FAISAL AQLAN, PHD

Certified Lean Silver (IBM), Six Sigma Black Belt (ASQ), Lean Six Sigma Black Belt (IASSC), Accredited Training Associate (IASSC)
Associate Professor of Industrial Engineering and Director of Engineering Management Programs
Department of Industrial Engineering, J.B. Speed School of Engineering
University of Louisville, Louisville KY 40292
Email: faisal.aqlan@louisville.edu, Phone: 502-852-1697

EDUCATION

State University of New York at Binghamton, Binghamton, NY Aug '10 – Dec '13
PhD in Industrial and Systems Engineering (GPA: 4.0, academic and research excellence awards)
Dissertation: *Supply Chain Risk Modeling and Management in a Globally Integrated Enterprise*
Sponsored by IBM Corporation. Advisor: Prof. Sarah S. Lam

Jordan University of Science and Technology, Irbid, Jordan Feb '08 – Jul '10
MSc in Industrial Engineering (GPA: 93.4%, excellent, ranked first)
Thesis: *Performance Analysis of an Automated Production System*

Jordan University of Science and Technology, Irbid, Jordan Aug '02 – Jul '07
BSc in Industrial Engineering/Engineering Management (GPA: 85.2%, excellent, ranked second)

PROFESSIONAL EXPERIENCE

University of Louisville, Louisville KY Aug '21 - Present
Associate Professor of Industrial Engineering
Director of Master of Engineering in Engineering Management

Pennsylvania State University, The Behrend College, Erie PA Jul '14 – Aug '21
William & Wendy Korb Early Career Professor (associate professor) of Industrial Engineering (2021)
Associate Professor (tenured) (2020 – 2021) and *Assistant Professor* (2014 – 2020), Industrial Engineering and Master of Manufacturing Management
Research Faculty Advisor: NSF Center for Health Organization Transformation (Penn State UP) (2018 –2021)
Coordinator: Metrology Lab and System Simulation and Automation Lab (2018 –2021)
Founder and Lead Instructor: Lean Six Sigma Green Belt Training and Certification (2018–2021)
PI & Director: NSF RET Site in Manufacturing Simulation and Automation (2017 –2021)
Faculty Advisor: IISE Penn State Behrend Chapter (2015–2021)

University of New Haven, West Haven, CT Jan '14 – Jun '14
Faculty Member – Engineering and Operations Management (graduate)
Faculty Member –Industrial Engineering (graduate) and System Engineering (undergraduate)

IBM Corporation, Poughkeepsie, NY Jul '11 – Dec '13
Research Associate, member of Advanced Manufacturing Sciences (AMS) team
Certifications: Lean Bronze, Lean Silver, Lean Six Sigma Green Belt

Innovation Associates Company, Binghamton, NY Jan '11 – Jun '11
Research Associate

PROFESSIONAL AFFILIATIONS

Institute of Industrial and Systems Engineers (IISE) Jan '12 - Present
Membership: Senior Member
Member of the Board of Trustees (BOT) (2020 –)
Member of Diversity, Equity and Inclusion (DEI) Committee (2020 –)

Vice President of Student Development (2020 –)
Member of Technical Operations Board (2019 – 2021)
Director, President-Elect, President, and Past-President of Logistics and Supply Chain Division (2015 – 2019)
Co-Founder and Director of Modeling and Simulation Division (2016 – 2019)
Director of Young Professionals Group (2015 – 2020)
Conference Track Chair of Logistics and Supply Chain (2015 – 2017), Modeling and Simulation (2018, 2019), and Engineering Education (2021, 2022)
Conference Session Chair (2012 – 2019)
Faculty Conference Chair, IISE 2020 Northeast Regional Conference (Theme: Industrial Engineering 4.0)
Faculty Conference Chair, IISE 2021 Northeast Regional Conference (Theme: The Future of ISE)

Industrial Engineering and Operations Management (IEOM) Society Jul '16 - Present
Membership: Professional Member
Supply Chain Track Chair (IEOM Detroit 2016; IEOM DC 2018; IEOM Toronto 2019)

American Society for Quality (ASQ) Mar '17 - Present
Membership: Professional Member
Certifications: Six Sigma Black Belt

Society for Manufacturing Engineers (SME) Mar '18 - Present
Membership: Professional Member

American Society for Engineering Education (ASEE) June '19 - Present
Membership: Professional Member
Board Member of Manufacturing Division (2020 –)

HONORS AND AWARDS

- William and Wendy Korb Early Career Professorship in Industrial Engineering, Penn State Behrend, 2021.
- Best Paper Award, Human Factors and Ergonomists Track, IISE Annual Conference, 2021.
- School of Engineering Distinguished Award for Excellence in Outreach, Penn State Behrend, 2021.
- Honorable Mention of the Best Service Science Student Paper Competition, INFORMS Conference on Service Science, 2021.
- Outstanding Reviewer, International Journal of Production Economics, 2016, 2018, 2020.
- Open Lab Initiative Award, Penn State Behrend, 2020.
- Undergraduate Student Paper Competition (sponsored by Siemens), 1st Place, (faculty advisor), IEOM Conference, Zimbabwe, 2020.
- Undergraduate Student Paper Competition (sponsored by Siemens), 3rd Place, (faculty advisor), IEOM Conference, Detroit, 2020.
- Best paper award, Human Factors and Ergonomics Track (co-author), IEOM Conference, Detroit, 2020.
- Lean Six Sigma Competition Award, 1st Place, IEOM Conference, Detroit, 2020.
- Outstanding Junior Faculty Award, ASEE Manufacturing Division, 2020.
- New Industrial Engineering Educator Award, ASEE Industrial Engineering Division, 2020.
- Erie 40 Under 40: Class of 2019, Erie Reader, 2019.
- IEOM Young Researcher Award, IEOM Society International, 2018.
- Best paper award, Lean Track (co-author), IEOM Conference, Detroit, 2018.
- Best paper award, Human Factors and Ergonomics Track (co-author), IEOM Conference, 2018.
- School of Engineering Distinguished Award for Excellence in Research, Penn State Behrend, 2018.
- Council of Fellows Faculty Research Award, Penn State Behrend, 2018.
- IISE Gold Award for Behrend Chapter (faculty advisor), 2016, 2017, 2018, 2019, 2020.
- Panelist, National Science Foundation, 2018, 2019, 2020.
- Undergraduate Research Project Award (faculty advisor), Annual Undergraduate Research and Creative Accomplishment Conference, Penn State Behrend, 2016, 2017, 2018.
- Best Paper Award, Healthcare Track (co-author), IEOM Detroit, 2016.

- Best Senior Design Project Award (faculty advisor), Fasenmyer Engineering Design Conference, Penn State Behrend, 2016, 2018, 2019.
- Outstanding Academic Achievement in Graduate Studies, Thomas J. Watson School of Engineering and Applied Sciences, State University of New York at Binghamton, 2014.
- Graduate Student Award for Excellence in Research, Binghamton University, 2013.
- IBM Vice President Award for Innovation Excellence, IBM Global Manufacturing & Customer Solution Centers, 2013.
- Lean Recognition Award, IBM Poughkeepsie, 2013.
- Best of Manufacturing/ISC Award for Ergonomic Assessment at IBM Poughkeepsie, 2012.
- Alpha Pi Mu – Industrial Engineering Honor Society, Binghamton, NY, 2012.
- M.S. Graduation with Highest Honor, 1st Place, 2010.

