

# UTC INSTITUTE FOR ADVANCED SYSTEMS ENGINEERING

## SEMINAR SERIES

### Complex Systems Analytics: a Promising Enabler for Sustainable Design and Manufacturing

Designing large-scale, complex systems has been a challenging task, particularly in the predictive context of life cycle. Key challenges arise in various stages of system's life cycle – pre-life, usage life, and end-of-life – where massive-scale data is generated and captured from complex systems design, operations, and disposal. Green Profit Design – a new term coined by Kim's team – shows that there is a strong link between sustainable product design, user generated contents in the social network service, and corporate profit generation. Green Profit Design has been shown to be successful in designing optimal, sustainable product portfolio by use of engineering design optimization and knowledge discovery for user preference capture. In this presentation, the speaker will present a summary of the recent findings that there exists an optimal design and remanufacturing threshold for maximum benefit of profit and environmental impact savings. The projects are sponsored by the National Science Foundation and Deere and Co. – green, sustainable design and recovery; sustainable product family design and recovery; trend mining design for product portfolio optimization.

#### Harrison Kim

Harrison Kim is an Associate Professor in the Department of Industrial and Enterprise Systems Engineering and Donald Biggar Willett Faculty Scholar at the University of Illinois at Urbana-Champaign (UIUC). Kim's research focuses on a variety of areas of complex systems design and large-scale optimization. Kim's current research topics are renewable, hybrid energy conversion and distribution; user-centered sustainable product design; product design analytics; multidisciplinary, multilevel optimization; green product portfolio design. Application areas are energy, automotive, consumer electronics, heavy-duty equipment, national security, commercial/military system of systems, and information technology.

Tuesday, March 8, 2016

11:00 am- 12:00 pm

UConn, Storrs Campus – ITE Building Room 336

To view live webcast click [here](#)

#### Upcoming Distinguished Lectures

03/10/16 - Yannis Kevrekidis  
Complex/multiscale systems  
modeling

10/06/16- Olivier de Weck  
Maximizing lifecycle value of  
complex man-made systems

10/17/16 - Wei Chen  
Design under uncertainty;  
multidisciplinary design  
optimization; simulation-  
based design

#### Upcoming Seminars

04/12/16 - Mark Biamonte  
Systems Engineering in Space  
Suit Development

04/19/16 - Quan Long  
Efficient Bayesian Optimal  
Experimental Design for  
Physical Models

05/03/16- Calin Belta  
Formal Methods for  
Dynamical Systems

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