

# International Conference on Industrial **Engineering**

## CONFERENCE PROGRAM

Quito, February

20th-22nd, 2019



## Welcome to the International Conference on Industrial Engineering, USFQ SISE IIN2019!

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It is both our honor and our pleasure to officially welcome you to the International Conference on Industrial Engineering.

The Universidad San Francisco de Quito (USFQ) and the Society for Industrial and Systems Engineering (SISE) are pleased to hold the International Conference on Industrial Engineering on February 20-22, 2019, in Quito, Ecuador. The conference brings together a community of students, researchers and professionals from different countries interested in the field of Industrial Engineering.

The conference will focus on the use of engineering design and analysis, while also maintaining a balance between research and application. Additional topics to be covered will be optimization and operations research, ergonomics, human factors and occupational safety, quality engineering, production systems and manufacturing engineering, supply chain and logistics and engineering management.

We hope that the strategies and practices exchanged during this conference will inspire you with new ideas and provide you with many learning opportunities.

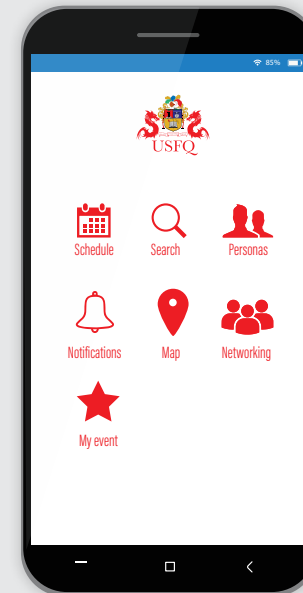
We look forward to your contributions at the conference, and encourage you to take advantage of the many resources and networking opportunities that will be presented throughout the conference.

Sincerely,

Industrial Engineering Department  
Universidad San Francisco de Quito

## Download the official Conference APP!






Get it on Google Play or App Store as  
"USFQ SISE IIN2019"







Or scan the QR

# Legend

International Conference on  
Industrial **Engineering**

-  Ergonomics, Humans Factors and Occupational Safety
-  Quality Engineering
-  Production Systems and Manufacturing Engineering
-  Engineering Management
-  Supply Chain and Logistics

-  Optimization and Operations Research
-  Student Presentations
-  P# = Presentation number
-  S# = Submission number Easychair



Wednesday, February 20th

		Teatro Shakespeare		Teatro Calderón de la Barca		Salón Azul
8:00		Registration				
9:00	9:30	Opening Ceremony				
9:30	10:10	Plenary 1: Ximena Cordova, "The Liberal Arts and an Industrial Engineering Education"				
10:10	10:40			Coffee Break & Sessions Change		
10:40	11:00	P1	Carolina Chávez, "Improving freight movement: Location of urban transfer centers for the Historic Center in the city of Quito"(S48)	P2	Dominique Almendariz, Annel Saavedra "The use of Mixolab to predict the quality of wheat flour partially substituted by soursop residues flour for bread production through a process mixture design"(S52)	
11:00	11:20	P3	Santiago Najera, "Using comparative cost model to optimize the production decisions in a food factory"(S49)	P4	Daryl Santos, "Quality Control techniques utilized to reduce nonconformities in Warehouse Management Software" (S53)	
11:20	11:40	P5	Verónica León, "Sustainability performance in food supply chains"(S55)	P6	Daryl Santos, "The effect of customer satisfaction surveys on attach rate in a B2B environment"(S54)	
11:40	11:55			Sessions Change		
11:55	12:15	P7	Luis Alberto Tilleria, "Stochastic risk cost benefit analysis aligned to asset management strategy, how to maximize profitability in the life cycle in power generation systems in the oil and gas industry"(S10)	P8	Gabriela Serrano, "Application of the Lean Six Sigma methodology in the dairy industry: Case study in the manufacture of fresh cheeses, mozzarella cheese, and butter"(S21)	
12:15	12:35	P9	Santiago Najera, "Mathematical model to optimize the scheduling of animal harvesting in livestock production"(S36)	P10	Wendy Velasco, "Latin american schoolchildren anthropometry: Study of the anthropometric differences of the rural and urban zones in Cotopaxi, Ecuador."(S47)	
12:35	12:55	P11	José Guitierrez, "Routes, frequency and stop nodes reconfiguration for urban buses on a square kilometer in Bogota city, through mathematical modeling"(S40)	P12	Pablo Dávila, "Traditional photogrammetry with low cost scanners for Anthropometry"(S62)	
12:55	14:15			Time for lunch		
14:15	14:45	Performance				
14:45	15:25	Plenary 2: Jeffrey Fernandez, "The constraints of applying ergonomic guidelines in Latin America"				
15:25	15:40			Sessions Change		
15:40	16:00	P13	Natalia Montalvo, Erik Guerron, "Productivity improving of the Quinoa's Snack production line of a cereal processing company"(S4)	P14	Juan Carlos Llivisaca, "Model to ensure suppliers development in large manufacturing companies: a continuous improvement approach"(S2)	Workshop by the International Ergonomic Association (IEA) director Margaret Graf, "Promoting Ergonomics and Human Factors in Ecuador"
16:00	16:20	P15	Andrés Sanchez, "Predictive maintenance of bearings through IoT and cloud-based systems"(S19)	P16	Dorian Mora, "Challenges of Corporate Social Responsibility (CSR) in Industry: an analysis towards new technologies and productivity"(S17)	
16:20	16:50			Coffee Break & Sessions Change		
16:50	17:10	P17	Jonnatan Aviles, "A method for application of Lean techniques and queuing theory in food services"(S14 )	P18	Cristina Padilla, "Possible application of Six Sigma Methodology for the comparison of medical products"(S39)	
17:10	17:30	P19	Estefanía Pérez, "Lean Manufacturing implementation in management of residues in recycling industry"(S43)	P20	María José González, Juan Manuel Maldonado "Quality systems certification in Ecuador, ISO 9001 Standard analysis"(S12)	
17:30	18:00					



