 20-23, 2017, Pittsburgh, PA.

Croghan, J., Jackman, J., Min, K. J., (2017) Estimation of Geometric Brownian Motion Parameters for Oil Price Analysis, Proceedings of the IISE Annual Conference, May 20-23, 2017, Pittsburgh, PA.

Min, K. J., Jackman, J., Zugg, M., (2016) Critical Life-Cycle Decision Making for Projects under Uncertainty, Proceedings of the 2016 ASEE Annual Conference, New Orleans, LA, June 26-29, 2016.

Hagge, M., Amin-Naseri, M., Gilbert, S., Jackman, J.; Guo, E., Starns, G., Faidley, L., (2015) Decision-based Learning for a Sophomore Level Thermodynamics Course, Proceedings of the 2015 ASEE Annual Conference, June 14 - 17, 2015, Seattle, Washington.

Min, K. J., Jackman, J., Chan, J. C.K., (2014) Visual Models for Abstract Concepts Towards Better Learning Outcomes and Self-Efficacy, Proceedings of the 2014 ASEE Annual Conference, Indianapolis, IN, June 15-18, 2014.

Jackman, J., Peters, F. (2014), Continuous Improvement through Surface Mapping, Proceedings of the 2014 Industrial and Systems Engineering Research Conference, May 31- June 3, 2014, Montreal.

Guo, E., Gilbert, S., Jackman, J., Starns, G., Hagge, M., Faidley, L., Amin-Naseri, M. (2014). StaticsTutor: Free Body Diagram Tutor for Problem Framing. In the Proceedings of the 12th International Conference on Intelligent Tutoring Systems, Honolulu, HI.

Amin-Naseri, M., Guo, E., Gilbert, S., Jackman, J., Hagge, M., Starns, G., Faidly, L., (2013). Authoring a Thermodynamics Cycle Tutor Using GIFT. Proceedings of the workshops at the 16th International Conference on Artificial Intelligence in Education AIED 2013, Memphis, USA.

Jackman J., Faidley, L. E., Hagge, M., Starns, G., Gilbert, S.B. (2013), What Contributes to

Problem Complexity in Engineering Problem Solving?, Proceedings of the 2013 Industrial and Systems Engineering Research Conference, A. Krishnamurthy and W.K.V. Chan, eds., May 18-22, 2013, San Juan Puerto Rico.

Jackman, J., Gilbert, S. B., Starns, G., Hagge, M., Faidley, L. E. (2013) Problem Framing Behavior in Statics and Thermodynamics. Proceedings of the 2013 ASEE Annual Conference, June 23 - 26, 2013 Atlanta, Georgia.

Zhang, H., & J. Jackman, A feasibility study of wind turbine blade surface crack detection using an optical inspection method, 2nd International Conference on Renewable Energy Research and Applications, Madrid, Spain, October 20-23, 2013.

Zhang, H., & J. Jackman, A Computer-based Inspection Method for Determining Surface Flaws of Wind Turbine Blades, International Conference on Future Technologies for Wind Energy, October 07-09, 2013, Laramie, Wyoming, USA.

W. Johanns, L. Schlangen, F. Peters M. Frank and J. Jackman, "Avoiding Waves in Longitudinal Blade Elements via Pre-Shearing of Unidirectional Fabrics," International Conference on Future Technologies for Wind Energy, October 07-09, 2013, Laramie, Wyoming.

Peters, F. and J. Jackman (2012) Surface Anomaly Mapper (SAM): What you don't know will hurt you! , Proceedings of the 2012 Steel Founders' Society of America – Technical and Operating Conference, Chicago, IL, 2012.

K. Jo Min, J. Jackman, Curriculum Continuous Improvement Process through Objectives and Outcomes, Industrial and Systems Engineering Research Conference 2012, Orlando, FL, May 19-23, 2012.

Z. Guerra de Castillo, J. Jackman, Uncertainty of Scheduling Operations in Maritime Transportation Systems, Industrial and Systems Engineering Research Conference 2012, Orlando, FL, May 19-23, 2012.

Niederhauser, D. S., Toy, S., Ogilvie, C., Karabulut, A., & Jackman, J. (2009, April). Scaffolding problem formulation in an online problem-based learning environment. Paper presented at the meeting of the American Educational Research Association, San Diego, CA.

