



IEOM Society

"Achieving and Sustaining Operational Excellence"

www.ieomsociety.org

4th North American – Toronto, Canada

October 25, 2019

Undergraduate Student Paper Competition Awards Sponsored by SIEMENS

First Place

ID 156 Implementation of Analytics Procedures to Predict Stock-Outs in Store for a Retailer. A Case in Mexico
Cinthya Yaresi Tamez Silva, Ana Patricia Sepúlveda González, Martín Flores Maradiaga, Juan Ignacio González Espinosa, Business Management Engineering Department, University of Monterrey, Mexico

Second Place

ID 387 Reducing Variation at the Measuring System for the Copper Harpin Quality Inspection in Handling Material Stations
Sara Renata González Cruz and Regina Márquez Reynoso, Instituto Tecnológico y de Estudios Superiores de Monterrey, Querétaro, México

Third Place

ID 307 Incorporate Data Analytics Tools to Optimize the SLP Method with Application to a Plant of a Leading Global Company
Frida Aizaneth Sevilla Medina, Silvia Stephanie Arreola Castillo, Laura Valeria González Aguirre and Edgar Granda, Universidad De Monterrey, Mexico

Graduate Student Paper Competition Awards sponsored by EATON Corporation

First place

ID 100 Aircraft Engine Remaining Useful Life Prediction Framework for Industry 4.0
Hussein A. Taha, Ahmed H. Sakr and Soumaya Yacout, Department of Mathematics and Industrial Engineering, Polytechnique Montréal, Canada

Second Place

ID 434 Neural Network and Internet of Things Implementation to aid Pedestrian Safety
Ujjwal Khanna and Anjali Awasthi, Concordia University Concordia Institute for Information Systems Engineering (CIISE), Montreal, QC, Canada

Third Place

ID 230 Impact of a Cloud-Based Applied Supply Chain Network Simulation Tool on Developing Systems Thinking Skills of Undergraduate Students
Jeanne-Marie Lawrence, Niamat Ullah Ibne Hossain, Morteza Nagahi and Raed Jaradat, Department of Industrial and Systems Engineering, Mississippi State University, Starkville, MS 39759, USA

Doctoral Dissertation Awards

First place

ID 350 Developing a Dynamic Model for Natural Gas Supply And Demand System to Optimize Pricing and Investment Policy
Farzaneh Daneshzand, University of Waterloo, Canada

2nd place

ID 505 Short-range Electric Cars Used in Multi-Hour Travels
Douglas W.E. Ferrier, College of Technology, Indiana State University, Terre Haute, IN, USA

Third place

ID 229 Development of an Instrument to Assess the Performance of Systems Engineers
Niamat Ullah Ibne Hossain, Morteza Nagahi, Raed Jaradat, Department of Industrial and Systems Engineering, Mississippi State University, USA
Charles Keating, Department of Engineering Management and Systems Engineering, Old Dominion University, VA, USA

Master Thesis Competition Awards

ID 257 Forecast Model for Return Quality in Reverse Logistics Networks

Competitions Winners and Best Track Papers – 2019 IEOM Toronto Conference

Amirah Mohammed Ashraf and Walid Abdul Kader, Department of Mechanical, University of Windsor, Windsor, Canada

Undergraduate Poster Competition Awards

First Place

ID 407 The 2017-2018 Evaluation of the Operational Excellence Index Impact over the Private Sector Sustainability in Puerto Rico
Natali A. Camacho Cruz, Department of Industrial and Systems Engineering, Polytechnic University of Puerto Rico, San Juan, PR 00918, USA

Second Place

ID 501 Using Design of Experiments to Understand Effects of Chemical and Plasma Functionalization on the Surface Tension of Carbon Nanotubes

Mario Aquino, Yourri-Samuel Dessureault, Gabriela Gomez, Ayou Hao, and Richard Liang, Department of Industrial & Manufacturing Engineering, Florida A&M University – Florida State University College of Engineering, Tallahassee, FL 32310, USA

Second Place

ID 521: Statistical Analysis of the Drying Process at a Car Wash
Aisha Torres, Department of Industrial Engineering, Polytechnic University of Puerto Rico

Third Place

IOT in Healthcare Smart Pill by Veronica Towaianski

Third Place

ID 494 Computer Guided Laparoscopic Surgery Training
Gage Driscoll, University of Arizona Honors College, United States

Graduate Poster Competition Awards

First Place

ID 392 The Impact of Machine Learning Algorithms on Benchmarking Process in Healthcare Service Delivery
Egbe-Etu Emmanuel Etu, Celestine Aguwa, and Leslie Monplaisir, Dept. of Industrial & Systems Engineering, Wayne State University, Detroit, USA

