Abstract Submitted
for the MAR05 Meeting of
The American Physical Society

Student difficulties with the concept of work in introductory physics[1] BETH LINDSEY, PAULA R. L. HERON, PETER S. SHAFFER, LILLIAN C. MCDERMOTT, University of Washington — In order to apply the principle of energy conservation correctly, students need to be able to calculate the work done on a deformable system. The distinction between calculating work on a non-deformable system and on a deformable system is one that is only rarely made in introductory texts and lectures. At the University of Washington, the Physics Education Group has been developing research-based tutorials to supplement traditional instruction in textbooks, lectures, and labs. We will discuss how students frequently misapply the definitions of work that they are taught for non-deformable systems and ways in which this affects instruction on energy conservation. Results from student pretests, post-tests, and individual demonstration interviews will be presented.

[1]*This work has been funded in part by the National Science Foundation.

Beth Lindsey
University of Washington

Date submitted: 02 Dec 2004 Electronic form version 1.4