

Final Talk and Paper

Talk due in class on Mar. 13/15

Paper due in outbox outside Clark S251 by 5pm on Mar. 23

For the final, you will give a short talk (20 minutes or less) in class on Mar. 13/15, and a complete a short final paper due on Mar. 23.

1. *Final Talk*

- (a) Each student in the class will give a short, 20 minute talk on a topic in bioinformatics which they find to be of interest.
- (b) You should prepare slides in the presentation application of your choice (Keynote, Powerpoint, LaTeX Beamer, etc.) or else prepare LaTeX handouts to accompany a chalk talk. Slides should be heavy on graphics and light on text. As a general rule of thumb, every slide should contain at least one graphic.
- (c) There are two possibilities: either you can focus your talk on known work (a review), or you can propose a new hypothesis.
- (d) Review
 - i. If you opt to do a review, you should use the literature searching techniques described here: jinome.stanford.edu/best_practices/best_practices.html
 - ii. Your review should be focused on current papers, published within the last 3 years. The review must include:
 - A. a clear statement of the problem
 - B. the reason(s) why the problem has recently become tractable or attracted attention
 - C. the major recent progress to date
 - D. the remaining open questions
- (e) Hypothesis
 - i. If you opt to propose a hypothesis, you should preface your proposal with a brief literature review.
 - ii. Any hypothesis will be measurably strengthened by preliminary data. Even one figure would be useful.
 - iii. Hypotheses will be judged primarily on creativity and novelty. New ideas for using publicly available data are particularly interesting.

2. *Final Paper*

The final paper should be approximately 4-5 pages in length, including references and figures, and should be an elaboration of the ideas presented in the final talk. It is fine if you are over or under so long as the product is coherent.

- (a) The final paper should be written using Sweave, which is a way to embed R code in LaTeX: <http://www.stat.umn.edu/~charlie/Sweave/>.
- (b) You should use the LaTeX style files from Bioinformatics: http://www.oxfordjournals.org/our_journals/bioinformatics/for_authors/submission_online.html.
- (c) The final paper should have at least two figures, with captions. The first figure should be an overview of the contents of the paper.
- (d) References should be formatted using BibTeX: <http://en.wikipedia.org/wiki/BibTeX>

3. *Ideas*

The following is a short list of possible topics to work on. See me if you want further ideas.

- Copy number variation in the human genome, and algorithms for detecting it.
- Regulatory motif detection in eukaryotes.
- The registry of standard biological parts.
- The state of the art in metabolomics.
- Progress in structural genomics.