

**UTC Institute for Advanced Systems Engineering
Distinguished Lecture Series**



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A Framework for Systems Engineering of Energy Systems

Monday February 16, 2015 9:00 – 11:00 a.m. Storrs Campus, ITEB 336

Abstract: Systems engineering is a technology that when effectively and efficiently implemented can lead to product possibilities that may have not have otherwise existed at comparable costs and development times. This can be achieved by uniformly managing four elements of the design process; requirements and definitions, platforms and architectures, model-based design and verification, and the entire design flow. In this talk, examples of techniques that support these elements will be presented as well as open opportunities for future research and academic/industrial collaboration. In particular, modeling methods that that address system decomposability, its uncertainty, and its critical parameters while modeling for system and control design, optimization, and for verification will be discussed. The context for the discussion will range from analysis at the component to multi-system level in aerospace and commercial building applications although the methods are broadly applicable to other domains.

Biography: Dr. Eisenhower received Mechanical Engineering degrees from Virginia Tech (BS-1998, MS-2000) prior to joining United Technologies Research Center where he developed computational tools for the design, control, and optimization of both aerospace and commercial systems. In industry-academic partnerships, these efforts focused on systems engineering solutions in products ranging from jet engines, to fuel cells, green heat pumps, and combined heat and power systems. Bryan received his Ph.D. with a focus in Applied Dynamical Systems from the UCSB in 2009 and has multiple patents and publications in the field of control and design of complex dynamical systems. Some of his current work focuses generating new curricula in these fields through collaborations with campus building designers and operators. Bryan has over 20 peer-reviewed publications in both international journals and conferences, and holds multiple patents in the design and control of mechanical equipment and has received noteworthy recognition for his work both in international conferences and industry. In 2010 Bryan was recognized as an outstanding early career engineer by the U.S. National Academy of Engineering. His current work and publications is summarized at <http://engineering.ucsb.edu/~bryane/index.html>