**Week 6 – Questions – Methods**

1. What are the key types of experiments that need to be carried out in order to gain a causal and mechanistic understanding of brain function?

2. Why does Karl Popper propose that hypotheses can only be falsified?

3. What similarities exist in the organisation of human and mouse brains?

4. What is the Cre-LoxP system and what is it good for?

5. How does two-photon microscopy allow high-resolution brain imaging?

6. Why are calcium-sensitive fluorophores useful for measuring brain function?

7. What types of signals can be recorded with extracellular electrodes?

8. How is it possible to record the membrane potential of a sparse cell-type in vivo?

9. What is channelrhodopsin-2?

10. What optogenetic tools exist for inhibiting a targeted population of cells?