

ACMS Applied Math Seminar

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Thursday, April 18 2024

154 Hurley Hall

3:30 PM – 4:30 PM



Stochastics in Medicine: Delaying Menopause and Missing Drug Doses

Stochastic modeling and analysis can help answer pressing medical questions. In this talk, I will attempt to justify this claim by describing recent work on two problems in medicine. The first problem concerns ovarian tissue cryopreservation, which is a proven tool to preserve ovarian follicles prior to gonadotoxic treatments. Can this procedure be applied to healthy women to delay or eliminate menopause? How can it be optimized? The second problem concerns medication nonadherence. What should you do if you miss a dose of medication? How can physicians design dosing regimens that are robust to missed/late doses? I will describe (a) how stochastics theory offers insights into these questions and (b) the mathematical questions that emerge from this investigation.

The first problem is based on joint work with Joshua Johnson (University of Colorado School of Medicine), John Emerson (Yale University), and Kutluk Oktay (Yale School of Medicine).

The Department of Applied and Computational
Mathematics and Statistics

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