Main Seminar
Hot Topics in Bioinformatics

Alexandros Stamatakis
Preliminaries

- Seminar talks: 35 minutes + 10 minutes questions
- English or German
  - If you give the talk in English, I will judge language quality mildly
- **Reports:** 15 pages in English or German
  - If you write the report in English, I will judge language quality mildly
  - Use Latex template (Springer LNCS) indicated on course web-page
- **Criteria:** Structure, Clarity, Precision of presentation
  → Use figures and drawings
  → Writing & Presentation skills very important if you consider a scientific career
  → check general writing tips and links on the course web page
- **Grade:** ½ talk + ½ report
- **Grades:** In the seminar my grading is very strict regarding language and presentation quality in the report & the presentation
Preliminaries II

- Don't underestimate the seminar 3 ECTS = 90 hours per semester
- No plagiarism
  - I am likely to notice!
  - I have caught someone almost every year thus far!
- Start working on the seminar on time!
- Know the background of the paper, that is, any algorithms/theories cited therein!
Topic Assignments

• To be determined
Deadlines

- Topic selection: May 5 → via email
- Supervisor assignment by Alexis via email after all topics are set
- Meet with supervisor at least twice before your presentation!
- Talk slots: to be determined, but presentations will start on June 14 and later!
- Meet with supervisor at least once before handing in report
- Report Deadline: September 17
Presentation Slots

- June 14
- June 21
- June 28
- July 12
- July 19
Schedule

- Today → how to give a scientific talk and write a report (Alexis)
- Presentations: To be announced
Topic selection

- I'd like to give you as much freedom as possible
- This will allow you to choose a topic you like
- If you like a topic, you will give a better presentation and write a better report

- Topic selection
  - Pick any of the papers mentioned in the course
  - Pick any topic of the course and ask me for a paper
  - Contact one of my lab members that taught last semester (Lucas, Benoit, Alexey) and ask them for a paper on their topic
Course Topics

- Sequence Analysis
  - Indexing techniques & suffix trees
  - Operations on strings
  - Sequence alignment
- Phylogenetics
  - Parsimony
  - Likelihood
  - Parallel computing in phylogenetics
  - Discrete operations on trees
  - Bayesian Inference
- Population Genetics
  - Coalescent models/method
  - Mixed phylogenetic & pop. gen. approaches
Chose a recent paper you find interesting from the following journals

- Bioinformatics
- BMC Bioinformatics
- IEEE Transactions on Comp. Biol. & Bioinformatics
- Systematic Biology
- Molecular Biology and Evolution
- BMC Algorithms for Molecular Biology
- Nucleic Acids Research
You may also present a Bioinformatics topic that was not presented in the winter class (e.g., coalescent simulations in population genetics or protein structure prediction) in a more teaching like manner.

Do you think that it will work like this?
Reports

- Examples of good reports and nice slides from summer 2015 and 2016 are available on the course web page

http://sco.h-its.org/exelixis/web/teaching/BioinformaticsModule.html
Supervision

- To talk to your supervisors make an appointment via email
- Don't wait until the very last minute before your presentation to make an appointment → make them straight after the topic assignment
- You will be assigned one of my lab members to help you with preparing the talk, the presentation, the report
- They can come to KIT to meet you, except if you want to visit our institute in Heidelberg one day
- Meetings with supervisors must take place
Your tasks

- Think about, search and select a topic by **May 5**
- Contact your supervisors (once assigned) **immediately** to schedule meetings! A total of at least three meetings are required!