Suzan Arslanturk, Department of Computer Science, Wayne State University, Detroit, MI 48202, USA

Joseph Miller, Department of Emergency Medicine, Henry Ford Hospital, Detroit, MI 48202, USA

Second Place

ID 504 Computational Modeling Using Multi-omics to Extract Early Predictive Signatures of T-cells Quality
Odeh-Couvertier V¹, Dwarshuis N², Colonna M³, Huang D², Edison A³, Fernandez F, Roy K², Kotanchek T⁴, and Torres-García W¹

¹Department of Industrial Engineering, University of Puerto Rico, Mayaguez, P.R

²Georgia Institute of Technology, Atlanta, GA

³University of Georgia, Athens, GA

⁴Evolved Analytics

Third Place

ID 406 Towards Optimization by Matching of Response Surfaces: finding Windows of Maximal Similarity
Díaz Pacheco, Verónica, Acosta Cervantes, Mary C. and Cabrera-Ríos, Mauricio, The Applied Optimization Group at Mayagüez, Industrial Engineering Department, University of Puerto Rico, Mayagüez, PO Box 9043, Mayagüez, PR, 00681, USA

Third Place

ID 508 Dynamic Operations of Distributed Data Center Electricity Load for use as Distributed Energy Resource (DER)
David D Gower, Department of Systems Science and Industrial Engineering, Binghamton University, Binghamton, NY 13902, USA

Undergraduate STEM Research Competition Awards

First Place

ID 507 WIP: How 3D Printing and CAD/CAM Design can Influence Students in Classes Outside of STEM; Inspiring Them to Pursue Careers in STEM

Fernando Monroy Faudoa, University of Texas, El Paso, United States

Second Place

ID 503 Temperature Regulation of the Human Body using Thermoelectric Peltier Modules
Brandon Soundara, Department of Engineering Technology, Middle Tennessee State University, 1301 E Main St, Murfreesboro, TN, USA

Third Place

ID 361 Humans' Perceptions of Handwritten Digits Generated by a Generative Adversarial Network
Jia Lin Cheoh, Department of Computer Science, Research Center for Open Digital Innovation, Purdue University, West Lafayette, Indiana, USA

Sabine Brunswicker, Research Center for Open Digital Innovation, Purdue University, West Lafayette, Indiana, USA

Simulation Competition Awards

First Place

ID 440 Using of Optimal Simulation Modelling to Reduce Radiotherapy Cancer Waiting Time and Improve Survival
Malakeh Saberi and Anjali Awasthi, Concordia Institute for Information Systems Engineering (CIISE), Concordia University, Montreal, QC, Canada

Second Place

ID 424 Impact of Bus Rapid Transit Efficiency on Vehicle Traffic of a Brazilian City
Augusto Ghiraldi, Felipe K. Sousa Pereira, Henrique Ewbank de M. Vieira and Rodrigo Luiz Gigante, Industrial Engineering Department, Facens, Sorocaba, Brazil

Third Place

ID 430 Simulation and Optimization of Manufacturing Systems
Kaustubh Kale, Lawrence Technological University, Michigan, USA

Supply Chain Competition Award

ID 435 Utilizing the Blockchain Technology as an Effective Means for Supply Chain Traceability
Chinedu Egbuonu, Concordia University, Montreal, Quebec, Canada

Best Track Papers Awards

Case Studies

ID 41 Use of Biogas as Alternative Fuel for Tobacco Curing: Case for Zimbabwe
Ignatio Madanhire, Department of Mechanical Engineering, University of Zimbabwe, Zimbabwe
Simon Chinguwa, Department of Mechanical Engineering, University of Zimbabwe, Zimbabwe
Tendai Sakala, Department of Mechanical Engineering, University of Zimbabwe, Zimbabwe
Charles Mbohwa, Department of Quality Management and Operations Management, University of Johannesburg, South Africa

Data Analytics

ID 90 Data-driven Power generation Design and Operation under Demand Uncertainty
Ali Elkamel, Khalifa University of Science and Technology, United Arab Emirates

Design and Analysis

ID 135 Improved design of metered-dose inhaler techniques
Aezeden Mohamed, Department of Mechanical Engineering, Papua New Guinea University of Technology, Lae, Papua New Guinea
Peter Oyekola, Department of Mechanical Engineering, Papua New Guinea University of Technology, Lae, Papua New Guinea
John Pumwa, Department of Mechanical Engineering, Papua New Guinea University of Technology, Lae, Papua New Guinea

