



Der Vorsitzende des Promotionsausschusses

EINLADUNG

Hiermit lade ich ein zum öffentlichen Promotionskolloquium von

Frau M.Sc. Sudharshini Thangamurugan

Bioinformatik

(Prof. Dr. Volkhard Helms)

am

Donnerstag, 28. August 2025, 14:00 Uhr s.t.

per Videokonferenz: Link für MS Teams: <http://bit.ly/45ttdLF>

Raum für die Prüfung: Seminarraum 001, Campus E2.1.

Thema der Dissertation:

Detecting condition-specific protein clusters in expression data sets

This thesis takes a multidisciplinary approach, combining computational and experimental methods from proteomics, transcriptomics and dental research to address diverse research problems involving protein interactions. First, based on RNA-seq data for healthy and diseased cell states, network analysis tools such as PPIXpress, PPICompare and ClusterONE were used to reveal key protein interactions in melanoma progression. Second, the proteomic composition of saliva, pellicles deposited on biofilms and hydroxyapatite (HAP) provided insight into oral protein activity and suggested based on comparative analysis of protein and molecular properties that HAP is a suitable substitute for human enamel. Third, this work also explored interactions of various peroxiredoxin proteins using in silico tools such as HADDOCK and AlphaFold to enhance our understanding of peroxiredoxin oligomerization.

Saarbrücken, 14. August 2025

Prof. Dr.-Ing. Georg Frey