SCHOLARSHIP

REFEREED JOURNALS (*STUDENTS)

[1] Gailan*, A., Lam, S.S., and **Aqlan, F.**, "A Fuzzy-based Approach for Cholera Risk Assessment and Vaccine Allocation," *Expert Systems with Applications* (Under Review).

[2] **Aqlan, F.,** and Kim, E., "A Practical Course Project Integration to Enhance Design and Manufacturing Learning," *IEEE Transactions on Education* (Under Review).

[3] Gailan*, A., and **Aqlan, F.,** "A Simulation-Optimization Approach for Production Control Strategies in Perishable Food Supply Chains," *Journal of Simulation* (Under Review).

[4] Zhu*, R., **Aqlan, F.**, Zhao, R., and Yang, H., "Eye Tracking and Analytical Modeling of Problem-Solving in Virtual Reality Manufacturing Systems," *Expert Systems with Applications* (Under Review).

[5] **Aqlan, F.,** and Zhao, R., "Assessment of Problem-Solving Skills in Engineering Students through Hands-on Simulations," *IEEE Transactions on Education*, 2021.

[6] Kbah*, Z., Erdil, N., and **Aqlan, F.,** "A Framework for Risk Modeling and Mitigation in Oil and Gas Supply Chains," *International Journal of Industrial Engineering: Theory, Applications and Practice*, 2020.

[7] Almeanazel, O., **Aqlan, F.,** Almeanazel, A., and Almomani, H., "Factors Affecting Spine Loading in a Box Lifting Task: A Digital Human Modeling Study," *International Journal of Industrial and Systems Engineering*, 2020.

[8] Kim, E., **Aqlan, F.,** and Freivalds, A., "Development of an Ergonomic Four-Finger-Push Manual Pipette Design," *Applied Ergonomics*, 85, 2020.

[9] Nezamoddini, N., and **Aqlan, F.,** "A Risk-based Optimization Framework for Integrated Supply Chains Using Genetic Algorithm and Artificial Neural Networks," *International Journal of Production Economics*, 2019.

[10] Díaz-Curbelo*, A., Gento, A.M., Redondo, A., and **Aqlan, F.,** "A Fuzzy-based Holistic Approach for Supply Chain Risk Assessment and Aggregation Considering Risk Interdependencies," *Applied Sciences*, 2019.

[11] Dai, Z., **Aqlan, F.,** Gao, K., and Zhou, Y., "A Two-phase Method for Multi-echelon Location-routing Problems in Supply Chains," *Expert Systems with Applications*, 2019, 19.

[12] Dai, Z., **Aqlan, F.,** Zheng, X., and Gao, K., "A Location-Inventory Supply Chain Network Model for Perishable Product with Fuzzy Constraints," *Computers and Industrial Engineering*, 119, May 2018, 338-352.

[13] Saha, C., Lam, S.S., and **Aqlan, F.,** "Product Acquisition Management in a High-End Server Manufacturing/Remanufacturing Environment," *International Journal of Supply Chain and Inventory Management*, 2018.

[14] Hamasha, M.M., Al-Rabaya, and **Aqlan, F.,** "Standard Tables of Truncated Standard Normal Distribution using A New Summarizing Method," *World Journal of Engineering*, 15(2), 2018, 216-247.

[15] **Aqlan, F.,** and Al-Fandi, L., "Prioritizing Process Improvement Initiatives in Manufacturing Environments," *International Journal of Production Economics*, 196, February 2018, 261-268.

[16] **Aqlan, F.,** "Using Lean Methodologies to Improve Operational Performance in Foundries," *International Journal of Lean Enterprise Research*, 2(3), 2018.

[17] Dai, Z., **Aqlan, F.,** and Gao, K., "Optimizing Multi-Echelon Inventory with Three Types of Demand in Supply Chain," *Transportation Research Part E, November,* 2017, 107, 141-177.

[18] **Aqlan, F.,** "Dynamic Clustering of Inventory Parts to Enhance Warehouse Management," *European Journal of Industrial Engineering*, 2017, 11(4), 469-485.

[19] **Aqlan, F.,** Ahmed, A., and Ashour, O., Shamsan*, A., and Hamahsa, M., "A Simulation and Multi-Attribute Utility Theory Based Approach for Rush Orders Acceptance Decisions," *European Journal of Industrial Engineering,* 2017, 11(5), 613-630.

[20] Saha, C., **Aqlan, F.,** Lam, S.S., and Boldrin, W., "A Decision Support System for Real-time Order Management in a Heterogeneous Production Environment," *Expert Systems with Applications,* 2016, 30, 16-26.

[21] **Aqlan, F.,** and Lam, S.S., "Supply Chain Optimization under Risk and Uncertainty: A Case Study for High-End Server Manufacturing," *Computers and Industrial Engineering,* 2016, 93, 78-87.

[22] **Aqlan, F.,** "A Software Application for Rapid Risk Assessment in Integrated Supply Chains," *Expert Systems with Applications,* 2016, 43, 109-116.

[23] **Aqlan, F.,** Lam, S.S., and Ramakrishnan, S., "Interplant Inventory Transshipment in Integrated Supply Chains," *International Journal of Supply Chain and Inventory Management*, 2016, 1(2), 118-132.

[24] **Aqlan, F.,** Ahmed, A., Cao, W., and Khasawneh, M.T., "An Ergonomic Study of Body Motions during Muslim Prayer Using Digital Human Modeling," *International Journal of Industrial and Systems Engineering*, 2017, 25(3), 279-296.

[25] **Aqlan, F.,** Lam, S.S., and Ramakrishnan, S., "Assessment of Supply Chain Readiness for Transformation," *International Journal of Business Performance and Supply Chain Modelling*, 2016, 8(3), 181-200.

[26] **Aqlan, F.,** and Lam, S.S., "Supply Chain Risk Modeling and Mitigation," *International Journal of Production Research,* 2015, 53(18), 5640-5656.

[27] Hamasha, M., Alazam, A., Hamasha, S., **Aqlan, F.,** Almeanazel, O., and Khasawneh, M.T., "Multi-Machine Flexible Manufacturing Cell Analysis Using a Markov Chain-Based Approach," *IEEE Transactions on Components, Packaging and Manufacturing Technology*, 2015, 99, 1-7.

[28] **Aqlan, F.,** and Lam, S.S., "A Fuzzy-based Integrated Framework for Supply Chain Risk Assessment," *International Journal of Production Economics*, 2015, 161, 54-63.

[29] **Aqlan, F.,** and Ali, E.M., "Integrating Lean Principles and Fuzzy Bow-Tie Analysis for Risk Assessment in Chemical Industry," *Journal of Loss Prevention in the Process Industries*, 2014, 29, 39-48.

[30] **Aqlan, F.,** Lam, S.S, and Ramakrishnan, S., "An Integrated Simulation-Optimization Study for Consolidating Production Lines in a Configure-to-Order Environment," *International Journal of Production Economics*, 2014, 148, 51-61.

[31] Al-Hawari, T., and **Aqlan, F.,** "A Software Application for E-Kanban Based WIP Control in the Aluminum Industry," *International Journal of Modelling in Operations Management*, 2012, 2(2): 119-137.

[32] **Aqlan, F.,** Hamasha, M. M., Almeanazel, O. T., Khasawneh, M.T., and Al-Hawari, T., "Stochastic Analysis of Pull Production Systems," *The Journal of Management and Engineering Integration,* 2011, 4(1): 36-44.

[33] Almeanazel, O. T., Hamasha, M.M., **Aqlan, F.,** and Khasawneh, M.T., "The Effect of Smoking, Gender, and Hand dominancy on Hand Endurance Limit," *International Journal of Intelligent Technologies and Engineering Systems,* 2011, 1(1): 67-73.