Energy

ID 167 An Optimization Strategy for Managing Surplus Electricity through P2G Pathways
Lingyi Gu, Department of Chemical Engineering, University of Waterloo, Waterloo, Ontario, Canada
Jeeyoung Kim, Department of Chemical Engineering, University of Waterloo, Waterloo, Ontario, Canada
Joohyung Ko, Department of Chemical Engineering, University of Waterloo, Waterloo, Ontario, Canada
Azadeh Maroufmashat, Department of Chemical Engineering, University of Waterloo, Waterloo, Ontario, Canada
Michael Fowler, Department of Chemical Engineering, University of Waterloo, Waterloo, Ontario, Canada
Ali Elkamel, Department of Chemical Engineering, University of Waterloo, Waterloo, Ontario, Canada

Engineering Education

ID 155 The Difference between Teams with No Female Students and Teams with Female Students for Peer Evaluation Behavior in Engineering Education
Chuhan Zhou, Department of Engineering Education, Purdue University, West Lafayette, USA
Sunjae Choi, Department of Engineering Education, Purdue University, West Lafayette, USA
Behzad Beigpourian, Department of Engineering Education, Purdue University, West Lafayette, USA
Siqing Wei, Department of Engineering Education, Purdue University, West Lafayette, USA
Daniel M Ferguson, Department of Engineering Education, Purdue University, West Lafayette, USA
Matthew W Ohland, Department of Engineering Education, Purdue University, West Lafayette, USA

Engineering Management

ID 14 Modeling of Enablers for Implementing ICT Enabled Wireless Control in Industry: an Integrated ISM and Fuzzy MICMAC Approach
Dr. Jayalakshmi.B, Instrumentation and Control Engineering Department, NSS College of Engineering, Palakkad, Kerala, India.
Haritha .H, Programmer Analyst, Cognizant Technology Solutions, Kochi, INDIA
Abijith Maniyeri, MENS, University of Southern Queensland, Toowoomba, AUSTRALIA

Sustainability

ID 141 Fuzzy AHP-based Study of Barriers to the Implementation of Cleaner Production in Textile Industry
Farzana Islam, Ahmed Shoyeb Raihan, Bangladesh University of Engineering & Technology, Dhaka, Bangladesh

Industry 4.0

ID 203 An Affordable and Portable Technology for Real-Time Scheduling of Appliances in Smart Homes
Raman, R. Sowers, Department of Industrial and Enterprise Systems Engineering, University of Illinois at Urbana-Champaign, Urbana, USA
R. S. Sreenivas, Department of Industrial and Enterprise Systems Engineering, University of Illinois at Urbana-Champaign, Urbana, USA

Industry Solutions

ID 227 Implementing IoT for the Detection of Production Machine Failures

Ahmed Badwelan, Department of Industrial Engineering, College of Engineering, King Saud University, Riyadh, Saudi Arabia
Moath Alatefi, Department of Industrial Engineering, College of Engineering, King Saud University, Riyadh, Saudi Arabia
Atef M. Ghaleb, Department of Industrial Engineering, College of Engineering, King Saud University, Riyadh, Saudi Arabia
Ali M. Alsamhan, Department of Industrial Engineering, College of Engineering, King Saud University, Riyadh, Saudi Arabia

Innovation

ID 180 Technology-Push based Product Engineering based on Future Scenarios: Application for deriving product strategies at BMW AG
Florian Marthaler, IPEK – Institute of Product Engineering, Karlsruhe Institute of Technology (KIT), Karlsruhe, Germany
Bo Hu, IPEK – Institute of Product Engineering, Karlsruhe Institute of Technology (KIT), Karlsruhe, Germany
Albert Albers, IPEK – Institute of Product Engineering, Karlsruhe Institute of Technology (KIT), Karlsruhe, Germany

Lean

ID 160 Design of new plant layout using lean tools by eliminating wastes in material flow process
Sriram Srinivasan, Department of Mechanical Engineering, University of Windsor, Windsor, Canada
Harita Zikre, Department of Mechanical Engineering, University of Windsor, Windsor, Canada

Human Factors and Ergonomics

ID 151 Product Design Development of Ergonomic Mop: ANOMALI (An Ergonomic Mop for Healthy Life)
Zakka Ugih Rizqi, Department of Industrial Engineering, Islamic University of Indonesia Yogyakarta, Indonesia
Nurahlun Baet, Department of Industrial Engineering, Islamic University of Indonesia Yogyakarta, Indonesia

