**Presentation Abstracts**

**Understanding proof-based mathematics: challenges facing learners and educators –** Lara Alcock, Mathematics Education Centre, Loughborough University

This talk will focus on issues in learning and teaching mathematics at the

transition to proof level: I will discuss three ways in which researchers in mathematics education have conceptualised the challenges students face in adjusting to proof-based mathematics. The first challenge is the need to understand the status of formal definitions within mathematics, and to learn to work with these rather than more informal conceptions. The second challenge is to cope with the rapid introduction of new types of abstract object. The third challenge is to develop strategies for constructing and understanding proofs - two overall strategies and associated sub-skills will be discussed. The talk will include illustrations and I expect that it will lead naturally to discussion of the ways in which various teaching strategies and other forms of support might assist students in meeting these challenges.

**From Further to Higher Education: sharing experiences and practice -** Claire Willman, Faculty of Maths and Science, Exeter College

This talk will explore the mathematical understanding and skills students are developing before coming to University and the strategies employed by Lecturers in Further Education to support these students. It will also consider the expectations students have of moving into Higher Education and lead to a discussion on how we can best support this transition.

**Support on a shoe-string: the distributed model -**Barrie Cooper, School of Engineering, Mathematics and Physical Sciences and Rachel Canter, Education Enhancement, University of Exeter

Few universities in the current economic climate can afford to fund central cross-curricular remedial support services in mathematics and statistics. At Exeter, the maths and stats support service works closely with individual departments to provide targeted support designed to enhance existing

provision at programme-level. We briefly describe the nature of this relationship and explore ways in which effective support mechanisms can be designed into the curriculum.