[34] Al-Hawari, T., **Aqlan, F.,** and Al-Araidah, O., "Performance Analysis of an Automatic Production System with Queue Length Dependent Service Rate," *International Journal of Simulation Modeling,* 2010, 9(4): 184-194.

[35] **Aqlan, F.,** Al-Araidah, O., and Al-Hawari, T., "Quality Assurance and Accreditation of Engineering Education in Jordan," *European Journal of Engineering Education,* 2010, 35(3): 311-323.

BOOK CHAPTERS

[1] Nezamoddini, N., **Aqlan, F.,** and Gholamin, A., "Risk-based Optimization of Electronics Supply Chains," In *Optimization in Large Scale Problems: Industry 4.0 and Society 5.0 Application,* Springer, 2019, pp. 179-199.

[2] Elliott, L.J., Lum, H.C., **Aqlan, F.,** Zhao, R., Lasher*, C.D., "A Study of Metacognitive Problem Solving in Undergraduate Engineering Students," In: Karwowski W., Ahram T., Nazir S. (eds) *Advances in Human Factors in Training, Education, and Learning Sciences*. AHFE 2019. *Advances in Intelligent Systems and Computing*, vol 963. Springer.

REFEREED CONFERENCE PROCEEDINGS (*STUDENTS, †HIGH SCHOOL TEACHERS)

[1] Zhu*, R., **Aqlan, F.,** Zhao, Yang, H., "Eye-Track Modeling of Problem-Solving in Virtual Manufacturing Systems," *ASEE Annual Conference and Exposition*, 2021.

[2] Niederriter, B., Rong, A., **Aqlan, F.,** and Yang, "Sensor-Based Virtual Reality for Clinical Decision Support in the Assessment of Mental Disorders," *IEEE Conference on Games*, 2020.

[3] Melnik, S., Magnotti, M., Butts, C., Putman, C., and **Aqlan, F.,** "Developing a Maturity Model and an Implementation Plan for Industry 4.0 Integration," *The Second African International Conference on Industrial Engineering and Operations Management*, 2020.

[4] Melnik, S., Magnotti, M., Butts, C., Putman, C., and **Aqlan, F.,** "A Concept Relationship Map for Industry 4.0," *International Conference on Industrial Engineering and Operations Management*, 2020.

[5] Qasem, A.G., Shamsan, A., and **Aqlan, F.,** "Optimal Cholera Vaccine Allocation Policies in Developing Countries: A Case Study," *International Conference on Industrial Engineering and Operations Management*, 2020.

[6] Shamsan, A., Qasem, A.G., and **Aqlan, F.,** "Development of a Scoring Methodology for Ergonomic Risk Assessment in the Workplace," *International Conference on Industrial Engineering and Operations Management*, 2020.

[7] Ramakrishnan, S., and **Aqlan, F.,** "Client Experience Transformation: From the Art of Management to the Science of Digitalization," *Winter Simulation Conference (WSC)*, 2020.

[8] **Aqlan, F.,** Zhao, R., Yang, H., and Ramakrishnan, S., "A Virtual Learning Factory for Advanced Manufacturing," *Winter Simulation Conference (WSC)*, 2020.

[9] Zhu*, R., **Aqlan, F.,** and Yang, H., "Optimal Resource Allocation for Coverage Control of City Crimes," *2020 INFORMS Conference on Service Science (ICSS2020)*, 2020.

[10] Nikhare, C., Teculver†, E., and **Aqlan, F.,** "Experimental Investigation on Forming Limit Curve at Elevated Temperature through Dome and Biaxial Test," *ASME 2020 International Mechanical Engineering Congress and Exposition (IMECE2020)*, 2020,

[11] Nwokeji, J., Iron, G., Holmes, T., Mendoza, N., **Aqlan, F.,** Coffman, J., and Liu, Y., "Panel: Incorporating Cloud Computing Competences into Computing Curriculum: Challenges & Prospects," *Frontiers in Education (FIE),* 2020.

[12] **Aqlan, F.,** Shamsan, A., and Nwokeji, J., "Teaching Introductory Data Analytics Course Using Microsoft Access® and Excel®," *Frontiers in Education (FIE),* 2020.

[13] **Aqlan, F.,** Dunsworh, Q., and Resig, J., "Investing in the Future: Bringing Research and Industry into Simulation-based Manufacturing Education," *American Society for Engineering Education (ASEE) Annual Conference*, 2020.

[14] Zhao, R., **Aqlan, F.,** Elliott, L., and Baxter*, E., "Multiplayer Physical and Virtual Reality Games for Team-based Manufacturing Simulation," *American Society for Engineering Education (ASEE) Annual Conference*, 2020.

[15] Elliott, L., **Aqlan, F.,** Zhao, R., and Janney*, M., "Assessment of Metacognitive Skills in Design and Manufacturing," *American Society for Engineering Education (ASEE) Annual Conference*, 2020.

[16] Dempsey†, T.N., Ng†, M.R., Gong, J., and **Aqlan, F.,** "Teaching Science Using Dye sensitized Solar Cells Kit," *American Society for Engineering Education (ASEE) Annual Conference*, 2020.

[17] **Aqlan, F.,** Alabsi, M., and Ramakrishnan, S., Baxter*, E., "A Small-scale Implementation of Industry 4.0," *IISE Annual Conference and Expo*, 2020.

[18] **Aqlan, F.,** de Vries, C., Sargent†, M., and Valentine†, A., "Using 3D Printing to Teach Design and Manufacturing Principles," *IISE Annual Conference and Expo*, 2020.

[19] McCorkle†, M., Wingerter†, J., Thompson, P., and **Aqlan, F.,** "Hands-On Simulations to Demonstrate Manufacturing Paradigms," *IISE Annual Conference and Expo*, 2020.

[20] Khalilollahi*, S., Gabel*, Z., Kosienski†, G., **Aqlan, F.,** and Yang, H., "Online and Interactive Simulations for Teaching Manufacturing and Supply Chain," *IISE Annual Conference and Expo*, 2020.

[21] Patterson*, J., Dagne*, E., **Aqlan, F.,** and Putman, C., "Integrating Lean Six Sigma and Data Analytics to Improve Student Retention," *IISE Annual Conference and Expo*, 2020.

[22] Nwokeji, J., Stachel, Holmes, T.S, **Aqlan, F.,** Udenze, E.C., Orji, R. "Panel: Addressing the Shortage of Big Data Skills with Inter-Disciplinary Big Data Curriculum," *Frontiers in Education (FIE)*, 2019.

[23] **Aqlan, F.,** Dunsworth, Q., Walters, G., Ford, M., and Resig, J., "A Program to Improve Manufacturing Learning Using Simulation and Automation", *American Society for Engineering Education (ASEE) Annual Conference*, 2019.

[24] **Aqlan, F.,** Zhao, R., Lum, H., and Elliott, L., "Integrating Simulation Games and Virtual Reality to Teach Manufacturing Systems Concepts", *American Society for Engineering Education (ASEE) Annual Conference*, 2019.

[25] **Aqlan, F.,** Lum, H., Zhao, R., and Elliott, L., "Using Manufacturing Simulations to Evaluate Metacognitive Awareness in Industrial Engineering Students", *American Society for Engineering Education (ASEE) Annual Conference*, 2019.

[26] Nikhare, C., McMahon†, P., and **Aqlan, F.,** "An Experimental Study on Direct Current Dieless Drawing of 4130 Steel Tubes," *ASME 2019 14th International Manufacturing Science and Engineering Conference*, 2019.

