Proceedings of the 2019 International Conference on Industrial Engineering, Quito, Ecuador February 20-22, 2019

# International Conference on Industrial **Engineering**

# KEYNOTE SPEAKERS



#### Ximena Córdova PhD

Academic Vice-Rector, Universidad San Francisco de Quito, Ecuador Plenary: "The Liberal Arts and an Industrial Engineering Education"



### Bernard Martin PhD DrSc

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 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"





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

Principal at JFAssociates, Inc., Washington DC, USA Plenary: "Application of Process Improvement Techniques in the Healthcare Industry: A Case Study"



#### Margaret Graf, DrSc

Director, International Ergonomics Association, Switzerland Workshop: "Promoting Ergonomics and Human Factors in Ecuador"

#### Ximena Cordova – Vallejo, PhD

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

Ximena M. Cordova is a Vice-Rector in the POLITÉCNICO - Colegio de Ciencias e Ingenierías at Universidad San Francisco de Quito (USFQ) in Quito Ecuador. She holds an MSc in Quality Management and Productivity and a MSc in Actuarial Science from the University of Iowa and a PhD in Industrial Engineering from Wichita State University, USA. She specializes in Ergonomics and Human Factors and most recently in Supply Chain Management and CO2 emissions in the transportation of goods within Ecuador. She has set up research groups in Supply Chain Carbon Emissions and Supply Chain for Green Islands. At USFQ, Cordova currently serves in the management team of the Center for Technology Transfer – USFQ. She is the director of the Grupo de Logística Integrada, a research/consultancy group that works with the Ecuadorian Industry. She has held a visiting appointment at the Center for Transportation and Logistics at the Massachusetts Institute of Technology. Cordova also serves as Dean of the School of Engineering.

#### Jeffrey Fernandez, PhD, PE, CPE

#### Plenary: "The Constraints of Applying Ergonomic Guidelines in Latin America"

#### Workshop: "Occupational Ergonomics: Problem Identification and Practical Solutions"

Dr. Jeffrey Fernandez is the Managing Principal at JFAssociates, Inc. based in the Washington, DC area. He has a MS and PhD in industrial engineering from Texas Tech University. He is a registered professional engineer (PE) and a certified professional ergonomist (CPE) and is known for his expertise in occupational ergonomics and classical industrial engineering. From 1986 to 1999, Dr. Fernandez was a professor in the Department of Industrial and Manufacturing Engineering. Dr. Fernandez is a fellow of the Institute of Ergonomics & Human Factors, and a member of the Human Factors and Ergonomics Society, the International Society of Occupational Ergonomics and Safety, and the Society for Industrial and Systems Engineering. In 2015-2016 he was the President of the Board of Certification of Professional Ergonomics (BCPE). In 2004-2005, he was the president of the International Society of Occupational Ergonomics and Safety. He has published more than 200 articles nationally and internationally. Dr. Fernandez is co-author of Applied Occupational Ergonomics: A Textbook – Fourth Edition and co-author of Ergonomía Ocupacional: Diseño y Administración del Trabajo. He is on numerous editorial boards for journals. At present, Dr. Fernandez is an adjunct professor at the Catholic University of America and George Mason University.

#### Margaret Graf, Dr.Sc.,

#### Workshop:"Promoting Ergonomics and Human Factors in Ecuador"

Dr Maggie Graf has worked as an ergonomist in private industry in Australia, as a researcher at the Swiss Federal Institute of Technology (ETH) and as head of the Swiss competence center for occupational health, a division of the Department of Economic Affairs. She is now retired but is still active as a part-time lecturer at the University of Zurich and on the examining board of the Occupational Health and Safety professionals in Switzerland. She is a Past President of the European certification board for professional ergonomists(CREE) and is currently a Director of the International Ergonomics Association (IEA) and chair of the Sub-Committee for Certification.

#### Bernard Martin Ph.D Dr.Sc.

#### *Plenary: "Occupational Muscle Fatigue: The Legs and a Pain in the Neck"*

Dr. Martin is an Associate Professor of Industrial and Operations Engineering at the University of Michigan, where he teaches courses in Biomechanics, Man-machine interactions and Research methods in ergonomics. Dr. Martin is also a research Scientist in the school of Kinesiology and affiliate of the Biomedical Engineering department at the University of Michigan. Dr. Martin is interested in human sensorimotor control systems and performs research in this area. His current areas of investigation include:

- 1. sensory and motor assessment of mild stroke patients for adaptation of rehabilitation procedures;
- 2. muscle fatigue;
- 3. contribution of cutaneous proprioception to posture control;
- 4. hand-arm vibration exposure in power drills;
- 5. guidance of low vision individuals using multisensory integration.

Dr. Martin received an Engineering degree in applied physics from the Ecole Nationale Supérieure de Physique de Marseille, France; Ph.D. (biomedical enginnering) and Dr.Sc. (Neuroscience) degrees from the Université de Provence, Marseille, France, in 1980 and 1989, respectively.

#### Anand Subramanian, PhD, CPE, CSSBB

Plenary: " Role of Industrial Engineers in Improving Healthcare Quality and Delivery"

#### Workshop: "Occupational Ergonomics: Problem Identification and Practical Solutions"

Anand Subramanian is a Principal at JFAssociates, Inc. based in the Washington, DC area. Dr. Subramanian has a Doctoral and Master's Degree in industrial engineering from the University of Cincinnati, Ohio. He is a Certified Six-Sigma Black Belt and a Certified Professional Ergonomist.

Dr. Subramanian is co-author of Product Development- A Structured Approach to Consumer Product Development, Design, and Manufacture - Second Edition published by Elsevier in 2014. From 2007 to 2011, he served as the managing editor of the International Journal of Industrial Engineering - Theory, Applications and Practice. In 2015-2016, he was the President for the International Society for Occupational Ergonomics and Safety (ISOES). Currently he serves as the co-editor of the Industrial and Systems Engineering Review (ISER) an open access journal (ISSN# 2329-0188) aimed at the advancement of industrial and systems engineering theory and practice as applied to any enterprise system.

#### Rubén A. Proaño PhD

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

Dr. Proaño is an Associate Professor in Industrial Engineering at Rochester Institute of Technology. He received a Ph.D. and M.S. degrees in Industrial Engineering from the University of Illinois at Urbana-Champaign. He also holds a B.S. in Industrial Engineering from Universidad San Francisco de Quito, and is United World Colleges (UWC) alumnus. Dr. Proaño's research focuses on the application of optimization models to the solution of problems affecting healthcare delivery, the supply of pediatric vaccines, healthcare cost reimbursement, and mental health. Additionally, Dr. Proaño is interested in adaptive coordination of autonomous vehicles through V2X technologies and their impact on emissions. Dr. Proaño's work on vaccine supply is currently funded by the Bill and Melinda Gates Foundation. He is an active member of INFORMS, serving in different committees, including the Diversity Committee and the Minority INFORMS Forum. Dr. Proano is a board member of the Health Systems Engineering Alliance and served as a director of the Operations Research Division Board of the Institute of Industrial Engineering.