

Industrial and Systems Engineering Seminar

Resource Control in Stochastic Networks

Wednesday, April 17

3:15 PM – Refreshments before the Seminar

3:30 PM – Graduate Seminar

Mechanical Engineering Room 4125 A & B



Professor David D. Yao

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New models of stochastic networks in supply chain and logistics management often involve features that are beyond the capabilities of traditional tools in control theory and operations research/operations management. These include, for example, simultaneous resource occupancy, sharing of service capacities, and the dynamic resource allocation among different job classes. These features are widely present in applications ranging from internet and web servers to assemble-to-order and revenue management systems. This presentation will highlight some of the recently developed methodologies and applications in this area, focusing on performance analysis, limiting regimes and asymptotic optimality. (Based on joint work with Hengqing Ye.)

David Yao has been on the faculty at Columbia University since 1983, where he holds the inaugural Piyasombatkul Family Chair, and before that the Thomas Alva Edison Chair. He is an IEEE Fellow, an INFORMS Fellow, and a recipient of honors and awards including the Guggenheim Fellowship, the Presidential Young Investigator Award from the National Science Foundation; the Franz Edelman Award from the Institute for Operations Research and Management Sciences, and the Great Teacher Award from the Society of Columbia Graduates.

His teaching and research interests are in stochastic models, focusing on the analysis, design and control of stochastic systems, such as healthcare systems, communication networks, production systems and supply chains, and related resource control and risk management issues. He is an author/co-author of some 200 scientific publications, a principal investigator of over thirty grants and contracts from government agencies and industrial sources, and a holder of seven U.S. patents in semiconductor manufacturing, and inventory and distribution logistics.