Toy, S., Niederhauser, D. S., Jackman, J., Ogilvie, C., Ryan, S., and Karabulut, A. (2008). Effects of Scaffolding Problem Formulation Phase During Multifaceted Physics Problem-Solving. 30th Annual Meeting of the Cognitive Science Society, July 23-26, Washington, DC.

Min, K. J., Jackman, J. and Chen, C. K. (2008). International Student Team Project with a Global Supply Chain, Proceedings of the 2008 Industrial Engineering Research Conference, May 17-21,Vancouver, Canada

Von Busch, S. , Boonsuk, W., Jackman, J., Morris, M., and Peters, F. (2008) Analysis of Surface Anomaly Data. Proceedings of the 2008 Steel Founders' Society of America

Potter, L., Jackman, J., Min, K. J., and Search, M. (2008) Integrating Communication and Engineering Skills in an Industrial Engineering Curriculum Based on Outcome Assessment Results, Proceedings of the 2008 Industrial Engineering Research Conference, May 17-21,Vancouver, Canada.

Min, K. J., Jackman, J., Potter, L., and Search, M. (2008) A New Engineering Communications Course Based On A Professional Communications Process, Proceedings of 2008 ASEE Annual Conference & Exposition, June 22 - 25, Pittsburgh, PA.

Jackman, J., Ryan, S., Niederhauser, D., Ogilvie, C. (2008) Scaffolding To Improve Reasoning Skills In Problem Formulation, Proceedings of 2008 ASEE Annual Conference & Exposition, June 22 - 25, Pittsburgh, PA.

Ryan, S., Jackman, J., Marathe, R., Antonenko, P., Kumsaikaew, P. Neiderhauser, and Ogilvie, C., "Student Selection of Information Relevant to Solving Ill-Structured Engineering Economic Decision Problems," Proceedings of the ASEE Annual Conference, Honolulu, June 24-27, 2007 (named Best Paper in the Engineering Economy Division).

Niederhauser, D., Antonenko, P., Ryan, S., Jackman, J., Ogilvie, C., Marathe, R., & Kumsaikaew, P., "Solution Strategies of More and Less Successful Problem Solvers in an Online Problem-based Learning Environment", American Educational Research Association Annual Meeting, Chicago, IL, April 2007.

Min, Jackman, Patterson, Li, and Daniel, "US-Mexico Student Teams for a Global Supply Chain Course Project," Proceedings of ICEE Conference, Puerto Rico, July 2006 (Speaker: Min).

Ball, Cardenas-Barron, Chen, and Jackman , "A Multinational Student Team Project for Global Supply Chain Models," Industrial Engineering Research Conference, Orlando, Florida, May 2006 (Speaker: Min).

Abhinav, A.and J. Jackman (2005) Validation Model For Detecting Syntax And Semantic Errors In Geometric Dimensioning And Tolerancing Specifications, Proceedings of 10th Annual International Conference on Industrial Engineering Theory, Applications & Practice, December 4 - 7, 2005, Clearwater Beach, Florida.

Abhinav, A.and J. Jackman (2005) "Schema based validation model for Geometric Dimensioning and Tolerancing (GD&T) Syntax," Proceedings of the 6th Asia Pacific Industrial Engineering and Management Society, Manila, Philippines, December 4 - 7, 2005.

K. Jo Min, J. Jackman, P. Patterson, S., P. Kumsaikaew, J. Li, and S. Vuthipadadon, (2005) "Global Enterprise Perspective Initiative in a Production Systems Course," Proceedings of the 2005 American Society for Engineering Education Annual Conference, Portland Oregon.

J. Min, J. Jackman, S. Daniel, P. Kumsaikaew, J. Li, S. Vuthipadadon, P. Ball, B. Ion (2005) "Binational Student Teams for a Global Supply Chain Course Project," Proceedings of the Frontiers in Education Conference, Indianapolis, Indiana, October 19-22, 2005.

K. J. Min, S. Olafsson, J. Jackman, S. Daniel, P. Kumsaikaew, J. Li, S. Vuthipadadon, P. Ball, B. Ion (2005) "Global Perspectives in Curriculum Reform," Proceedings of the IIE Annual Research Conference, Atlanta, GA, May 14-18, 2005.

Sanni, A. and J. Jackman (2005) "Detecting Inconsistencies in Functional Software Requirements," Proceedings of the IIE Annual Research Conference, Atlanta, GA, May 14-18, 2005.

Jackman, J and S. Ólafsson , "Engineering Learning Portal: A Learning Management System for Decision Making," Proceedings of the Interservice/Industry Training, Simulation, and

Education Conference (I/ITSEC), November 2004.

