



Dr. Iakovos Toumazis

Assistant Professor

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Houston

**Date:** Friday, September 8, 2023

**Time:** 1 - 1:50 pm

**Location:** MH 180

## Applications of mathematical models in the context of lung cancer screening

**Abstract:** Lung cancer is the leading cause of cancer-related death in the world. Screening with low-dose computed tomography (LDCT) has been shown to effectively reduce lung cancer specific mortality in high risk individuals and has been recommended by several health organizations and agencies in the US. However, lung cancer screening is associated with potential harms that need to be minimized without diminishing its potential benefits. Principles from Operations Research (OR) are well suited for identifying the optimal screening schedule that balances the potential benefits and harms. In this presentation, I will cover some of the OR approaches used to optimize lung cancer screening.

**Biography:** Dr. Iakovos Toumazis is an Assistant Professor in the Department of Health Services Research at The University of Texas MD Anderson Cancer Center. Dr. Toumazis leads a research program that focuses on the optimization of cancer care through mathematical and simulation models. He received his B.S. in Mathematics with a focus on Probability Theory & Statistics from the University of Patras, Greece and his M.S. & Ph.D. in Industrial Engineering from the State University of New York at Buffalo with a focus on operations research. He completed a postdoctoral fellowship at Stanford University in the Departments of Biomedical Data Sciences and Radiology. Since 2015, Dr. Toumazis is a member of the National Cancer Institute sponsored Cancer Intervention and Surveillance Modeling Network's (CISNET) Lung Working group. He was part of the team that informed the 2021 US Preventive Services Task Force recommendations on lung cancer screening and serves as an expert advisor to the American Cancer Society (ACS) Guideline Development Group (GDG). Dr. Toumazis research program is currently funded by the National Cancer Institute, the Duncan Family Institute for Cancer Prevention and Risk Assessment, BreakThrough Cancer and the National Association of Proton Therapy. His research interests include sequential decision making under uncertainty, personalized cancer care, cancer prevention, cost-effectiveness analysis, and outcomes research.