

HW1 Genetics :

Q&A:

Q&A #1 : From your perspective, why did evolution selected the DNA molecule as we know it today? In other words, what properties of DNA make it a perfect medium to store the genetic information. As a conclusion for your assay, suggest some upgrades/changes that you think could further improve the molecule.

Q&A #2 : Describe the technology of "shot-gun sequencing" and explain why it is not suitable for sequencing large genomes?

Q&A #3 : With regards to 2nd generation DNA sequencing, describe which specific aspects have been specifically targeted for technological improvement and why?

Litterature style:

Genome editing retraces the evolution of toxin resistance in the monarch butterfly
Nature. 2019 Oct;574(7778):409-412. doi: 10.1038/s41586-019-1610-8. Epub 2019 Oct 2.
<https://www.nature.com/articles/s41586-019-1610-8>

Rapid implementation of SARS-CoV-2 sequencing to investigate cases of health-care associated COVID-19: a prospective genomic surveillance study
Lancet Infect Dis. 2020 Jul 14;S1473-3099(20)30562-4. doi: 10.1016/S1473-3099(20)30562-4.
[https://www.thelancet.com/pdfs/journals/laninf/PIIS1473-3099\(20\)30562-4.pdf](https://www.thelancet.com/pdfs/journals/laninf/PIIS1473-3099(20)30562-4.pdf)

Rapid SARS-CoV-2 whole-genome sequencing and analysis for informed public health decision-making in the Netherlands.
Nature Medicine volume 26, pages1405–1410(2020)
<https://www.nature.com/articles/s41591-020-0997-y>

Large-scale GWAS reveals insights into the genetic architecture of same-sex sexual behavior
Science 30 Aug 2019: Vol. 365, Issue 6456,
<https://science.sciencemag.org/content/365/6456/eaat7693>