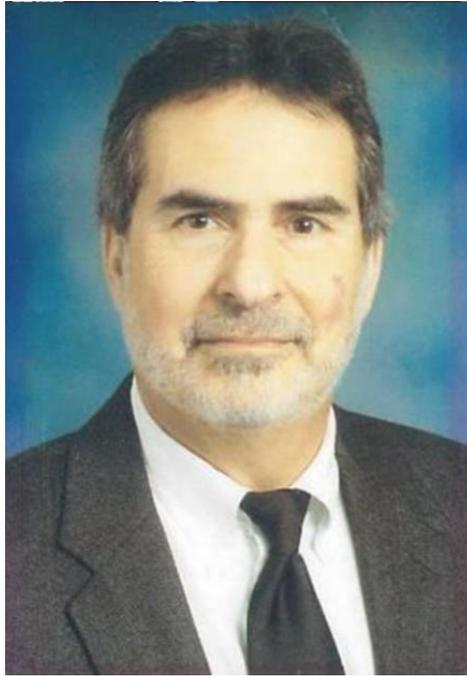

SCS Keynote Speaker ICBGM 2018



Title: Industrial Applications of Bond Graph Modeling: Costly Mistakes Could Have Been Avoided

Author: Donald Margolis, Ph.D.

Abstract: The presentation will start with some history and background of bond graph modelling starting with its invention in the 1950's. The development of bond graph modeling will be discussed with emphasis on applications to real systems. Some of my own industrial experiences will be presented where some upfront modeling for system understanding would have saved companies a lot of stress and money.

Biography: Donald Margolis received his BS in Mechanical Engineering in 1967 from Virginia Polytechnic Institute and State University.

He did his graduate work at MIT, receiving an MS, ME, and PhD in Mechanical Engineering in 1972. Upon graduation from MIT, Dr. Margolis joined the faculty of Mechanical Engineering at the University of California at Davis where he is currently Professor of Mechanical Engineering. Professor Margolis is an expert in the area of physical system modeling and control of engineering systems. He is a principal developer of the bond graph modeling method for interacting multi-energy domain systems. These have come to be

called "mechatronic" systems. He is co-author of the most comprehensive text in this area of modeling, titled System Dynamics: Modeling, Simulation, and Control of Mechatronic Systems, published by Wiley and sons of NY. This book is in its 5th edition. He is also co-author of the text Engineering Applications of Dynamics. This book is also published by Wiley and sons.

Professor Margolis has done research and development in the general area of physical system understanding with particular application to vibration control and vehicle dynamics and control. He has published over 150 articles in these areas and holds several patents for devices that required in depth physical system understanding for their invention. Professor Margolis is also the Director of the Hyundai Center of Excellence in Vehicle System Dynamics and Control. Professor Margolis is a teacher, researcher, and consultant to industry and national laboratories throughout the US, Asia, and Europe.