

# Computational Research in Boston and Beyond Seminar

## Multiobjective Optimization for Allocating Livers for Transplantation

Friday, March 6, 2026

12:00 PM - 1:00 PM

Zoom: <https://mit.zoom.us/j/91933017072>



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### Abstract

Organ allocation requires ethical balancing of multiple viewpoints and different notions of benefit, and this talk will describe how multiple objective optimization problems in organ allocation policy should be modeled and understood. The Organ Procurement and Transplantation Network is eliminating a hierarchical category-based priority system in favor of a weighted combination of multiple objectives, but designing the weights by committee vote might fail to converge on an acceptable system. Using simulation optimization, we explore alternative designs to choose an allocation score that, for example, could minimize waitlist deaths while assuring comparable transplant rates for relevant subgroups (e.g. by age, race, ABO blood type, urban/rural). Our findings are directly applicable to liver allocation policymaking, using an approach that optimizes outcomes and supports transparency, an ethical cornerstone in transplantation.