Dortmund & online

COLLOQUIUM

Integration and Analysis of Multi-Omics Data

Speaker:

Jun.-Prof. Dr. Robert Heyer heads the junior research group
Multidimensional OMICS Analyses at ISAS and holds a
professorship at Bielefeld University.

Time:

Monday, June 27, 2022 - 1 pm

Venue:

ISAS Campus, Lecture Hall
Otto-Hahn-Straße 6b
44227 Dortmund

&

Webex: https://bit.ly/3aYXA2W
Meeting-ID: 2731 556 2686
Password: gXWdaMd5v36

The development of novel omics methods over the last 10-20 years now allows the pathogenesis of most diseases to be analysed and characterised in detail. However, these methods require complex and fast bioinformatics workflows to identify and interpret the raw data's corresponding genes, proteins, and metabolites. Subsequently, multi-omics data sets can be used to derive prognostic and predictive markers and possibly new therapy targets using biostatistical methods and machine learning algorithms. The challenge here is to link the individual omics data with each other, with clinical data (diagnoses, analyses, therapy), with the information from clinical databases and previously known publications, and finally to visualise the results. Furthermore, omics datasets enable the development of mathematical models describing the disease. These models could then be used to test therapeutic approaches or could be transferred back to the clinic to support diagnosis and clinical decisions.

In his talk, Jun.-Prof. Dr. Robert Heyer will introduce himself and his new research group focusing on multi-omics data analysis. The event will focus on the organisation, integration, and mining of omics and other research data using graph databases. It will also cover strategies for modeling the omics data and Heyer's translational research which explores the impact of the gut microbiome on human health.