Questions to address, and replies

1) What practical applications will emerge in the short term to the benefit of Scottish agriculture?
   Low carbon food change. Disease resistance. Improving animal productivity. Rumen biome. Avoid undesired effects. Fish farming – amoeboid disease bacteria that might compete and give health.

   In medium term. Reductionist approach. Short term might be
   Discover bacterial populations that can control growth, disease
   Novel enzymes
   Function of feed additives.
   Cataloguing what is there.
   More base sets needed.

2) How can we move towards harmonisation across biological kingdoms?

   Start with simple hypothesis testing.
   Easy to separate out DNA

3) How can we harness the lead Scotland has in high performance computing?
   Sharing of ideas – mix of people around the table useful. Bioinformatic software.
   Build links/communication between biomaths and biologists
   Perhaps a MSc in biomaths
   'Do not separate from UK'
   Get supercomputing group together with biologists
   Need more communication. Identify common tasks. Seek solutions and high speed connections.

4) How can metagenomics help in understanding climate change and its mitigation?
   Modelling of data. Might help with reduction of methane.
   Big role in bioprospecting. New microbials possible.
   SRUK. Biogeographic measurements to monitor
   Gene richness in region.

5) Can we quantify unknown biodiversity using metagenomics?

   How did alpine system work. Taxonomic identification needed. Better understanding soil protection and tree pathogens.
   Yes. But take care of methods used. Perfect method still to be found.
   Sequencing accuracy needs improved.

   Are there not better techniques

Yes, provided experiments well designed.

6) Have we done enough of the old stuff (bacteriology/virology culture)?

More needs to be done. Across may systems there is a lack of people who can recognise organisms.
Validation needed.

It depends. Important in labs and with patients. Still gold standard.

Yes.

How do we move forward?