Jackman, J., S. Ólafsson, F.E. Peters, S.M. Ryan, "Integrated Curriculum to Improve Engineering Problem Solving," Proceedings of the Industrial Engineering Research Conference, May 18-20, Houston, TX, 2004

Jackman, J., K. J. Min, S. Olafsson, and S. Ryan, "Internet-Based Public Policy Participation for Rural Community Citizens," Proceedings of the National Conference on Digital Government Research, page 450, Seattle, Washington, May 2004.

Ólafsson, S., K. Saunders, J. Jackman, F. Peters, S. Ryan, V. Dark, and M. Huba, "Implementation and Assessment of Industrial Engineering Curriculum Reform," Proceedings of the 2004 American Society for Engineering Education Annual Conference, June 20-23, Salt Lake City, UT, 2004

Olafsson, O., Huba, Mary, Jackman, J., Peters, F., and Ryan S., "Information Technology Based Active Learning: A Pilot Study for Engineering Economy," Proceedings of the 2003 American Society for Engineering Education Annual Conference, Nashville, TN., June 22-25, 2003.

Jackman, J., Olafsson, Peters, F., and Ryan S., Huba, M., "The Electronic Learning Portal: An Active Learning Environment for Information Technology Across the Curriculum," Proceedings of the Industrial Engineering Research Conference, Portland, OR., May 18-20, 2003.

Muller, Dan, Jackman, J., and Fitzwater, Charles, "A Simulation-Based Work Order Release Mechanism for a Flexible Manufacturing System," Proceedings, l990 Winter Simulation Conference, New Orleans, Louisiana, December l990.

Jackman, J. and Medeiros, D. J., "Modeling and Analysis of Ethernet Networks," Proceedings, 1984 Winter Simulation Conference, Dallas, Texas, November 1984

Technical Presentations

Lechtenberg T., Gunay E., Chu CY., Kremer G., Kremer P., Jackman J. (2021) Development of an Ontology for Defect Classification in Remanufacturing, IMSS21: 11TH International Symposium on Intelligent Manufacturing and Service Systems, Sakarya, Turkey, May 27-29, 2021.

Aravapalli, S., Gunay E., Dubey, P., Kremer G., Jackman, J. and Kremer, P. (2021) Automated Inspection Approach for Remanufacturing, IMSS21: 11TH International Symposium on Intelligent Manufacturing and Service Systems, Sakarya, Turkey, May 27-29, 2021.

J. Jackman, K. J. Min, M. Zugg, F. Niayeshpour, (2018), Teaching and Learning of Life-Cycle Economic Decisions on Complex Engineering Projects under a High Level of Uncertainties, IISE Annual Conference, May 19-22, 2018, Orlando, FL.

K. J. Min, J. Jackman, G.E. Okudan Kremer, F. Niayeshpour, Z. Zhao, (2018), Valuation of Design Changeability in Transportation Vehicles and Infrastructures under Uncertainties, IISE Annual Conference, May 19-22, 2018, Orlando, FL

K. J. Min, J. Jackman, C. MacKenzie, (2018), Innovative Teaching & Evaluation Methods in Engineering Economy, IISE Annual Conference, May 19-22, 2018, Orlando, FL

J. Jackman, Rapid Manufacturing of Metal and Composite Structures, NSF Workshop on Advanced Manufacturing Research for the Aerospace Industry, June 19-21, 2017, Arlington TX.

J. Jackman, Multi-echelon Health Monitoring of Advanced Manufacturing Systems, Danfoss Research Symposium, December 14, 2017, Ames, IA.

J. Jackman, Multi-echelon Health Monitoring of Advanced Manufacturing Systems, ISU – John Deere Mini Research Symposium on Advanced Manufacturing, August 3, 2017, Ames IA.

Jackman, J., Process Capability Modeling for Geometric Tolerances, 2015 Industrial and Systems Engineering Research Conference, May 30- June 2, 2015, Nashville, TN.

Jackman, J., Guo, E., Hagge, M., Amin-Naseri, M., Gilbert, S., Faidley, L., Starns, G. (2014). A Decision-Centric Intelligent Tutoring System for Problem Framing, 2014 Industrial and Systems Engineering Research Conference, May 31- June 3, 2014, Montreal.

Jackman J., Vardeman, S. Predicting Uncertainty in Surface Geometry, 2013 Industrial and Systems Engineering Research Conference, May 18-22, 2013, San Juan Puerto Rico.

