

1077-K5-1271 **Alison Ahlgren*** (aahlgren@illinois.edu), Department of Mathematics, 1409 West Green Street, Urbana, IL 61801, and **Marc Harper** (marcharper@ucla.edu). *Identifying Crucial Concepts and Skills, and Preparing College Students for Success in Calculus*. Preliminary report.

The placement program began at the University of Illinois in 2007 and is currently in its 5th year. All students take an online assessment and are offered the opportunity to use the ALEKS technology to remediate prior to course enrollment. Data from three years of placement covering thousands of U of I students on 182 concepts and skills has yielded unprecedented specificity in determining which items are indicative of student preparedness and success in three forms of Calculus. Items are naturally partitioned by statistical analysis into a spectrum from basic to advanced and are traceable throughout the sequence of courses, clearly identifying particularly strong and weak students. Further, it is possible to determine which items correlate most significantly with student performance in Calculus and to see if these items are being adequately addressed in Precalculus. If not, then changes to the Precalculus and summer readiness curriculums can be made to reflect the reality dictated by the data. These results are of use to educators, instructors, and placement program developers. We present examples and vivid visualizations of the results from this study. (Received September 18, 2011)