Biomath Seminar

Date: Friday, February 20
Time: 11:00 AM

Speaker:
Anuraag Bukkuri
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Title: Mathematical Models of Cancer Evolutionary Ecology: From Blackboard to Bench to Bedside

Abstract: The Bukkuri Lab develops and applies mathematical and philosophical methods to pose and address questions at the interface of cancer, evolutionary ecology, and social science. In this talk, I will highlight our cancer evolutionary ecology theme. I will describe how our fundamental investigations into the nature of evolvability led us to create new mathematical tools to model eco-evolutionary dynamics in structured populations. These frameworks inspired an entirely new class of therapeutic approaches called "life history enlightened treatment strategies" (LHETs). Alongside our experimental and computational studies, this culminated in an approved clinical trial for regional prostate cancer, with potential applications being explored for other diseases. In addition, I will present current research on cancer community ecology, in which we harness selection pressures that arise from spatial distribution patterns within tumors to design evolutionarily-informed combination therapies.

Zoom Information:
Zoom Link:
https://texastech.zoom.us/j/93886533169?pwd=sJbJSi4BQsy2OM2ow8A4xsELJHgl22.1
Meeting ID: 938 8653 3169
Passcode: 883472