**Transcript**

***Dr Sarah Lobb – Discrete integrable systems***

I work in an area of mathematics called integrable systems and that’s the study of equations, or collections of equations which although they may seem very complicated they behave in quite nice and regular ways. It’s quite a special class of equation but they’re the ones that pop up time and time again in areas such as physics. I think one of the best known examples turns up in the study of shallow water waves.

My area focuses on discrete integrable systems which are integrable systems that are defined on grids or lattices and my aim is to identify more common features of these systems and generalise existing methods and hopefully in the end to discover new systems.

The research is very, very abstract and we need people further down the line to come along and take the theory and apply it to real life situations. One thing to bear in mind is that it’s always possible on a really, really small scale that space and time is not continuous, that it’s split up into steps and in that case we need to look to discrete systems to have a more accurate depiction of reality.