

Industrial & Systems Engineering Seminar

Response-guided Dosing

Wednesday, November 2

3:15 PM - Refreshments, 3:30 - Graduate Seminar

Lind Hall Room 305



Professor Archis Ghate

Associate Professor

Industrial & Systems Engineering

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Within the broad field of personalized medicine, there has been a recent surge of clinical interest in the idea of response-guided dosing. Roughly speaking, the goal is to devise strategies that administer the right dose to the right patient at the right time. I will present stochastic models that attempt to formalize such optimal dosing problems. Theoretical results about the structure of optimal dosing strategies and associated solution methods rooted in convex optimization, stochastic dynamic programming, robust optimization, and Bayesian learning will be described. Computational results on cancer radiotherapy and rheumatoid arthritis will be discussed.

BIO:

Archis Ghate is an Associate Professor and Associate Chair of Industrial and Systems Engineering at the University of Washington in Seattle, where he holds the College of Engineering Professorship in Healthcare Operations Research. His research focuses on stochastic and dynamic optimization. Archis received a PhD from the University of Michigan, an MS from Stanford University, and completed his undergraduate education at the Indian Institute of Technology. He is a recipient of the NSF CAREER award and the award for Excellence in Teaching Operations Research from the Institute of Industrial Engineers. His doctoral students have won the Dantzig dissertation award and the Bonder scholarship from INFORMS, as well as other competitive awards from the University of Washington.