[27] Elliott, L., Lum, H., **Aqlan, F.,** Zhao, R., and Lasher, C.D., "A Study of Metacognitive Problem Solving in Undergraduate Engineering Students", *Applied Human Factors and Ergonomics (AHFE) Annual Conference,* 2019.

[28] Slavin, A., and **Aqlan, F.,** "Data Analytics Models for Medicare Spend Optimization", *IISE Annual Conference and Expo,* 2019.

[29] Kim*, K., **Aqlan, F.,** and Freivalds, A., "Effect of Pipette Design on Musculoskeletal Loading on Hand," *IISE Annual Conference and Expo,* 2019.

[30] Nwokeji, J.C., Holmes, T.S., Stachel, R., and **Aqlan, F.,** "A Content Framework for Developing Data Analytics Courses," *Frontiers in Education (FIE),* 2019.

[31] Nwokeji, J.C., **Aqlan, F.,** Holmes, T.S., Stachel, R., Udenze, E., and Orji, R., "Panel: Addressing the Shortage of Big Data Skills with Inter-Disciplinary Big Data Curriculum," *Frontiers in Education (FIE),* 2019.

[32] Zhu*, R., **Aqlan, F.,** and Yang, H., "Optimal Service and Resource Allocation for Coverage Control of City Crimes," *INFORMS International Conference on Service Science*, 2018

[33] Cirelli*, J., Konkol, A.M., **Aqlan, F.,** and Nwokeji, J.C., "Predictive Analytics Models for Student Admission and Enrolment," *International Conference on Industrial Engineering and Operations Management (IEOM),* Washington DC, USA, September 27-29, 2018.

[34] Badawy*, M., Cirelli*, J., Setyono*, H., and **Aqlan, F.,** "Analysis and Visualization of City Crimes," *International Conference on Industrial Engineering and Operations Management (IEOM)*, Washington DC, USA, September 27-29, 2018.

[35] Wolkiewicz*, C., Collins*, K., and **Aqlan, F.,** "Ergonomic Assessment of Snow Shovels Using Digital Human Modeling," *International Conference on Industrial Engineering and Operations Management (IEOM),* Washington DC, USA, September 27-29, 2018.

[36] Bowers*, N., Cirelli*, J., Andrzejewski*, A., Lang*, J., **Aqlan, F.,** and Pedersen, A., "Analysis of Medicare Spending per Beneficiary (MSPB)," *International Conference on Industrial Engineering and Operations Management (IEOM),* Washington DC, USA, September 27-29, 2018.

[37] Henry*, D., Shindledecker*, D., and **Aqlan, F.,** "Analysis of Production Layout Alternatives Using Lean Techniques and Monte Carlo Simulation," *International Conference on Industrial Engineering and Operations Management (IEOM),* Washington DC, USA, September 27-29, 2018.

[38] Bogert*, A., Edwards*, W., Jalali*, F., and **Aqlan, F.,** "Process Improvement and Layout Optimization in a Forging Company," *International Conference on Industrial Engineering and Operations Management (IEOM),* Washington DC, USA, September 27-29, 2018.

[39] Wingerter†, J., McCorkle†, M., Jalali*, F., DeVarney*, A., and **Aqlan, F.,** "Development of a Simulation Game for the Craft Production Paradigm," *International Conference on Industrial Engineering and Operations Management (IEOM),* Washington DC, USA, September 27-29, 2018.

[40] McCurdy†, S., Namey†, J., and **Aqlan, F.,** "A Framework for Teaching Manufacturing Paradigms Using Simulation," *International Conference on Industrial Engineering and Operations Management (IEOM),* Washington DC, USA, September 27-29, 2018.

[41] Cocolin†, N., DeVarney*, A., and **Aqlan, F**., "Analysis of Soft Skills Requirements for Manufacturing Jobs," *International Conference on Industrial Engineering and Operations Management (IEOM),* Washington DC, USA, September 27-29, 2018.

[42] Nwokeji, J.C., **Aqlan, F.,** Apoorva, A., and Olagunjuy, A., "Big Data ETL Implementation Approaches: A Systematic Literature Review," *Software Engineering and Knowledge Engineering*, 2018.

[43] **Aqlan, F.,** and Nwokeji, J.C., "Applying Product Manufacturing Techniques to Teach Data Analytics in Industrial Engineering: A Project Based Learning Experience," *The 48th Annual Frontiers in Education (FIE) Conference*, San Jose, CA, October 2018.

[44] Nwokeji, J.C., **Aqlan, F.,** Olagunju, A., Holmes, T., and Okoliex, N.C., "Implementing Projct Based Learning: Some Challenges from a Requirements Engineering Perspective," *The 48th Annual Frontiers in Education (FIE) Conference*, San Jose, CA, October 2018.

[45] Nwokeji, J.C., **Aqlan, F.**, Martinez, J., Holmes, T., Frezza, S., and Orji, R., "Panel: Integrating Requirements Engineering Education into Core Engineering Disciplines," *The 48th Annual Frontiers in Education (FIE) Conference*, San Jose, CA, October 2018.

[46] **Aqlan, F.,** Dunsworth, Q., and Khal, M., "Integrating Soft Skill Development into a Manufacturing Systems Course," *American Society for Engineering Education (ASEE) Annual Conference,* 2018.

[47] Nwokeji, J.C., **Aqlan, F.,** Clark, T., Bran, B., and Kulkarni, V., "A Modeling Technique for Enterprise Agility," *Hawaii International Conference on System Sciences*, 2018.

[48] **Aqlan, F.,** Ramakrishnan, S., and Shamsan, A., "Integrating Data Analytics and Simulation Modeling for Defect Management in Manufacturing Environments," *Winter Simulation Conference*, 2017.

[49] **Aqlan, F.,** Ramakrishnan, S., Al-Fandi, L., and Saha, C., "A Framework for Selecting and Evaluating Process Improvement Projects Using Simulation and Optimization Techniques," *Winter Simulation Conference*, 2017.

[50] Al-Fandi, L., and **Aqlan, F.,** "Analysis of End-of-Quarter Inventory in Hybrid Production Environments Using Simulation," *International Conference on Industrial Engineering and Systems Management*, 2017.

[51] **Aqlan, F.,** and Walters, G., "Teaching Lean Principles through Simulation Games," *American Society for Engineering Education (ASEE) Annual Conference,* 2017.

[52] Ashour, O., **Aqlan, F.**, and Lynch, P., "A Hybrid Mastery-Conventional Assessment in Engineering Economy," *American Society for Engineering Education (ASEE) Annual Conference*, 2017.

[53] **Aqlan, F.,** and Ashour, O., "Integrating Industry-based Projects into an Undergraduate Manufacturing Systems Course," *American Society for Engineering Education (ASEE) Annual Conference*, 2017.

[54] **Aqlan, F.,** Huang, R., Walters, G., and Almeanazel, O., "Enhancing Ergonomic Design Skills among Undergraduate Students by Integrating Computer Aided Design and Digital Human Modeling," *American Society for Engineering Education (ASEE) Annual Conference*, 2017.

[55] **Aqlan, F.**, Ashour, O., and Pedersen, A., "A Case Study for Improving First Case Starts in Operating Rooms," *IISE Annual Conference and Expo*, 2017. [Invited]

[56] Ashour, O., **Aqlan, F.,** and Anne Pedersen "Improve Operating Rooms Performance Using Lean and Statistical Methods: A Case Study," *IISE Annual Conference and Expo*, 2017. [Invited]

[57] Saha, C., **Aqlan, F.**, Ramakrishnan, S., and Boldrin, W., "Analytical Models for Enhanced Production Decisions in Clear-to-Build Modules," *IISE Annual Conference and Expo*, 2017. [Invited]

[58] **Aqlan, F.,** Lashway*, C., and Ford, M., "Ergonomic Assessment of Backpack Carriage among High School Students," *IISE Annual Conference and Expo*, 2017.

