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A Tale of Two Curricula: The performance of two thousand students in introductory electromagnetism[1] MICHAEL SCHATZ, MATTHEW KOHLMYER, MARCOS CABALLERO, School of Physics, Georgia Institute of Technology, RUTH CHABAY, BRUCE SHERWOOD, Department of Physics, North Carolina State University, RICHARD CATRAMBONE, MARCUS MARR, School of Psychology, Georgia Institute of Technology, MARK HAUGEN, Department of Physics, Purdue University, LIN DING, Department of Physics, The Ohio State University — Student performance in introductory calculus-based electromagnetism (E&M) courses at four large research universities was measured using the Brief Electricity and Magnetism Assessment (BEMA). Two different curricula were used at these universities: a traditional E&M curriculum and the Matter & Interactions (M&I) curriculum. At each university, post-instruction BEMA test averages were significantly higher for the M&I curriculum than for the traditional curriculum. The differences in post-test averages cannot be explained by differences in variables such as pre-instruction BEMA scores, grade point average, or SAT scores.

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