

Kai Yang, PhD

Susan Qian Yu, MS

Industrial Engineering in Healthcare



Monday
October 3, 2011
4:10-6PM
FXB 1012

Dr. Kai Yang is a Professor in the Department of Industrial and System Engineering, Wayne State University. His areas of research include statistical methods in quality and reliability, lean product development, healthcare system engineering, and engineering design methodologies; and have been funded by such organizations as NSF, GM, Ford, and Siemens. Dr Yang is an author of six books in the areas of Design for Six Sigma, Lean Six Sigma and, multivariate statistical methods. Dr Yang is currently a leading faculty member in US Veteran Administration (VA) Center for Applied System Engineering, which is a nationwide VA initiative to use industrial engineering to improve healthcare industry since 2009, in which Dr Yang is leading many projects involving healthcare access improvement, human reliability, readmission reduction, real time location system in healthcare, and adaptive medical research and development process. Dr Yang is also a well known trainer in the area of quality and lean, he conducted numerous training for many companies, such as Apple Inc and Siemens. Dr. Yang obtained both his MS and PhD degrees from the University of Michigan.

Mrs. Susan (Qian) Yu is the chief of Systems Redesign at the John D. Dingell VA Medical Center; also she is a senior technical consultant at the VISN 11 Veterans Engineering Resource Center. Prior to joining VA, Susan was a vice president in a computer software company since 1993. Mrs. Yu holds two master degrees; one in computer science from Jilin Technology University in 1993 and one in industrial engineering from Wayne State University in 2008. Mrs. Yu currently is an executive PhD student in systems engineering at Wayne State University. She has 15 years of working experience in computer information technology and 5 years experience in Lean Six Sigma implementation. She has led more than 50 lean and Six Sigma projects successfully. Some of the projects are published in refereed journals. She was awarded an innovation grant in healthcare system redesign of VA administration and she got an excellent employee award from Detroit Federal Executive Board.

American healthcare industry is facing increasing challenges featured by increasing healthcare cost, mediocre healthcare quality, and low operating efficiency. However, based on a 2005 report by the National Academy of Engineering (NAE), and Institute of Medicine (IOM), the healthcare sector has been relative slow to adopt and apply industrial engineering tools and practices. In this seminar, we will discuss the important success factors and our framework for industrial engineering to effectively improve healthcare industry's performances. Based on our two years extensive work with VA's Center of Applied System Engineering, all industrial engineering methodologies, ranging from human factor engineering, operations research and statistical method; can play important roles in healthcare industry. We will illustrate the effectiveness of industrial engineering by our 3 projects in the area of healthcare access improvement, human reliability, and adaptive medical intervention trial design.

The seminar series "Providing Better Healthcare through Systems Engineering" is presented by the U-M Center for Healthcare Engineering and Patient Safety: Our mission is to improve the safety and quality of healthcare delivery through a multi-disciplinary, systems-engineering approach.

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For additional information and to be added to the weekly e-mail for the series, please contact genehkim@umich.edu.