The third month of the class we are going to learn about CRISPR and how it works.

**Protocols**

1. Follow the Bacterial CRISPR genetic modification protocol

**Papers**

If you are not used to reading through scientific papers it can be a hard and slow process. Don’t feel bad if you don’t understand the papers, it is like reading a foreign language and can take time. I recommend printing off a copy of the paper if possible and looking up words and techniques you don’t understand and taking notes. You can also feel free to ask questions about the papers during our live chat sessions or on the Facebook group.

This months focus is on CRISPR

*CRISPR-assisted editing of bacterial genomes*

This is the paper that is the basis for the CRISPR experiment we will perform in bacteria. We will use different DNA than they used in the paper but the same principles should apply.

*Genome engineering using the CRISPR-Cas9 system*

This paper goes in depth into how CRISPR works and the different ways you can use it to edit mammalian cells.

**Things to Remember About CRISPR**

1. CRISPR is composed of 2 main parts(The Cas9 enzyme and the synthetic guide RNA(sgRNA)) with one additional optional part(the template DNA)
2. CRISPR doesn’t actually do genetic modification it just cuts DNA which initiates a cellular repair process that can result in DNA editing.
3. CRISPR works in most any organism that has a DNA cellular repair mechanism. This includes most major organisms.