

# EPSTEIN INSTITUTE SEMINAR ▪ ISE 651

## Public Health Screening: Models, Algorithms, and Policies

**ABSTRACT** - Screening for diseases is an important, and extensively used, public health tool; early detection can improve clinical outcomes (and for infectious diseases, reduce the spread of the disease), especially for diseases that have slow to develop and/or initially non-specific symptoms (e.g., AIDS, Babesiosis, Zika, hepatitis, cystic fibrosis). A major challenge in public health screening is to design screening policies that are capable of accurately classifying subjects in a large population, having different risk factors, with limited resources and imperfect tests. In this talk, I will present an overview of this research area, discuss several key models that we have developed to optimize the resource allocation decision in public health screening, and highlight the challenges and opportunities.



**Dr. Ebru Bish**

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Department of Industrial and  
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**SPEAKER BIO** - Dr. Ebru Bish is an Associate Professor in the Grado Department of Industrial and Systems Engineering at Virginia Tech. She also serves on the faculty of Health Sciences at Virginia Tech. Dr. Bish received her BS and MS in industrial engineering from Bogazici University, and her PhD in industrial engineering and management sciences from Northwestern University. Dr. Bish's research focus is on stochastic modeling, optimization, and decision making under uncertainty, with applications to public health policy and health implementation science. She has received various awards, including the INFORMS Pierskalla Award for the Best Paper in Healthcare, INFORMS JFIG Best Paper Award, IIE Transactions Best Applications Paper Award, and her PhD students have received the INFORMS Bonder Scholarship. Dr. Bish has published extensively in leading operations research, biostatistics, and medical journals, and her research has been funded by the National Science Foundation and the Agency for Healthcare Research and Quality, among others. Dr. Bish has graduated eleven PhD students, and is currently working with three PhD students. Dr. Bish currently serves as the President of the INFORMS Health Applications Society.

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**TUESDAY, APRIL 16, 2019**

**3:30PM – 4:50PM**

USC ANDRUS GERONTOLOGY CENTER (GER), Room 206