

Download the following papers

1. Bhattacharya R, Rose PW, Burley SK, Prlić A (2017) Impact of genetic variation on three dimensional structure and function of proteins. PLOS ONE 12(3): e0171355. <https://doi.org/10.1371/journal.pone.0171355>  
<https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0171355>
2. Zehir, A., Benayed, R., Shah, R. H., Syed, A., Middha, S., Kim, H. R., et al. (2017). Mutational landscape of metastatic cancer revealed from prospective clinical sequencing of 10,000 patients. *Nature Medicine*, 23(6), 703–713. <http://doi.org/10.1038/nm.4333>

**Quickly** read through the papers and answer the following questions about the papers.

1. What is the biological question?
2. What is the method?
3. What significant scientific contribution does the paper make?

We will go over these papers in more detail soon.

Go through the papers and identify one protein whose mutation (remember we focus on missense mutations) is associated with a disease state.

Go to the PDB and search for the protein using its name.

Give a brief summary of the available information in the PDB:

- How many entries are there for this protein?
- Which method(s) were used in characterization of the structure?

For the most recent entry with a publication record:

- What is the structure determination method?
- What is the Uniprot ID?
- How many chains does it have?
- What is the sequence length?
- Which ligands (if any) are present?
- Examine the 3D structure using 3D view. Color by chain.
- Play with all of the options and prepare a structure figure.