**Week 11**

This week has been mainly dedicated to preparing the presentation of the interim report. However, I will summarise some potential interesting avenues to look at as the project develops.

Many-body quantum mechanics is naturally hard to study due the large number of possible states we have at our disposal. Out of equilibrium dynamics, complicates things further as we cease to be in a steady state. Finding ways to simplify the dynamics of these scenarios enables further study into phenomena such as thermalization, quantum transport and entanglement growth.

A coherent description of multiple dynamics on 1D Rydberg atom array I believe will prove useful in studying many-body quantum phenoma. Our project should therefore be focused on providing a rigours description of this. Moreover, we can look to new ways of modelling entanglement propagation through the system (perhaps through a quasiparticle picture).

The physics underlying a 1D Rydberg atom array is very rich and opens up many avenues to understanding equilibrium and non-equilibrium quantum many body dynamics.