Date of entry:	22-10-22
What have you done on your project this week?	**AIM – to compare the OxyR regulons across different proteobacterial species** Searched PubMed for papers on OxyR: Search term "OxyR" returned 839 hits (22-10-22), while limiting to just one species "OxyR Escherichia coli" returned 412 results (some of these are still not specific to the OxyR regulon in *E. coli* – e.g. some results about *Franciscella, Paraburkholderia,* etc.) Read and critically analysed 10 of the most relevant papers looking at OxyR-regulated genes in *E. coli* (see PRISMAdiag.jpg and Endnote library for details/references) →Reading these papers has helped me understand which genes are regulated by OxyR in *E. coli* (and how this was demonstrated experimentally)
What have you found difficult? (How do you intend to ameliorate this? How can you grow? Can you create a bullet point for your CV from this?)	Didn't understand the chIP-exo technique used in Seo *et al* 2015 initially when I read the paper (the method used and how the data are analysed). Found a paper in Curr Protoc Mol Bio (Rhee and Pugh 2013) explaining the method and this helped a little. I also found a workflow diagram made by the company AbCam (https://www.abcam.com/epigenetics/chip-20-guide-to-advanced-chromatin-immunoprecipitation-techniques) illustrating the steps in ChIP-exo, which helped even more. CV bullet point – able to understand complex molecular biology protocols (such as ChIP-exo) and interpret the results
What has been a success?	Found a database of microarray experiments from *E. coli* (it has info on different regulons, including OxyR) - GenExpDB: https://genexpdb.okstate.edu/. Looking through these data should help me understand the expression of OxyR-regulated genes in *E. coli* under different conditions.
What files/data have you produced? (are they stored securely and labelled clearly?)	Edited thesis intro: saved file with edits as thesis-intro-draft-01_Oct22_MF.docx – in "Documents/Project-Files/Drafts"

	Endnote library file (Project_references.enl) updated with new papers read started to make figure 1 – model of OxyR regulon (draft) – saved as "Figure1-DRAFT1.jpg" in "Documents/Project-Files/Figures"
What is the objective for next week?	Analyse OxyR regulon in *E. coli* using the GenExpDB – and by looking for other databases (next-gen sequencing data, maybe?) Start looking for microarray or next-gen seq from other species (probably start with NCBI databases) Continue reading published papers looking at the OxyR regulons in different proteobacteria and analysing their data