K. Jo Min, J. Jackman, Curriculum Continuous Improvement Process through Objectives and Outcomes, Industrial and Systems Engineering Research Conference 2012, Orlando, FL, May 19-23, 2012.

Z. Guerra de Castillo, J. Jackman, Uncertainty of Scheduling Operations in Maritime Transportation Systems, , Industrial and Systems Engineering Research Conference 2012, Orlando, FL, May 19-23, 2012.

John Jackman, Mathew Hagge, Gloria Starns, Stephen Gilbert, Gregory Aist, Problem Framing Skills in Engineering Problem Solving, 2011 NSF Engineering Education Awardees Conference, Reston, VA, March 13-15, 2011.

John Jackman, Doug Gemmill, K. Jo Min, Objectives, Outcomes, and Continuous Improvement Process in a BSIE Curriculum, Industrial Engineering Research Conference 2011, Reno, NV, May 21-25, 2011.

Cara Dienes, John Jackman, Product Updates and Physician Learning in the PPI Supply Chain, Industrial Engineering Research Conference 2011, Reno, NV, May 21-25, 2011.

J. Jackman, C. Ogilvie, A Predictive Measure for Problem Complexity, Industrial Engineering Research Conference 2011, Reno, NV, May 21-25, 2011.

Cárdenas-Barrón, L. E., Min, K. J., Jackman, J., Patterson, P., Li, J., & Daniel, S. (2009). US-Mexico Student Teams for a Global Supply Chain Course Project. 39th Congreso De Investigación Y Desarrollo Del Tecnológico De Monterrey, 287-287, Monterrey, Mexico.

Dienes, C., Jackman, J. (2009) Modeling the Physician Preference Item Supply Chain, Decision Sciences Institute Annual Meeting, New Orleans, LA, November 16-18, 2009.

Dienes, C., Jackman, J. (2009) Unique Aspects of the Healthcare Supply Chain, INFORMS Annual Meeting, San Diego, CA, October 11-14, 2009.

Jackman, J., Chen, C., Cárdenas-Barrón, L. E., & Min, K. J. (2009) International Collaboration

Experiences for Global Supply Chain Student Projects, IERC 2009 Annual Conference, Miami, FL May 30-June 3, 2009.

Min, K. J., Jackman, J., Patterson, P., Li, J., Daniel, S., & Cárdenas-Barrón, L. E. (2006). US-Mexico Student Teams for a Global Supply Chain Course Project. 9th International Conference On Engineering Education. Puerto Rico.

Min, K. J., P. Ball, L. Cardenas-Barron, C. Chen, and J. Jackman, "A Global Supply Chain Project for International Student Teams, INFORMS Annual Meeting, Pittsburgh, November 2006 (Speaker: Min).

Min, K. J., Jackman, J. K., Gemmill D., and Patterson P., "Continuous Improvement Efforts for Objective Evaluation and Outcome Assessment of an Industrial Engineering Program," Best Assessment Processes VIII Symposium, Rose-Hulman Institute of Technology, 2006, (Speaker: Min).

Kumsaikaew, P. and Jackman, Jr., " Understanding Usage Patterns in Document Access," INFORMS, Denver, Colorado, October, 2004.

Jackman, J., "Robotic Control Using Sequential Function Charts," Proceedings of the 1996 SPIE Photonics Conference, Boston, Massachusetts.

Bishop, D. and Jackman, J., "A Bayesian Scheduling Approach for the Design Environment," Proceedings of 1995 4th Industrial Engineering Research Conference, Nashville, Tennessee, 1995.

Jackman, J. and Yang, T., "Characterization of Surface Profiles Using Discrete Measurement Systems," Proceedings 1994 NSF Design and Manufacturing Grantees Conference, Boston, Massachusetts, pp. 43-44, January 5-7, 1994.

Deng, J., Ahn, H., Srinivasan, M., Kuo, W., Jackman, J., and Vardeman, S., "Fit Metrics for Accelerated Life Testing," Proceedings of 1993 NSF Design and Manufacturing Systems Conference, Charlotte, North Carolina, pp. 473-477, January 1993.

Medeiros, D. J. and Jackman, J., "Queueing Behavior of an Ethernet Network," Proceedings, Ultratech Conference, Vol. 2, 137-148, Long Beach, California, September l986.

