Seminars in Biotechnology BTEC 591 & BTEC 691

"Bioinformatics in Omics-Based Biotechnology"

Prof. Dr. Mine TÜRKTAŞ

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13:30

Biotechnology Institute Amphitheatre-1

Resume: Dr. Mine Türktaş graduated from Ankara University, Biology Department. After completing her MSc at METU, she continued her education at Universitaet für Bodenkultur, Vienna for her doctoral studies. She worked at Sabancı University and TUBITAK-MAM as postdoctoral fellow. She started working at Karatekin University as an assistant professor at and received the title of Associate Professor at the same university. Since 2020, she has been working at Gazi University, Biology Department as Professor. Among other topics, her main area of expertise is plant molecular biology and biotechnology. She has experience in omics sciences and bioinformatics analyses. She gives lectures and has publications in these fields.

Biotechnology is the technology that utilizes biological systems to develop different products. With the advent of technology, "omics" revolutionized the biological sciences. The development of high throughput omic technologies in biological research has also triggered the progress of biotechnology to address several issues.

Omics technologies have made it possible to obtain huge data within a tissue or cell. Many areas of research can be classified as omics, such as genomics, transcriptomics, proteomics,

epigenomics, and metabolomics. These technologies can be applied to several fields of biotechnology including agriculture, health, food etc.

Bioinformatics has emerged as a field in biotechnology that brings together biological studies with computational science. *Bioinformatics* and *biotechnology* are two fields that are highly complementary. Biotechnology focuses on using data for lab-based experiments, while bioinformatics focuses on using computational tools to analyze those data.

Bioinformatic analysis has gained immense importance in the era of omics. Bioinformatic analysis of large and complex omics datasets has become increasingly useful in biological sciences.

In this talk, different omic-based bioinformatic analysis examples with an emphasis on plant biotechnology will be discussed.