



**BİLKENT UNIVERSITY**  
**MOLECULAR BIOLOGY AND GENETICS**  
**DEPARTMENTAL SEMINAR**

**“Predicting Survival Rate of Cancer Patients via Learning to Rank”**

**Asst. Prof. Öznur Taştan**

**Bilkent University, Department of Computer Engineering**

Over the last decade, significant progress has been made in our ability to characterize DNA, RNA, and protein sequences, and measure expression quantities. The scale and variety of available data gives us unprecedented opportunities; however, unleashing the full potential of this data entails the development of effective computational techniques. Towards this aim, our research group focuses on developing computational methods and techniques with a vision to assist and expedite related clinical research. In this talk I will present a new computational method for predicting the survival rates of cancer patients. Using a learning to rank approach, our method predicts survival rates of the patients by focusing on optimizing the concordance index, a commonly used performance metric. It can also handle the censored data without making any assumptions. Extensive tests on the ovarian adenocarcinoma patient molecular data demonstrate that our methods achieves better survival predictions, regardless of the input molecular data (mRNA, protein, miRNA, Copy number variation and DNA methylation), than the two most commonly used methods: Cox-proportional hazards model and Random Survival Forest.

**Date-Time : Wednesday, March 23<sup>rd</sup>, 2016 – at 15:40**

**Location : SBZ-14**

**Host : Çağlar Çekiç**