[59] **Aqlan, F.,** Shamsan*, A., and Markle*, R., "Data Mining for Chronic Kidney Disease Prediction," *IISE Annual Conference and Expo*, 2017.

[60] Shamsan, A., **Aqlan, F.,** and Al-Zoubi, E., "Selection of CT Scanners Using Analytic Hierarchy Process and Monte Carlo Simulation," *IISE Annual Conference and Expo*, 2017

[61] **Aqlan, F.,** "Design and Implementation of a Database for Safety and Ergonomics in Engineering Research Labs," *International Conference on Industrial Engineering and Operations Management*, Detroit, MI, September 2016.

[62] **Aqlan, F.,** Ashour, O., and Pedersen, A., "Lean Process Improvement of First Case Scheduling in Operating Rooms," *International Conference on Industrial Engineering and Operations Management*, Detroit, MI, September 2016.

[63] Ashour, O., **Aqlan, F.,** and Pedersen, A., "Process Improvement Approach to Investigate Low Block Utilization of Operating Rooms: A Case Study," *International Conference on Industrial Engineering and Operations Management*, Detroit, MI, September 2016.

[64] Lynch, P., and **Aqlan, F.**, "Filling the Skills Gap in U.S. Manufacturing: Promoting Internships and Co-Op Experiences and Integrating Industrial Engineering Courses to Improve Student Design and Manufacturing Knowledge," *The 46th Annual Frontiers in Education (FIE) Conference*, Erie, PA, October 2016.

[65] **Aqlan, F.**, and Ashour, O. "A Simulation-Optimization Framework for Crossdocking Assignment Problem," *IISE Annual Conference and Expo*, Anaheim, CA, May 2016 [Invited].

[66] Ashour, O., **Aqlan, F.,** and Lynch, P. "Simulation for Triage," *IISE Annual Conference and Expo*, CA, May 2016 [Invited].

[67] **Aqlan, F.,** Lam, S.S., and Ramakrishnan, S. "A Framework for Contract Management in Customer Solution Centers," *Proceedings of Industrial and Systems Engineering Research C IISE Annual Conference and Expo*, Anaheim, CA, May 2016 [Invited].

[68] Kbah*, Z., **Aqlan, F.,** and Erdil, N. "Analysis of Oil and Gas Supply Chain Using Continuous-Time Discrete-Event Simulation," *IISE Annual Conference and Expo*, Anaheim, CA, May 2016 [Invited].

[69] Kbah*, Z., Erdil, N., and **Aqlan, F.,** "A Framework for Risk Management in Oil and Gas Supply Chains," *IISE Annual Conference and Expo*, Anaheim, CA, May 2016 [Invited].

[70] Alrezq*, M., **Aqlan, F.**, and Erdil, N. "Analysis of Drinking Water Distribution Systems Using Continuous-Time Discrete-Event Simulation," *IISE Annual Conference and Expo*, Anaheim, CA, May 2016 [Invited].

[71] **Aqlan**, **F**., Saha, C., and Ramakrishnan, S., "Defect Analytics in a High-End Server Manufacturing Environment," *IISE Annual Conference and Expo*, Nashville, TN, May 2015 [Invited].

[72] D'Ostilio*, A., and **Aqlan**, **F**., "Workstation Design and Analysis Using Lean and Statistical Techniques," *IISE Annual Conference and Expo*, Nashville, TN, May 2015 [Invited].

[73] Ahmed, A., Al-Mashraie, M., and **Aqlan, F.,** "Evaluation of Dispatching Rules in Manufacturing Using Simulation and Data Envelopment Analysis," *IISE Annual Conference and Expo*, Nashville, TN, May 2015 [Invited].

[74] **Aqlan**, **F**., Lam, S.S., Testani, M., and Ramakrishnan, S., "An Ergonomic Study for 6S Workplace Improvement," *IISE Annual Conference and Expo*, Montreal, Canada, May 2014 [Invited].

[75] **Aqlan, F.,** Lam, S., Ramakrishnan, S., and Boldrin, W., "Integrating Lean and Ergonomics to Improve Internal Transportation in a Manufacturing Environment," *IISE Annual Conference and Expo*, Montreal, Canada, May 2014 [Invited].

[76] **Aqlan, F.,** Ahmed, A., Khasawneh, M.T., and Srihari, K., "Integrating Artificial Neural Networks and Cluster Analysis to Assess Energy Efficiency of Buildings," *IISE Annual Conference and Expo*, Montreal, Canada, May 2014.

[77] Al-Fandi, L., and **Aqlan**, **F**., "Using Simulation to Determine the Batch Size for I/O Drawer Test Process in a High-End Server Manufacturing Environment," *Proceedings of International Conference on Flexible Automation and Intelligent Manufacturing*, San Antonio, TX*,* May 2014.

[78] **Aqlan**, **F**., and Lam, S.S., Testani, M., Ramakrishnan, S., "Ergonomic Risk Reduction to Enhance Lean Transformation," *IISE Annual Conference and Expo*, San Juan, PR, May 2013 [Invited].

[79] **Aqlan**, **F**., Lam, S.S., Ramakrishnan, S., and Martinez, K., "A Framework for Managing Unexpected Events in a Server Manufacturing Environment," *IISE Annual Conference and Expo*, Orlando, FL, May 2012 [Invited].

[80] **Aqlan**, **F**., Lam, S.S., and Martinez, K., "Prioritizing Customer Orders in a High-End Server Manufacturing Environment Using Artificial Neural Networks," *IISE Annual Conference and Expo*, Orlando, FL, May 2012.

[81] **Aqlan**, **F**., Yoon, S.W., Khasawneh, M.T., and Srihari, K., "A Three-Stage Auditing System to Minimize Medical Necessity Claim Denials," *IISE Annual Conference and Expo*, Reno, NV, May 2011 [Invited].

[82] Al-Araidah, O., **Aqlan**, **F**., and Al-Hawari, T., "Quality Assurance and Accreditation of Engineering Programs at Jordan University of Science and Technology," *International Conference on Higher Education and Quality Assurance*, Muscat, Oman, April 2010.

[83] Al-Hawari, T., **Aqlan**, **F**., Al-Buhaisi, M., and Al-Faqeer, Z., "Simulation-based Analysis and Productivity Improvement of a Fully Automatic Bottle-filling Production System: A Practical Case Study," *International Conference of Computer Modeling and Simulation*, Sanya, China, January 2010.

PATENTS/PATENT APPLICATIONS

[1] Defect Management (granted on August 27, 2019).
[2] Performing Hierarchical Data-Driven Inventory and Warehouse Management System (granted on March 6, 2018).
[3] Dynamic Batch Size and Internal Transportation (granted on January 30, 2018).
[4] Decision Support System for Order Prioritization (granted on March 28, 2017).
[5] Order Offload (filed on January 15, 2015).
[6] Ergonomic Risk Assessment (filed on November 20, 2014).
[7] Inter-Organizational Inventory Transshipment (filed on November 15, 2013).

