

Leon McGinnis, faculty member in ISyE at GT, will be giving a seminar on **Thursday, April 16th at 3 p.m. in MRDC, Room 4211.**

“Model Based Engineering and Discrete Event Logistics Systems”

Thursday, April 16, 2009

3:00 p.m.

MRDC 4211

Hosted by: Shreyes Melkote

ABSTRACT:

Discrete event logistics systems are networks of resources through which materials flow; each arc in the network corresponds to some resource (or set of resources) by which the materials are either converted in some way (refined, shaped, coated, assembled, disassembled, etc.), moved (transported within a facility or between facilities), or simply held for some period of time (as work-in-process or goods in a warehouse). DELS are “discrete” in part because the materials move in discrete quanta, and in part because their behavior can be characterized effectively in terms of discrete events; e.g., the start or end of some conversion, transport, or storage process. A DEL system *may* take the form of a single warehouse, a portion of a factory, a complete factory, or a global supply network.

DELS are ubiquitous, and fundamental to modern society's well being. Considering their importance, one might expect to find a deep and broad market of computer aided model-based engineering tools for analyzing and designing DELS. That is not the case--in fact, there are almost no examples of commercially available tools applicable to even a narrow subdomain of DELS. This talk will explore the reasons for this surprising lack of engineering tools, describe a research agenda aimed at filling this gap, and speculate on the potential for success.

BIO:

Leon McGinnis is the founding Director of the Keck Virtual Factory Lab, serves as Associate Director of the Manufacturing Research Center, and holds the Eugene C. Gwaltney Chair in Manufacturing Systems. Dr. McGinnis received the BSIE from Auburn University, and the MSIE and PhD from North Carolina State University. He is a registered Professional Engineer in the state of Georgia. Dr. McGinnis has been a leader in developing and administering industry-focused

and interdisciplinary education and research programs at Georgia Tech. He helped establish the Material Handling Research Center in 1982 and managed one of five research programs over the next decade. He also helped establish the Computer Integrated Manufacturing Systems Program in 1983, which received a LEAD Award from ASME for excellence in graduate-level interdisciplinary manufacturing education, and served as Director from 1988 to 1998. As CIMS Director, he lead a team that competed for and won a \$1 million TRP grant, resulting in the establishment of the Rapid Prototyping and Manufacturing Institute within the Manufacturing Research Center. Since 1994, he has lead a team of ISyE faculty to win over \$2 million in grants to create the Keck Virtual Factory Lab as a focal point for IE systems design and control research. Dr. McGinnis enjoys teaching students how to think like industrial engineers, particularly in developing and using mathematical and computational models to support design of facilities and control systems. His research focuses on fundamental representation issues in facility and control system design, on performance assessment models, and on the development of integrated computational tools for facility and control system design. The Institute of Industrial Engineers has recognized Dr. McGinnis with the Outstanding Publication Award, the David F. Baker Distinguished Research Award, and the Fellow Award.