Propositions
For the thesis titled:

*In silico* and wet lab approaches to study transcriptional regulation

1. Future genome re-sequencing efforts are of little value as long as they are not complemented by efforts to improve genome annotation with (currently) missing exons, full genes, and regulatory elements. *(this thesis)*

2. Transcription factor binding across the genome is complex, with different binding patterns and binding outside the traditional promoter region. *(this thesis)*

3. The selection of proper background sequences and competition effects improves over-representation analysis for transcription factor binding site prediction. *(this thesis)*

4. Next-generation sequencing technology is a superior tool to microarrays, providing a more precise, less biased, and complete methodology for many applications, including ChIP and expression analysis. *(this thesis)*

5. The choice of alignments tools and settings for next-generation sequencing is poorly understood by many users and has a large influence on results: factors such as uniqueness, mismatches, speed, hardware requirements, sequencing platform, and biological question should be carefully considered.

6. “(Modern) Biologists interested in sequencing to answer their experimental questions should prepare themselves to join a fast-moving field and embrace the tools being developed specifically for it. As more sequence is generated, effective use of computational resources will be more and more important.” *(Flicek & Birney, Nat Methods. 2009 Nov;6(11 Suppl):S6-S12.)*

7. The identification of binding sites for known transcription factors is largely limited in the lab by appropriate antibodies and *in silico* by appropriate position weight matrices.

8. The challenge in genomics technologies, such as next-generation sequencing, has moved from lab work to data analysis.

9. “Many of the truths we cling to depend greatly upon our own point of view.” *(George Lucas and Lawrence Kasdan (Obi-Wan Kenobi) - Star Wars: Return of the Jedi)*

10. “….I firmly believe that any man’s finest hours – his greatest fulfillment of all that he holds dear – is that moment when he has worked his heart out in good cause and lies exhausted on the field of battle – victorious.” *(Vince Lombardi)*

11. Better products do not always have big names or massive advertising campaigns behind them.

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