

A U S H A N G

FREIE UNIVERSITÄT BERLIN
Fachbereich Mathematik und Informatik

Promotionsbüro, Arnimallee 14, 14195 Berlin

D I S P U T A T I O N

Freitag, 24. Juli 2015, 13.30 Uhr

**Ort: Max Planck Institut für molekulare Genetik,
Ihnestr. 63-73, 14195 Berlin, Seminarraum I**

Disputation über die Doktorarbeit von

Frau Juliane Perner

**Thema der Dissertation:
Bioinformatic Approaches for Understanding Chromatin Regulation**

**Thema der Disputation:
Sparse regression methods for network reconstruction**

Die Arbeit wurde unter der Betreuung von **Prof. Dr. M. Vingron** durchgeführt.

Abstract: Network reconstruction refers to the task of identifying associations between variables of a complex system from observed data. Different network reconstruction methods exist and have been applied to identify associations in a variety of biological systems. For some methods, an essential step is the estimation of the covariance matrix from the measurements of the variables in the network. From the covariance matrix the associations connecting the variables in the network can be identified by exploiting properties of conditional independence. During estimation sparse regression methods incorporate a regularization term on the entries of the covariance matrix leading to sparse and interpretable networks. In the first part of the presentation sparse regression-based methods for network reconstruction are reviewed. In the second part of the presentation the thesis entitled 'Bioinformatics approaches for understanding chromatin regulation' will be summarized.

Die Disputation besteht aus dem o. g. Vortrag, danach der Vorstellung der Dissertation einschließlich jeweils anschließenden Aussprachen.

Interessierte werden hiermit herzlich eingeladen

Der Vorsitzende der Promotionskommission
Prof. Dr. M. Vingron