Supply Chain and Logistics

ID 202 Vehicle Routing Challenges in the Automotive
Robert R. Inman, Chief Data and Analytics Office General Motors Company, Warren, MI, USA
Rana Afzali-Baghdadabadi, Global Purchasing and Supply Chain General Motors Company, Warren, MI, USA
Baiyang Liu, Global Purchasing and Supply Chain General Motors Company, Warren, MI, USA

ID 99 A Stochastic Optimization Approach for Locating Humanitarian Disaster Relief Centers
Parmis Emadi, Department of Industrial Engineering, University of Windsor, Windsor, ON
Zbigniew J. Pasek, Department of Industrial Engineering, University of Windsor, Windsor, ON

ID 142 Modeling of Supply Chain Risk in the Leather Industry
Ahmed Shoyeb Raihan, Department of Industrial & Production Engineering, Bangladesh University of Engineering & Technology Dhaka, Bangladesh
Farzana Islam, Department of Industrial & Production Engineering, Bangladesh University of Engineering & Technology Dhaka, Bangladesh
Syed Mithun Ali, Department of Industrial & Production Engineering, Bangladesh University of Engineering & Technology Dhaka, Bangladesh

Systems Dynamics

ID 140 System Dynamics as a Solution in Increasing Regional Cash of Daerah Istimewa Yogyakarta by Considering Employment Availability and Traffic Congestion
Zakka Ugih Rizqi, Department of Industrial Engineering, Islamic University of Indonesia, Yogyakarta, Indonesia

Manufacturing

ID 235 Analysis and Optimization of MRR in Powder-mixed EDM of AISI 5160 Steel
Neeraj Sharma, Department of Mechanical and Industrial Engineering Technology, University of Johannesburg, Republic of South Africa
Kapil Gupta, Department of Mechanical and Industrial Engineering Technology, University of Johannesburg, Republic of South Africa

Sustainable Manufacturing

ID 233 Analysis and Optimization of Surface Roughness while Machining SS304 using Green Lubricant
Neeraj Sharma, Department of Mechanical and Industrial Engineering Technology, University of Johannesburg, Republic of South Africa
Kapil Gupta, Department of Mechanical and Industrial Engineering Technology, University of Johannesburg, Republic of South Africa

Modeling and Simulation

ID 309 Kinematics and Jacobian analysis of a three DOF sufficiently actuated large scale cable-driven robot with insufficient actuated structure
Kambiz Ghaemi Osgouie, Mechanical Engineering Department, Caspian Faculty of Engineering, University Of Tehran
Assal Haqiqat Pars, Mechanical Engineering Department, Caspian Faculty of Engineering, University Of Tehran
Ali ElKamel, Department of Chemical Engineering, University of Waterloo, Waterloo, Canada.
Azadeh Maroufmashat, Department of Chemical Engineering, University of Waterloo, Waterloo, Canada.

Mathematical Modeling/ Heuristics and Meta-heuristics

ID 181 A Lower Bound Analysis for the Flowshop Scheduling Problem with Makespan Minimization
Bruno de Sousa Alves, Electrical Engineering Department, Polytechnique de Montréal Montréal, Canada
Carlos Ernani Fries, Department of Production and Systems Engineering, Federal University of Santa Catarina, Florianópolis, SC, Brazil

Project Management

ID 149 The influence of early stage project performance: Some project performance and outcome correlate
Hong Long Chen, Department of Business and Management, National University of Tainan, Tainan, Taiwan

Quality

ID 255 Lean Management and Analysis - An Empirical Study of a Traditional Shipbuilding Industry in Indonesia
Yugowati Praharsi, Shipbuilding Institute of Polytechnic Surabaya, Jl. Teknik Kimia Kampus ITS, Indonesia

Competitions Winners and Best Track Papers – 2019 IEOM Toronto Conference

M. Abu Jami'in, Shipbuilding Institute of Polytechnic Surabaya, Jl. Teknik Kimia Kampus ITS, Indonesia
Gagak Suhardjito, Shipbuilding Institute of Polytechnic Surabaya, Jl. Teknik Kimia Kampus ITS, Indonesia
Hui-Ming Wee, Chung Yuan Christian University, Chung Pei, Chung Li City, Taiwan

Reliability and Maintenance

ID 298 A Novel Framework For Calculating The Maintenance Improvement Factor Based On Human Error Factors And Unbiased Expert Judgment

Rogelio Emmanuel Jáuregui Miramontes, Centre for Management of Technology and Entrepreneurship, University of Toronto, Canada
Yuri A. Lawryshyn, Centre for Management of Technology and Entrepreneurship, University of Toronto, Toronto, Canada