NON-REFEREED PAPERS AND PRESENTATIONS

[1] Zhu, R., **Aqlan, F.**, Zhao, R., and Yang, H., "A Joint SDT-C&E Model for Quantifying Problem-Solving in Sensor-Based Virtual Reality Manufacturing Systems," IISE Annual Conference, 2021.
[2] Reed, J., Wood, R. Nikhare, C., and **Aqlan, F.**, "Effect of Electric Current on Grain Structure of Aluminum Alloy," IISE Annual Conference, 2020.
[3] TeCulver, E., Nikhare, C., and **Aqlan, F.**, "Forming Limits Comparison through Biaxial and Dome Test," IISE Annual Conference, 2020.
[4] **Aqlan, F.**, Elliott, L.J., and Zhao, R., "Measuring Problem-Solving Skills with Virtual Reality," ISE Magazine. Volume 52, Number 2, February 2020, pages 40-45.
[5] **Aqlan, F.**, and Yang, H., "Detecting Mental Disorders with Sensor-Based Virtual Reality: Gaming Technology Creates Environment that Simulates Lab Assessment Tests," ISE Magazine. Volume 52, Number 10, February 2020, pages 32-35
[6] **Aqlan, F.**, "Virtual Reality for Manufacturing Education," *NSF EEC Grantees Conference*, Arlington, VA, October 22, 2019.
[7] **Aqlan, F.**, "RET Site in Manufacturing Simulation and Automation," *NSF EEC Grantees Conference*, Arlington, VA, October 22, 2019.
[8] **Aqlan, F.**, "A Program to Improve Manufacturing Learning Using Simulation and Automation," *American Society for Engineering Education (ASEE)*, Tampa, FL, June 17, 2019.
[9] **Aqlan, F.**, McAllister, J., and Frank, P., "A Data-Driven Tool for Warehouse Inventory Management" Poster presented at *IBM TechConnect Conference*, IBM, Poughkeepsie, NY, September 25, 2013.
[10] **Aqlan, F.**, "A Decision Support System for Interplant Transshipment Cost Optimization" Poster presented at *IBM TechConnect Conference*, IBM, Poughkeepsie, NY, September 25, 2013.
[11] **Aqlan, F.**, and Lam, S.S., "Supply Chain Risk Modeling and Management," Poster presented at *Industrial and Systems Engineering Research Conference*, San Juan, PR, May 18, 2013.
[12] **Aqlan, F.**, "Ergonomic Assessment of Logic Cards Test Process" Poster presented at *IBM TechConnect event*, IBM, Poughkeepsie, NY, September 25, 2012.

TECHNICAL REPORTS

[1] Aqlan, F., Lam, S.S., and Srihari, K., "Interplant Cost Optimization Tool," User Manual, IBM, Poughkeepsie, NY, February 2013.
[2] Aqlan, F., Lam, S.S., and Srihari, K. "Redesign of Transportation Carts," Project Report, IBM, Poughkeepsie, NY, September 2012.
[3] Aqlan, F., Lam, S.S., and Srihari, K. "ETN Ergonomic Study for 6S Workplace Improvement," Project Report, IBM, Poughkeepsie, NY, June 2012.
[4] Aqlan, F., Lam, S.S., and Srihari, K. "Ergonomic Assessment of Logic Cards Fab Test Process," Project Report, IBM, Poughkeepsie, NY, September 2012.
[5] Aqlan, F., and Yoon, S.W., "A Survey of production and supply chain: Methodologies, features and software," Technical report, State University of New York at Binghamton, October 2010.

GRANTS AND PROPOSALS

FEDERAL GRANTS

[1] Collaborative Research: Replication of a Community-Engaged Educational Ecosystem Model. NSF (IUSE Program). $3,000,000. Role: PI (share: $747K). Grant Period: 2021 – 2025.

[2] RET Site in Manufacturing Simulation and Automation. NSF (RET Program). $596,868. Role: PI. Grant Period: 2021 – 2024.

[3] IUSE: Integrating Undergraduate Learning in Engineering and Business to Improve Manufacturing Education. NSF. $299,998 (awarded: August 2020). Role: Principal Investigator (PI). Grant Period: 2020-2023.

[4] REU Supplement for RIEF Problem Solving project. NSF. $36,500 (awarded: January 2018). Role: Principal Investigator (PI). Grant Period: 2018 – 2021.

[5] Research Initiation: Advanced Modeling of Metacognitive Problem Solving and Group Effectiveness in Collaborative Engineering Teams. NSF. $199,875 (awarded: August 2018). Role: Principal Investigator (PI). Grant Period: 2018 – 2021.

[6] REU Supplement for RET Site in Manufacturing Simulation and Automation. NSF. $13,358 (awarded: December 2017). Role: Principal Investigator (PI). Grant Period: 2017 – 2021.

[7] RET Site in Manufacturing Simulation and Automation. NSF. $553,966 (awarded: September 2017). Role: Principal Investigator (PI). Grant Period: 2017 – 2021.

[8] Workshop on Replication of a Community-Engaged Educational Ecosystem. NSF. $27,438.00 (awarded: January 2020). Role: Site PI. Grant Period: 2020 – 2021.

GOVERNMENT GRANTS

[1] Industry 4.0 Center of Excellence to Advance Industry 4.0 in NWPA. Pennsylvania's Manufacturing Training-to-Career program. $200K (awarded February 2021). Role: Lead faculty for data analytics training. Grant Period: 2021 – 2022. Penn State Behrend.

INTERNAL GRANTS

[1] AI-assisted Virtual Reality Environments for Assessment of Neurocognitive Disorders. Penn State Behrend. $14,986 (awarded May 2020). Role: Principal Investigator (PI).

[2] Integrating 21st Century Skills into Manufacturing Simulations. Schreyer Institute for Teaching Excellence. $5,000 (awarded July 2017). Role: Principal Investigator (PI).

[1] "Development of an Online Database for the Engineering Research Labs at Penn State Behrend," Faculty Advisor, Penn State, $4,700 (student: $4,200, faculty: $500), June – August 2018.

[2] "Data-Driven Predictive Modeling and Prescriptive Optimization of Medicare Spending," Faculty Advisor, Penn State, $4,700 (student: $4,200, faculty: $500), June – August 2018.

[3] "Design and Analysis of an Ergonomic Single Channel Mechanical Pipette," Faculty Advisor, Penn State, $4,700 (student: $4,200, faculty: $500), June – August 2018.

[4] "A Data Mining Framework for Crime Analysis and Prediction," Faculty Advisor, Penn State, $4,700 (student: $4,200, faculty: $500), June – August 2017.

[5] "Assessment of musculoskeletal loading on fingers during pipetting: A Digital Human Modeling Approach," Faculty Advisor, Penn State, $4,700 (student: $4,200, faculty: $500), June – August 2017.

[6] "Predictive Analytics Models for Student Admission and Enrollment," Faculty Advisor, Penn State Behrend, $7,00, August – December 2017.

[7] "Ergonomic Assessment of an Automotive Service Center Using Digital Human Modeling," Faculty Advisor, Penn State Behrend, $7,00, August – December 2017.

[8] "Evaluation of Patient Handling Techniques Using Digital Human Modeling," Faculty Advisor, Penn State Behrend, $7,00, August – December 2017.

[9] "Development of an Information System for Engineering Research Labs at Penn State Behrend," Faculty Advisor, Penn State Behrend, $1,400, August 2017 – May 2018.

[10] "Impact of Curved Racks in Retail Stores on Shopper Visual Experience: A Digital Human Modeling Approach," Faculty Advisor, Penn State Behrend, $7,00, August – December 2017.

[11] "Ergonomic Assessment of Snow Shoveling Using Digital Human Modeling," Faculty Advisor, Penn State Behrend, $7,00, January – May 2017.