Outreach

Council on Undergraduate Research (CUR) Workshop, National Science Foundation — Understanding the Merit Review Process, Michelle Camacho, Susan Carson, Eric Sheppard, Michael Ferrara, Rebecca Rosenblatt, John Jackman, John Haddock, Bonnie Green, February 19, 2021.

Ilumoka, A., Jackman, J., Medina-Borja, A., Berger, E., Cardella, M., Wilson-Lopez, A., Camacho-Walter, M. (2020) NSF Engineering Education Funding: Tips for Appropriate Program Selection & Competitive Proposal Preparation, Workshop, Frontiers in Education 2020, October 21-24, Uppsala, Sweden.

Ilumoka, A. Jackman, J. (2020) NSF Funding Opportunities to Advance Engineering, ASEE North Midwest Section Conference, October 16, 2020.

Berger, E., Camacho, M., Cardella, M., Jackman, J., Lohani, V. (2020) How to Identify Appropriate

NSF Funding Programs and Prepare Competitive NSF Engineering Education Research Proposals, Workshop, ASEE 2020 Virtual Conference, June 22-26.

PhD Students

Pallavi Dubey, current Ph.D. student, Co-Advisor with Gül E. Kremer, 2021-2023.

Huiyi Zhang, IGERT Fellow, Ph.D., 2012 - 2016, NextEra Energy.

Cara Dienes, Ph.D., 2008-2011, A Game Theory Model of the Physician Preference Item Supply Chain, granted 2011, Disney Corp.

Jong Myong Choi, Ph.D., 2007-2010, A Selective Sampling Method for Imbalanced Data Learning on Support Vector Machines, granted 2010, Samsung.

Piyamart Kumsaikaew, Ph.D., 2004-2007, Information Acquisition and Reduction in Problem Solving, granted 2007, Bank of Thailand.

Zoila Guerra de Castillo, Ph.D. (S. Olafsson, Co-Major Advisor), 2003-2006, Stochastic Flow Shop Scheduling Model for the Panama Canal, granted 2006, Professor, Universidad Tecnol¢gica de Panama.

Oladayo Sanni, Ph.D., 2003-2006, A New Metric for Detecting Conflict in Functional Software Requirements, granted 2006, Unknown.

David Sly, Ph.D., 2001-2004, Transport Effort: A Metric for the Evaluation and Benchmarking of Automotive Assembly Plants, 2004, Senior Instructor, Iowa State University.

Yi-Chiuan Lai , Ph.D. (Doug Gemmill, Co-Major Advisor), 1999-2002, A General Stochastic Model For Product Development Processes, granted 2002, Professor, Providence University, Taiwan.

Debra Bishop, Ph.D., 1993-1996, Scheduling for Client-Driven Capacitated Systems, granted 1996, Professor, Drake University.

Tai-Hung Yang, Ph.D., 1992-1995, Characterization of Surface Profiles Using Discrete Measurement Systems, granted 1995, Professor, National Formosa University, Taiwan.

Dong-Keun Park, Ph.D.,1991, Collision-Free Automatic Dimensional Inspection Using Coordinate Measuring Machines, granted 1994, South Korean Army.

Jyh-Jeng Deng, Ph.D., 1990-1993, Criteria for Collected Data in Least Squares Circle Fitting, granted 1993, Professor and Chair, DaYeh University, Taiwan

Klaus Lemke, Ph.D. (Stephen Vardeman, Co-Major Advisor),1989, Heuristics for Sequential Assembly Experiments, granted 1992, VP, Milwaukee Operations of Miron

MS/MEng Students

Rama S. Mutyala, Co-Advisor with Gül E. Kremer, 2018 - 2020

Austin Sullivan, M.S., 2012-2013.

Johanns Wade, M.S., 2011-2012, The Effect of Tow Grouping Resolution on Shearing Deformation of Unidirectional Non-Crimp Fabric,2012,Sandia National Labs.

Abhinav Anand, M.S., 2004-2005, Schema Based Validation for Geometric Dimensioning and Tolerancing, granted 2005,Discover Card.

Siddharth Singhvi, M.S., 2004-2005, Effects of Web Robots on User Navigation Analysis, granted 2005, Unknown.

Cheng-Fa Lin, M.S., 2004-2005, Automatic Concept Hierarchy Generation Based on a Recursive Binary Discretization Method, granted 2005, Unknown.

Bjarke Rollmann, M.S., 2003-2004, Non-thesis, granted 2004, Dassault Systemes, Detroit.

Piyamart Kumsaikaew, M.S., 2003-2004, Web Usage Mining, granted 2004, Bank of Thailand.

