

NWS08-2008-000082

Abstract for an Invited Paper  
for the NWS08 Meeting of  
the American Physical Society

**Developing and assessing research-based curriculum: Examples from the electricity and magnetism lab**  
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The traditional laboratory curriculum for the introductory physics course emphasizes the verification of formulae, the use of complicated instruments, and in-depth error analysis calculations. Students conduct experiments for which they already know the expected outcome. The questions they ask tend to focus on the manipulation of the apparatus, rather than on making sense of the phenomena. At Western Washington University, efforts are underway to develop a research-based, guided inquiry curriculum for the calculus-based E&M lab. This curriculum seeks not only to promote functional understanding of fundamental concepts, but also to guide students through the process of observation and inference so that they become aware of how they know what know. Assessment of student learning has been integral to the project. This talk will provide a brief overview of the labs, describe selected examples in more detail, and present data from written questions and multiple choice instruments to evaluate student understanding.