Part of the purpose of an undergraduate mathematics education is to foster the development of students’ expert-like conceptions of mathematics. In this presentation, we introduce the Mathematics Attitudes and Perceptions Survey (MAPS), designed to assess these conceptions in authentic educational settings by scoring student responses based on their alignment with those of mathematics faculty. The development and validation of MAPS will be briefly outlined, followed by the main results that have emerged from use of MAPS in a selection of undergraduate courses. These results corroborate results from other STEM disciplines: MAPS scores correlate with course grades; students tend to move away from expert-like orientations over their first semester or year of taking a mathematics courses; and, compared to traditional lecturing, interactive-engagement type lectures appear to have less of a negative impact - though not necessarily a positive impact - on students’ orientations relative to experts. (Received September 22, 2015)