Thursday, February 21st

		Teatro Shakespeare		Teatro Calderón de la Barca		Salón Azul
8:00		Registration				
9:15	9:30	Opening Address				
9:30	10:10	Plenary 3: Bernard Martin, "Occupational muscle fatigue: The legs and a pain in the neck"				
10:10	10:40					
10:40	11:00	P21	Rodrigo Moreno, "Systematic Review of the Stable Matching Problem"(S56)	P22	Annel Saavedra, Carolina Chávez, "Applied statistics in a new product development: a pedal-powered washing machine design for people with scarce resources"(S35)	
11:00	11:20	P23	Juan Carlos Letechi, Isabel Alcívar, "The art of linear programming for a healthy and economical diet"(S31)	P24	Boris German, "Management of Energy Systems Research Projects"(S26)	
11:20	11:40	P25	Martín Salvador, "Application of a Mobile Facility Routing Problem in a delivery company"(S57)	P26	Marcelo Aragón, "Proposed tactical model for the implementation of Industry 4.0 for the generation of competitive advantage in Ecuadorian SMEs" (S38)	
11:40	11:55			Sessions Change		
11:55	12:15	P27	Paúl Rivera, "A real case study describing a methodology for selection of computing production scheduling approach in a factory with combined production schemes of flexible job shop within semi-independent production lines in low systemized and digitalized environment."(S27)	P28	María Gloria Román, Andrea Dávila, "Physiological effects of standing work on edema and muscle fatigue: A field study using compression socks"(S18)	
12:15	12:35	P29	Alfredo Valarezo, "Remanufacturing of oil&gas components: The benefits in a circular economy"(S50)	P30	Victor Galarza, "Efficiency depends on our mind"(S51) Spanish	
12:35	12:55	P31	Daniel Baquero, "Mobile Warehouses: Forecast and inventory management methodology"(S58)	P32	Esteban Carrera, "Challenges of Ergonomics in Ecuador"(S61)	
12:55	14:15			Time for lunch		
14:15	14:45	Performance				
14:45	15:25	Plenary 4: Anand Subramanian, "Role of Industrial Engineers in Improving Healthcare Quality and Delivery"				
15:25	15:40			Sessions Change		
15:40	16:00	P33	Paola Alarcón, Daniel Barreno "Micro Management of the Supply Chain: Analysis of micro and small companies in the metal-mechanic sector in Pichincha – Ecuador"(S46)	P34	Pablo Burneo, "Problem solving throughout Kaizen Event implementation. Study in a wood industry"(S5)	Workshop by SISE's president Jeffrey Fernandez, Anand Subramanian, "Occupational Ergonomics: Problem Identification and Practical Solutions"
16:00	16:20	P35	Bernardo Puente, "Freight trip generation modeling and data collection processes in Latin American cities. Modelling framework for Quito and generalization issues"(S44)	P36	Rolando Calero, "Strategies for Polyhydroxyalkanoates (PHAs) Production by mixed culture using cheese whey as substrate."(S9)	
16:20	16:50	Coffee Break & Sessions Change				
16:50	17:10	P37	Georgina Riosvelasco, "Business model as a tool for Supply Chain Horizontal Collaboration"(S1)	P38	Roberto Bernal, "Critical success factors for ERP implementation in SMEs: A systematic review"(S41) Spanish	
17:10	17:30	P39	Marcelo Aragón, "Optimization of resources in the supply chain through additive manufacturing."(S45) Spanish	P40	Galo Mosquera, "A new distribution strategy for Psychotropic and Cold chain products in a pharmaceutical company"	
17:30	17:45			Sessions Change		
17:45	18:05	SISE Overview, Jeffrey Fernandez & Daryl Santos				
18:15	21:00			Dinner (Vía Bonita)		

