

# Problemstellungen der Bioinformatik

Seminar im Grundstudium, SomSem 01

## Vorträge

### 1. Sequenzierung, Röntgenkristallographie, NMR

Literatur [Gla95]: S.389-411; [Leh94]: S.194, 367ff; [Alp98]

### 2. Genetische und physikalische Karten

Literatur [Cas]; [Wat95]: Kap. 6; [Set97]: Kap. 1.5 und 5; [Gus97]: Teil aus Kap. 16

Weitere Links <http://www.forschung-berlin.de/genom/p6.html>  
<http://www.uni-hohenheim.de/ipspwww/350c/mapping>

### 3. Sequenzalignment

Literatur [Len96]: Absch. 6.3; [Gri92]: S. 90-114; ev. [Wat95]: Kap. 9; [Gus97]

### 4. Multiples Sequenzalignment

Literatur [Set97]: Kap. 3.4; [Wat95]: Kap. 10

### 5. Fragmentassemblierung

Literatur [Cas]; [Set97]: Kap. 4; [Hua96]

### 6. Phylogenetische Bäume

Literatur [Set97]: Kap. 6; [Gus97]; [Wat95]

### 7. Detektion von Genen mit Hidden Markow Models

Literatur [Sal98]: Kap. 4; [Kul96]; [Bal98]: Teil aus Kap. 8.2, ev. Kap. 7

### 8. Microarrays: Datengewinnung und Vorverarbeitung

Literatur [Sch99]; [Che99]; [Bow99]; [Bro99]; [Lip99]; [Rau01]; [Bal98]; [Fre00]; [McG96];  
[Kel98]; [Bow99]; [Che99]

Weitere Links [www.affymetrix.com](http://www.affymetrix.com)

### 9. Analyse von Microarrays: Ermitteln informativer Gene

Literatur [Gol99]; [Bal98]; [Tus01]

### 10. Analyse von Microarrays: Clustern

Literatur [Gol99]; [But00]; [Tam99]; [Rau01]; [Bal98]; [Eis98]; [Koh95]; [Slo00]

### 11. Analyse von Microarrays: Klassifikation

Literatur [Gol99]; [Slo00]; [Fur00]

## 12. Vorhersage von Proteinstrukturen

Literatur [Kön97]; [Bro69]; [Fas90]: Kap. 17; [Gla95]: Kap. 9.III

## 13. Protein-Protein-Docking

Literatur [Ack98]; [Ack97]: Abschnitte 2.2, 4.1, 4.6; [Bal98]; [SK96]

## 14. Protein-Ligand-Docking und Wirkstoff Design

Literatur [Jon97]; [Rau01]; [Kub98]; [SK96]; [Vin94]; [Dev96]

Weitere Links FlexX <http://cartan.gmd.de/flexx/>;

## 15. Soziale und ethische Aspekte

Literatur [www.ornl.gov/hgmis/publicat/genechoice/yourgenes.pdf](http://www.ornl.gov/hgmis/publicat/genechoice/yourgenes.pdf)

## 16. Genetischer Fingerabdruck

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