

Department of Industrial Engineering

Spring 2021 Seminar Series

Friday, March 26th 1:25-2:15pm EST via Zoom

Open to the public

Please contact Dr. Emily Tucker (etucke3@clemson.edu) for log-in information

Speaker: Dr. Rhonda Righter

Affiliation: University of California, Berkeley

Industrial Engineering and Operations Research



Title: Service and Matching Systems with Compatibility Constraints

Joint work with Ivo Adan, Igor Kleiner, Kristen Gardner, and Gideon Weiss

Abstract:

In large service systems, such as cloud computing systems, there are different classes of jobs and of servers such that each job class can only be done on a subset of the server classes, due to data locality and other constraints. Similarly, there are often compatibility constraints in dynamic matching systems such as platforms for car sharing and wait lists for organ transplants. Under Markovian assumptions, the steady-state distributions for such systems have been shown to have a simple “product-form” structure. I will describe a unified framework for these models that provides a common simple proof for the product-form results at a detailed state description and provides a simple, state-aggregated, view for analyzing waiting time distributions.

Bio: Professor Rhonda Righter is a Professor and past Chair of the Department of Industrial Engineering and Operations Research at the University of California, Berkeley. Before coming to Berkeley she taught at the Leavey School of Business at Santa Clara University. Her PhD is in Industrial Engineering and Operations Research from UC Berkeley, her BS is in applied math and business from Carnegie Mellon. Her primary research and teaching interests are in the general area of stochastic modeling and optimization, especially as applied to service, manufacturing, telecommunications, and large-scale computing systems. She is an associate editor for Queueing Systems, Probability in the Engineering and Informational Sciences, Stochastic Models, and the INFORMS Service Science Journal. She has also served on the editorial boards of Management Science, Operations Research, Operations Research Letters, the Journal of Scheduling, and Naval Research Logistics. She is the past (founding) Chair of the Applied Probability Society (APS) of INFORMS and is currently Chair of the APS Prize Committee.