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**Investigating student understanding of acceleration in two dimensions**[1] SEAN M. COURTNEY, MACKENZIE R. STETZER, PETER S. SHAFFER, LILLIAN C. MCDERMOTT, University of Washington — The Physics Education Group at the University of Washington has been conducting an ongoing investigation of student understanding of two- dimensional kinematics. The results have guided the design of curriculum that has been shown to help many students improve their conceptual understanding of motion in two dimensions.[2,3] The current research is an effort to make further gains in student learning. A primary source of data are pretests and post-tests administered in introductory physics courses at the University of Washington and other colleges and universities. Specific examples of conceptual and reasoning difficulties associated with this material will be illustrated in the context of uniform and non-uniform circular motion.

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[2] *Tutorials in Introductory Physics*, L.C. McDermott, P.S. Shaffer and the Physics Education Group at the University of Washington, Prentice Hall (2002).
[3] *Physics by Inquiry*, L.C. McDermott and the Physics Education Group at the University of Washington, Wiley (1996).

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