Wednesday, April 8, 2015

“Systems Analysis - Modeling, Simulation and Control for Process Understanding and Improvement.”

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During my 40 years in industry as a Chemical Engineer I’ve benefited greatly from my education and training at Lehigh University. When I graduated in 1975, integrated circuits and micro processors were appearing from the major chip makers and finding their way into personal computers. The rapid development of these computers along with high-level, object-oriented languages, provided a golden opportunity to apply Systems Analysis through computer modeling and simulation. In this presentation I describe three distinct stages of my career starting with "Gaining Process Experience", progressing to "Plantwide Control of Petrochemical Processes", and ending with "Systems Analysis Applied to Biotechnology Processes". In each case I highlight the role of Systems Analysis and how it was applied to gain enough understanding of complex processes so these could be significantly improved. I also show that Systems Thinking and Analysis are broad enough concepts to have allowed me to be productive in as different areas as large scale petrochemical plants as well as in research laboratories for the development of novel biocatalysts and fermentation processes. I conclude with some thoughts of skills helpful in applying Systems Analysis.

Bjorn received his B. S. in Chemical Engineering from the Royal Institute of Technology, Stockholm Sweden. In 1975 he graduated from Lehigh University with M. S. and Ph. D. degrees in Chemical Engineering. Bjorn worked in Sweden as a process engineer before joining DuPont in 1981 as a process control engineer in the Engineering Department. Bjorn held various positions in the Engineering Department until 1994 when he transferred to Central Research working on novel ways to analyze and improve complex processes. Around 2000 Bjorn found himself drawn closer to DuPont’s efforts in Biotechnology and in 2007 he was made the Technical Lead for a major biotechnology project. In 2011 Bjorn was named DuPont Fellow. Bjorn retired from DuPont in 2014 but continues to practice System Analysis and process simulation through his company SySim Consulting LLC.

Colloquium at 2:30 PM, Room B023, Iacocca Hall - Refreshments at 2:15 PM
Mountaintop Campus, Iacocca Hall, Lehigh University, Bethlehem, PA 18015

Seminars are open to the public and interested visitors are welcome.
Attendance is required of all full-time Chemical Engineering graduate students.