Friday, February 22nd

		Teatro Shakespeare		Teatro Calderón de la Barca	
8:00		Registration			
9:00	9:15	Opening Address			
9:15	9:55	Plenary 5: Ruben Proaño, "Insights from an optimization-based approach for redesigning the global vaccine market"			
9:55	10:05	Sessions Change			
10:05	10:25	P41	José Miguel Cordero, Jamila Fernández "Operative Pre-diagnostic analysis of services business, under Lean and TOC perspective. A case study."(S15)	P42	Nancy Velasquez, "Critical success factors for the implementation of Industry 4.0 in the Ecuadorian industry"(S42) Spanish
10:25	10:45	P43	Pedro Mogrovejo, Verónica Guillén, "Propose of Pre-diagnostic for a textile-factory. Application Case."(S16)	P44	Nancy Velasquez, "Challenges and opportunities of security in Industry 4.0"(S29) Spanish
10:45	11:05	P45	Delio Patiño, "Artificial neural networks for demand forecasting"(S30) Spanish	P46	Israel Herrera, "Costing of the solid waste collection service of the Ibarra city"(S23) Spanish
11:05	11:35	Coffee Break & Sessions Change			
11:35	11:55	P47	Paúl Muy, "Expiration Management Model of supermarket products for companies in Gualaceo, case study "La Tienda de mi Pueblo"(S33)	P48	Carlos Corrales, Washington Amancha "Analysis of solar radiation through the use of a UV meter, sample of data in critical points in the city of Ambato"(S22)
11:55	12:15	P49	Leonidas Cazares, "Formula 1 criteria applied to productivity."(S34)	P50	Medardo Ulloa, "Psychosocial factors and their effects on the health and performance of the workers of a florícola company"(S20)
12:15	12:20	Sessions Change			
12:20	13:00	Student awards and closure addresses			



- A. Accesos USFQ
- B. Campus Principal
- C. Edificio Hayek
- D. Teatro Shakespeare
- E. Teatro Calderón de la Barca
- F. Salón Azul

## KEYNOTE SPEAKERS



### **Ximena Córdova PhD**

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Academic Vice-Rector, Universidad San Francisco de Quito, Ecuador

Plenary: "The Liberal Arts and an Industrial Engineering Education"



### **Bernard Martin PhD DrSc**

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Associate Professor, Industrial and Operations Engineering, University of Michigan, USA

Plenary: "Occupational muscle fatigue: The legs and a pain in the neck"



### **Jeffrey Fernandez PhD PE CPE**

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Managing Principal at JFAssociates, Inc., Washington DC, USA

Plenary: "The constraints of applying ergonomic guidelines in Latin America", Workshop: "Occupational Ergonomics: Problem Identification and Practical Solutions"



### **Rubén A. Proaño PhD**

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Associate Professor, Industrial Engineering, Rochester Institute of Technology, USA

Plenary: "Insights from an optimization-based approach for redesigning the global vaccine market"



### **Anand Subramanian PhD CPE CSSBB**

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Principal at JFAssociates, Inc., Washington DC, USA

Plenary: "Application of Process Improvement Techniques in the Healthcare Industry: A Case Study"



### **Margaret Graf, DrSc**

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Director, International Ergonomics Association, Switzerland

Workshop: "Promoting Ergonomics and Human Factors in Ecuador"





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