INGERSOLL-RAND

COLLEGE OF ENGINEERING
GRADO DEPARTMENT OF
INDUSTRIAL AND SYSTEMS ENGINEERING
VIRGINIA TECH

Endowed Lecture Series 2017/2018

Gino Lim, Ph.D.
Professor and Chairman
Department of Industrial Engineering
University of Houston

Wednesday, February 14, 2018
12:15 p.m. – 1:15 p.m., 260 Durham Hall

Operations Research Applications in Drones

An Unmanned Aerial Vehicle (UAV) or a drone is an aircraft without a pilot that usually flies over preprogrammed way-points or controlled by a ground control unit. Recently, the use of drones has been actively studied in civilian fields, as opposed to the military use, such as monitoring oil/gas pipelines, assessing damaged power lines, delivering commercial items, collecting aerial shots, and aiding healthcare. This talk will focus on new findings in the use of drones and how the OR techniques/methods are used to optimize drone operations. The first problem I will talk about is a routine drug delivery problem using drones for patients with chronic diseases, who are required to visit clinics for routine health examinations in rural areas. The second problem is about a damage assessment schedule using drones under disruption. A two-stage stochastic integer programming is developed for assessing power networks damaged by extreme weather. Finally, I will talk about a new method to extend drone flight durations for a routine surveillance mission such as border patrol.

Gino Lim is Professor and Chairman, and Hari and Anjali faculty fellow, in the Department of Industrial Engineering at the University of Houston (UH). He is a fellow with IISE. His research interests are in robust optimization, large-scale optimization models and computational algorithms, Operations Research applications in healthcare, homeland security, and network resiliency. He received multiple awards from INFORMS including the Pierskalla Best Paper Award, Moving Spirit Award, and Volunteer Service Award. He has also received the Best Paper Award by IISE energy systems division. His excellence in teaching has been well recognized by receiving five teaching awards at UH. As a well-published researcher, he has led numerous multi-disciplinary & multi-institutional research projects of over $10M that have been funded by various federal, state, international, local agencies and industry partners. His current research projects include cancer treatment, network resiliency, power systems, unmanned aerial vehicles (UAV), emergency evacuation planning and management, and CPU-based high performance computing. He is the VP for Chapters/Fora of INFORMS. Previously, he was the program chair of 2017 INFORMS annual conference (Houston, TX), the chair of Bonder Scholarship committee for healthcare society of INFORMS, a past program chair for 2012 ISERC conference (FL), a program Co-Chair of 2013 ISERC doctoral colloquium, an invited sessions chair for INFORMS 2015 conference. He received both his M.S. and Ph.D. degrees in industrial engineering from University of Wisconsin – Madison.

Light reception to follow seminar
in 260 Durham from 1:15 p.m. – 1:45 p.m.