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## **Transition to higher level mathematics study for disabled students: anticipating and resolving barriers**

**Day 2 – Parallel IV (11.25-11.55)**

To meet the needs of a diverse student population the requirements of disabled students and prospective students in mathematical subjects must be considered. There is a legal requirement to anticipate and resolve barriers in a proactive manner and to be aware of additional adjustments which may be reasonable. The modes in which mathematics is communicated can present specific access challenges. For instance, the Equality and Human Rights Commission in their report *'What equality law means for you as an education provider – further and higher education'* (2011) highlight a common anticipatory adjustment of providing resources in advance in electronic formats. In non-mathematical subjects this adjustment can often be met by providing electronic resources the lecturer has already created, such as slides or handouts, unaltered. However, as noted by the Quality Assurance Agency for Higher Education *'Subject benchmark statement for Mathematics, Statistics and Operational Research'* (2007) traditional board-based lectures continue to have substantial merit in mathematical subjects and hence lecturers do not always create electronic resources. Even where such resources exist, equations in common electronic formats are not accessible via assistive technology. It is therefore necessary to consider the specialist nature of mathematical study when anticipating and resolving barriers and to ensure that the infrastructure required to deliver adjustments is available. Failure to anticipate and plan can impact on the aspirations of prospective students and their advisers and is itself a barrier. Further, a reliance on reactive adjustments made only after arrival can impede successful transition to higher level study.

We present an overview of the outcomes of a HESTEM funded 'follow-up' project (2012/13) on transition to higher education (HE) for students with visual impairments (VI) in Science, Technology, Engineering and Mathematical (STEM) subjects. STEM graduates and staff with VI were invited to attend an intensive one day collaboration to produce a framework for guiding and optimising the process of transition to HE for students with VI who wish to study a STEM subject. They were joined by staff with experience of working with students with VI including lecturers, disability advisers, needs assessors, teachers and representatives from Sensory Support Services, the RNIB and JISC TechDis. A detailed output from this collaboration presents the framework produced in the context of extensive quotes and discussion points from the day and a set of key recommendations for further work at a national, regional and local level.

We place the output of this collaboration in the wider context of work on access to mathematical subjects for disabled students in the UK. Drawing on this we offer a view of the mathematics specific considerations which are required when anticipating and resolving barriers and designing additional adjustments. In particular we clarify the local, regional and national infrastructure which may be required. Through this we hope to assist mathematical departments to take a transparent, anticipatory approach to meeting the needs of disabled students and to promote the communication of positive aspirations to prospective disabled students.