Prostate cancer is one of the most common cancers in the world, with approximately 12.9% of men being diagnosed with the disease at some point in their lives. One gene associated with prostate cancer is *RASSF1A* (Ras Associated Domain Family 1A), which is a tumour suppressor gene[1]. RASSF1A acts in many cell growth control pathways and can help induce apoptosis or cell cycle arrest [2]. In patients with prostate cancer, RASSF1A undergoes epigenetic alterations and the promoter region can be found to be hypermethylated [1, 3]. *Pan troglodytes* (Chimpanzees) have not been reported to develop prostate cancer and *the methylation state of RASSF1A in chimpanzees is unclear.*

My **primary goa**l is to determine if chimpanzees undergo epigenetic changes in the *RASSF1A* gene promoter region like human males.

My **hypothesis** is that chimpanzees do not have higher levels of DNA methylation in the promoter region of the RASSF1A gene.

My **long term goal** is to identify if different epigenetic status affect species differently.

**Aim 1**: Establish the level of conservation in the RASSF1A gene and specifically the promoter region in chimpanzees.

**Rationale**: To identify if chimpanzees have the conserved regions when aligned as these could then show the same methylation pattern.

**Approach**: I will use Clustal Omega to align the FASTA sequences.

**Hypothesis**: I hypothesise that they will have very similar conserved regions.

[1] Ge, YZ., Xu, LW., Jia, RP. et al. 2014. The association between RASSF1A promoter methylation and prostate cancer: evidence from 19 published studies. *Tumour Biol*. **35**: 3881  
[2] Donninger, H. Vos, M.D. & Clark, G.J. 2007. The RASSF1A tumour suppressor. *Journal of Cell Science*. **120**: 3163-3172.  
[3] Yegnasubramanian, S., Kowalski, J., Gonzalgo, M.L. et al. 2004. Hypermethylation of GpG islands in primary and metastatic human prostate cancer. *Cancer Research*. **64**(6): 1975-1986.