

## **CETL-MSOR Conference 2015**

### **Alison Megeney: Engaging with Mathematics: how mathematical art, building mathematics, robotics and other activities are used to engage students with university mathematics and promote employability skills.**

There has been much discussion about what exactly 'employability' skills are for mathematics degrees and how skills can be embedded, promoted and developed. Mathematics graduates are highly employable and are valued for their reasoning skills, analytical and logical approaches to problem solving, and their abstract thinking. It is the more general employability skills that are more difficult to promote in a mathematics specific context within programmes.

When designing the BSc and MMath Mathematics programmes the team considered how to develop and enhance employability skills whilst promoting and engaging students with all aspects of mathematics.

The mathematics team at Middlesex University took a holistic approach and considered where skills should be developed across the programme within modules and within a series of programme seminars, activities and workshops called Engaging with Mathematics.

The aim is to get students to engage with all aspects of mathematics and go beyond mathematical tasks and techniques to develop a range of skills valued by students and employers. The team designed and embedded activities within the specialist Mathematics programme which enable students to explore and experience mathematics in different forms as well as promoting the development of knowledge and skills.

Activities included working with students from other disciplines under the guidance of a mathematical sculptor to construct a piece of mathematical art called Sword Dancing, building mathematical objects using the construction toolkit Zoometool, using a Baxter Robot to see how vectors can be applied, hearing from professional mathematicians on how mathematics underpins their work, taking part in outreach activities with schools and colleges and embedded mathematical problem solving sessions.

In this presentation the team will discuss the types of skills developed, and reflect on the successes and challenges of the venture. Additionally the team will discuss plans for future development and enhancement of the initiative.