[12] "Design and Implementation of an Information System for Crime Analysis in Erie City, PA" Faculty Advisor, Penn State Behrend, $1,400, August – December 2016.
[13] "Ergonomic Assessment of Load Carriage Equipment among School Students," Faculty Advisor, Penn State Behrend, $1,400, August – December 2016
[14] "Chronic Kidney Disease Diagnosis Using Predictive Analytics Techniques," Faculty Advisor, Penn State Behrend, $700, August – December 2016. (2nd place, Sigma Xi Conference, 2017).
[15] "Assessment of Patient Handling and Transfer Using Lean Techniques and Digital Human Modeling," Faculty Advisor, Penn State Behrend, $700, August – December 2016.
[16] "Study of Operating Rooms Block Scheduling to Improve Block Utilization," Faculty Advisor, Penn State Behrend, $700, August – December 2016.
[17] "Assessment of Ergonomic Risks in Engineering Research Labs at Penn State Behrend," Faculty Advisor, Penn State Behrend, $1,400, January – May 2016. (1st place, Sigma Xi Conference, 2016).

SOFTWARE AND EQUIPMENT GRANTS

[1] FlexSim: 3D Simulation Modeling and Analysis Software, 2020.
[2] "NX high-end CAD/CAM/CAE, Teamcenter, and Fibersim" Siemens Corporation, In-Kind Software Grant, Principal Investigator, 2019, $10,800,000.
[3] "IBM SPSS Data Analytics Software," IBM Corporation, In-Kind Software Grant, Principal Investigator, 2016, 2017, 2018, 2019, $50,000.
[4] "RoboDK Software," RoboDK Company, In-Kind Software Grant, Principal Investigator, Summer 2018, $89,850.
[5] "Ergonomic Assessment Tools," Penn State Behrend – School of Engineering, Principal Investigator, Summer 2017, $2,609.36.
[6] "Metrology Tools," Penn State Behrend – School of Engineering, Principal Investigator, Summer 2017, $2,034.9.
[7] "Computer Aided Engineering and Digital Human Modeling Software for Engineering Education at Penn State Behrend," Siemens Corporation, In-Kind Software Grant, Principal Investigator, Summer 2016, $20,870,310.
[8] "Ergonomic Assessment Tools - Sound Meter, Light Meter, and Psychrometer," Penn State Behrend – School of Engineering, Principal Investigator, Spring 2016, $649.5.
[9] "Lean Factory Simulation Kit," Penn State Behrend – School of Engineering, Principal Investigator, Fall 2015, $2,150.29.

PENDING PROPOSALS

[1] AI-Augmented Virtual Reality to Optimize Triadic Interactions in AD/ADRD Care Delivery. $3.8M. NIH. Role: MPI. (submitted June 2021)
[2] NSF Center for Health Organization Transformation (CHOT). $205,000. NSF (IUCRC program). Role: Co-PI. (submitted: June 2021)
[3] The Northwestern Pennsylvania STEM & Industry 4.0 Initiative. U.S. Department of Commerce. $200K. (submitted October 2020). Role: Co-Investigator.
[4] GOALI/Collaborative Research: Energy-Smart Stochastic Optimization of Hybrid Re/Manufacturing Systems. NSF (CMMI Program). $500,000. Role: Lead PI (share: $300K). (resubmitted June 2020)

NOT-FUNDED PROPOSALS (SAMPLE)

[1] Developing 21st Century Skills for Smart Manufacturing. PA Department of Labor. $300,000. Role: PI. (submitted March 2020)
[2] REU Site in Manufacturing Simulation and Automation. NSF (REU Program). $364,364. Role: PI. (resubmitted August 2020).
[3] Integrating Art and Science to Advance STEAM-based Manufacturing Education and Innovation. NSF (DRK Program). $3,000,000. Role: Lead PI. (resubmitted October, 2020)
[4] C-STEAM Manufacturing Simulation Initiative. PA Department of Education. $500,000. Role: PI.
[5] Intelligent Simulations and Dynamic Models to Enhance Adaptive Problem-Solving. NSF (RFE Program). $350,000. Role: PI. (resubmitted March 2020)

[6] An Ecosystem for Smart Manufacturing Training and Career Pathways. NSF (ATE Program). $300,000. Role: External Consultant. (submitted October 2020)
[7] A Design-based Learing Approach for Rethinking K-12 Advanced Manufacturing Education. NSF (RIEF Program). $200,000. Role: External Evaluator. (submitted November 2020)
[8] Planning IUCRC at Penn State Behrend: Center for Cyber Physical Production Systems Innovation (CCPPSI). NSF. $14,876. Role: Co-PI.
[9] NSF-MRI: Acquisition of a Motion Analysis System for Enabling Interdisciplinary Research. NSF. $280,983. Role: Co-PI.
[10] CAREER: Intelligent Simulations and Dynamic Models to Enhance Adaptive Problem-Solving. NSF. $511,470. Role: PI.
[11] Research Initiation: Advancing Quality and Lean through Artificial Intelligence and Virtual Reality. NSF. $200,000. Role: Co-PI.

INDUSTRY FUNDING (TOTAL: ~ $200,000)

[1] "Predictive Analytics to Estimate the Value of Learning at IBM," IBM Learning, Graduate Research Associate, ~ $50,000, June, 2013 – December, 2014. Role: Graduate Research Associate.
[2] "Business Intelligence and Modeling for Server Manufacturing," Graduate Research Associate, IBM Corporation, ~ $100,000, June, 2011 – June, 2013. Role: Graduate Research Associate.
[3] "Simulation analysis of Kaiser pharmaceutical automated prescription filling system," Graduate Research Associate, Innovation Associates Company, ~ $50,000, January – June, 2011. Role: Graduate Research Associate.

STUDENT ADVISING

DOCTORAL STUDENTS

[1] Eunsik Kim, Penn State University Park. Research Project Advisor. Project Title: Development of an Ergonomic Four-Finger-Push Manual Pipette Design. Graduated: 2019. (now assistant professor at University of Windsor).
[2] Rui Zhu, Penn State University Park. Research Project Advisor and Dissertation Committee Member. Project Title: Advanced Modeling of Metacognitive Problem Solving and Group Effectiveness in Collaborative Engineering Teams. (NSF Grant #1830741). Expected Graduation: July 2021.
[3] Haedong Kim, Penn State University Park. Research Project Advisor. Project Title: Phase II I/UCRC Pennsylvania State University Site: Center for Health Organization Transformation. (NSF Grant #1624727). Expected Graduation: 2024.
[4] Ahmed Gailan Qasem, Binghamton University. Research Project Co-advisor. Project Title: Simulation-optimization Applications in Healthcare. Expected Graduation: 2023.

MASTER THESES

[1] Zaid Kbah, MSc in Engineering and Operations Management, University of New Haven. *Thesis*: Risk Assessment of Natural Gas Industry using Continuous Simulation. Graduated April 2016. [published two conference papers and one journal paper] (now a faculty at a university in Iraq)
[2] Mohammad Alrezq, MSc in Industrial Engineering, University of New Haven. *Thesis*: Design of Drinking Water Distribution Systems Using a Hybrid Simulation-Optimization Approach. Graduated April 2016. [published one conference paper] (now pursuing PhD at Virginia Tech)

OTHER GRADUATE STUDENTS

[1] Gwendolyn Lowery, Master of Manufacturing Management, Penn State Behrend. Project Title: Deliver4U: A Case Study for Teaching Lean Six Sigma. Graduated Summer 2019.
[2] Farzad Jalali, Master of Manufacturing Management, Penn State Behrend. Project Title: Development of Hands-on Simulation Games for Manufacturing Systems. Graduated Summer 2018.

