



SMU | LYLE

*Engineering Management, Information, and Systems
Seminar Series*

Research Seminar

Distributionally Robust Two-Stage Stochastic Programming



**Dr. David Morton
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Northwestern University**

Friday, December 4, 2020

11:00 a.m. – 12:15 p.m.

Zoom link: <https://smu.zoom.us/j/96478126380>

Abstract: Distributionally robust optimization (DRO) is a popular modeling paradigm when the distribution of the random parameters in a stochastic

optimization model is unknown. Here, hedging against a range of distributions, characterized by an ambiguity set, is of interest. We study two-stage stochastic programs with linear recourse under distributional ambiguity, and we formulate DRO models that vary in how the ambiguity set is built, focusing on the Wasserstein distance, allowing the support of the random variables to be a continuous space. We study both unbounded and bounded support sets, and provide guidance regarding which models are meaningful in the sense of yielding robust first-stage decisions, and how to solve the resulting models. This is joint work with Daniel Duque and Sanjay Mehrotra.

Biography: David Morton is the Sachs Professor and Department Chair of Industrial Engineering and Management Sciences at Northwestern University. Prior to joining Northwestern, he was on the faculty at the University of Texas at Austin, and was a National Research Council Postdoctoral Fellow in the Operations Research Department at the Naval Postgraduate School. He has served as Chair of the INFORMS Optimization Society and Chair of the Mathematical Optimization Society's Committee on Stochastic Programming. He received the Commemorative Medal of the Faculty of Mathematics and Physics of Charles University and was awarded the Presidential Early Career Award for Scientists and Engineers.