Narong Tanawongnukul, M.S., 2001-2002, Non-thesis, granted 2002, Unknown.

Aalokrai Porwal, M.S., 1999-2000, Non-thesis, granted 2000, Unknown.

Joe Murray, M.S., 1997-1998, Data Collection for Vibration Analysis of Production Assemblies, granted 1998, Firestone.

N. Pari, M.S., 1996-1997,Concurrent Engineering of Bolt Assemblies, granted 1997, Started private consultancy.

Mukund Srinivasan, M.S., 1992-1993, Functional Evaluation of Kinematically-Driven Mechanical Systems, granted 1993,Unknown.

Debra Bishop, M.S., 1991-1992, A Bayesian Approach to Design Project Scheduling, granted 1992,Professor, Drake University.

Mark Pelzer, M.S., 1991-1992, Functionality Based Design for Airblast Atomization, granted 1992, Crenlo Corp.

Linda Schmidt, M.S., 1990-1991, Performance Analysis of a Stochastic Recirculating Conveyor, granted 1991, Professor, University of Maryland.

Shabbir Takhtawala, M.S., 1989-1990, Real-time FMS Scheduling with Multiple Criteria, granted 1990,Unknown.

Chris Wagner, M.S., 1989-1990, A Feature-Based System Specification Model for Manufacturing, granted 1990,Proctor & Gamble.

Douglas Hyde, M.S., 1988-1989, Petri Net Representation of Relay Ladder Logic for Programmable Controllers, granted 1989, Texas Instruments.

M. Eric Johnson, M.S., 1986-1987, An investigation of perturbation analysis, granted 1987 (Pennsylvania State University), Associate Dean, Dartmouth.

Jing Yang, M.Eng., 1994-1996, Non-thesis, granted 1996, Unknown

Jed Caven, M.Eng., 1987-1989, Non-thesis, granted 1989, Accenture

Patents

Tracheo-Bronchial Sampling Device, Maria J. Clavijo, Kevin J. Brownfield, John K. Jackman, and Bailey Arruda, US 11,878,116 B2, Jan. 23, 2024.

Vaccine Delivery Devices, Douglas E. Jones, Matthew Brewer, Balaji Narasimhan, and John Jackman, "Vaccine Delivery Devices": US 10,130,454 B2, Nov. 20, 2018.

Consulting Activities

Proctor & Gamble, Inventory Control, 2002

Becker-Underwood, Plant Layout, 2001

Stine Technology, Automation and Control, 2001-2011

John Deere, Automation and Simulation, 1999-2000

Sundstrand-Sauer, Real-Time FMS Control, 1989

Motorola, Simulation, 1990

Reviewer

National Science Foundation proposal review panel, 2023.

National Science Foundation proposal site visit, 2023.

REMADE Conference Proceedings, Circular Economy Tech Summit & Conference, 2023.

Professional Service

Technical Vice President, IISE, 2017-2020

Past President, Manufacturing and Design Division, IISE, 2017-2019

President, Manufacturing and Design Division, IISE, 2015-2017

Engineering Education Track Co-Chair, IISE 2017 Annual Conference

Manufacturing and Design Track Co-Chair, ISERC 2015 Conference

President-Elect, Manufacturing and Design Division, IIE, 2013-2015

Manufacturing and Design Track Co-Chair, ISERC 2014 Conference

Track Co-Chair for new Energy Track at the IERC 2011 Conference, 2010-2011.

Department Editor, IIE Transactions, Enterprise Computing, 2002-2004

Session Chairman, Operations Management IV, INFORMS, Miami, Florida, November 4, 2001

Department Editor IIE Transactions Design and Manufacturing, 2001-present

Member of IIE Transactions Editorial Board, 1997-present

Senior Member of the Society for Manufacturing Engineers (SME)

Senior Member of Institute of Industrial Engineers (IIE)

Member of American Society for Engineering Education (ASEE)

Session Chair, Project Planning, 1995 4th IERC, Nashville, TN

Session Chairman, Simulation-Based Scheduling Systems, 1990

Winter Simulation Conference, New Orleans, Lousiana.

Moderator, Automated Process Planning, 1992 IIE Research

Conference, Chicago, Illinois

Session Chairman, Scheduling in Design and Manufacturing,

1992 ORSA/TIMS Fall Conference, San Francisco, California

Editor, Proceedings, IIE Research Conference, 1994, Atlanta,Georgia