SENIOR DESIGN PROJECTS

[1] McRandal, M., Padilla, D.M., and Sennett, R., "FUNctional Art: Trash Removal with Aesthetic Approval," (August 2020 – May 2021).

[2] Boueiri, C., Feliciano, D., Inklovich, Z., Rosalinda, S., "Analysis of Patient No-shows on Clinical Work Flows," Sponsored by SKF. (August 2019 – May 2020).
[3] Ciferno, S., Schlick, G., Romatowski, Y., Wustin, E., "In process parts storage and handling," Sponsored by Shriners Hospitals for Children. (August 2019 – May 2020).
[4] DeVarney, A., Kim, L., Lata, M., "Designing Ergonomic Workstation," Sponsored by SKF. (August 2018 – May 2019).
[5] Bowers, N., Cirelli, J., Lang, J., Andrzejewski, A., "Analysis of Medicare Spending Per Beneficiary (MSPB) at UPMC Hamot." Sponsored by UPMC Hamot. (August 2017 - May 2018).
[6] Collins, K., Gayton, C., Bechaalani, C., "Process Improvement of Pattern Handling and Storage." Sponsored by Urick Foundry. (August 2017 - May 2018).
[7] Mohamed Badawy, Dan Smith, and Zachary Puhala, BSc in Industrial Engineering, Penn State Behrend. *Senior Design Project*: Shop Floor Scheduling Optimization. Graduated May 2017.
[8] Angela Zorn and Andrew Lesko, BSc in Industrial Engineering, Penn State Behrend. *Senior Design Project*: Improving First Case Starts at UPMC Hamot. Graduated May 2016.

INDUSTRY PROJECTS

Innovation Associates, Johnson City, New York

- Simulation analysis of Kaiser pharmaceutical automated prescription filling system. Innovation Associates (January – June 2011)

IBM, Poughkeepsie, New York

- Internal Transportation and Interplant Transshipment
  - A dashboard for dynamic batch size and real time transportation for node subassemblies (January – May 2013)
  - A tool for interplant transshipment cost optimization focusing on US, Singapore, and France (August 2012 – January 2013)
  - Analysis of transfer order cycle time (June – August 2012)
  - Redesign of internal transportation carts for I/O cards (October 2011 – May 2012)
- Assessment of Ergonomic Occupational Risks
  - ETN ergonomic study for 6S workplace improvement (November 2012 – April 2013)
  - Ergonomic assessment of logic cards test process. Project won an award and was considered by OSHA as best practice (January – July 2012)
- Inventory and Space Management
  - A hierarchical data-driven inventory management system (August – December 2013)
  - A decision support system for inventory balancing - Phase 1 (April – August 2013)
  - A simulation study for consolidating node production lines (June – December 2012)
- Order Management and Defect Analysis
  - A problem-solving algorithm for defect management (August – December 2013)
  - A decision support system for order offload (January – March 2013)
  - Prioritization of customer orders (July – December 2011)

TEACHING

University of Louisville

- Engineering Economy (undergraduate)

Penn State Behrend

- Statics (undergraduate)
- Engineering Analytics (undergraduate)
- Statistical Methods for Industrial Engineering (undergraduate)
- Manufacturing System Design and Analysis (undergraduate)
- Product Design, Specification and Measurement (undergraduate)
- Manufacturing Systems Planning and Control (graduate)
- Lean Six Sigma Green Belt (certification)

University of New Haven

- Decision Making under Uncertainty (graduate)
- Applied Statistics (undergraduate)
- Design of Experiments (graduate)
- Engineering Economy (graduate and undergraduate)

Binghamton University

- Modeling and Simulation (TA) (graduate)

ENGINEERING PROGRAMMS AND COMPUTER SKILLS

- Engineering Design: Autodesk Inventor, AutoCAD, Mechanical Desktop, SmartDraw
- Simulation: Arena, Anylogic, Simio, Simcad, NetLogo, RoboDK, @Risk, Crystal Ball
- Statistical Analysis & DOE: Minitab, SAS, SPSS, Design-Expert, Expert-Fit, Stat-Fit
- Operating Systems: Windows NT/98/2000/XP/VISTA/7/8, Mac X
- Decision Making: Expert-Choice (AHP), Super Decisions (ANP)
- Data Mining: SPSS Modeler, R, RapidMiner, Orange, SAS
- IBM Lotus Software: Lotus Notes and Lotus Symphony
- Database Application Software: BRIO, SPSS Modeler
- Programming Languages: VBA/VB/C++/MATLAB
- Operations Research: CPLEX, LINGO, MATLAB
- Microsoft Office: MS Office/Visio/MS Project
- Inventory Management: ILOG IPFA, SAP
- Digital Human Modeling: Tecnomatix Jack

JOURNAL REFEREE

- International Journal of Supply Chain and Inventory Management
- International Journal of Computer Applications in Technology
- Journal of Translational Engineering in Health and Medicine
- International Journal of Computer Integrated Manufacturing
- International Journal of Industrial and Systems Engineering
- Jordan Journal of Mechanical and Industrial Engineering
- IEEE Transactions on Device and Materials Reliability
- International Journal of Production Economics
- Journal of Materials: Design and Applications
- International Journal of Production Research
- IEEE/OSA Journal of Display Technology
- International Journal Medical Informatics
- Computers and Industrial Engineering
- Expert Systems with Applications
- International Journal of Logistics
- Pakistan Journal of Statistics
- Mathematics
- Kybernetes

CONFERENCE REFEREE

- International Conference on Industrial Engineering and Operations Management (IEOM)
- Institute of Industrial and Systems Engineering (IISE) Annual Conference and Expo
- American Society for Engineering Education (ASEE) Annual Conference and Expo
- Frontiers in Education (FIE) Conference
- Winter Simulation (WinterSim) Conference

COMMITTEE SERVICE (INTERNAL)

- Member of the research committee of the school of engineering, Penn State Behrend. (November 2020 – August 2021).
- Curriculum Committee, School of Engineering, Penn State Behrend, Member. (January 2016 – August 2021).
- Engineering Safety Committee, School of Engineering, Penn State Behrend, Member. (January 2014 – August 2021).
- Effect of COVID19 on Graduate Education and Research, Ad Hoc Committee for COVID19, Penn State University Park, Committee Member. (November 2020 – August 2021).
- Engineering Syllabi Review Committee, Penn State University, Member. (May 2015 – August 2021).

COMMITTEE SERVICE (EXTERNAL)

- Advisory Board Member for Pre-engineering Programs, Erie High School, Board Member. (August 2019 - Present).
- Member of the Comprehensive Local Needs Assessment Committee - Erie High School, Erie High School, Member. (November 2019 - Present).
- Judge for the Shark Tank Competition, Cathedral Prep High School, Judge. (November 2019 - Present).
- External evaluator: University of Louisville (2020), Auburn University (2021), Purdue University (2021).

IN THE NEWS

- TV Interview – The Insider
- IISE Northeast Regional Conference
- Erie 40 Under 40: Class of 2019
- Software Gifts Advance Student Learning
- NSF RIEF – Virtual Reality Simulations
- NSF RET Site in Manufacturing Simulation and Automation
- Integrating Soft Skills with Manufacturing Simulations
- Ergonomic Research – Siemens Tecnomatix News
- Graduate Excellence in Research Award – Binghamton University
- Success Story – Binghamton Graduate School

Updated: September 2021