

**University of Colorado's  
Upper Division Electricity & Magnetism materials**

**Stephanie Chasteen, CU Boulder**

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NSF CCLI Grant #0737118, PIs K. Perkins, S. Pollock, M. Dubson, N. Finkelstein, J. Cumalat)

## **CONCEPT TESTS**

This concept test / clicker question collection were constructed over the course of 4 semesters of a transformed junior-level Electricity and Magnetism course on electro- and magneto-statics. They are intended to be used with personal response systems (PRS) with peer instruction. Developers include Steven Pollock, Stephanie Chasteen, Mike Dubson, Ed Kinney, and Thomas Schibli. See also [Chandralekha Singh, " Student understanding of symmetry and Gauss's law of electricity " Am. J. Phys. \*\*74\*\* 923 \(2006\)](#)

Some comments in the notes section of each slide will inform you about what happened in our class when they were used, such as average student responses.

### **Are you having trouble with the formatting in our clicker question files?**

These files were created in Powerpoint 2004; some graphics do not transfer well to the newer version of Powerpoint. We believe we have fixed these problems, but refer to the PDF version of a slide if you think there may be an error. Additionally, sometimes your "slide master" may have different settings than the "master" when the slides were created, which causes formatting difficulties (like questions that are too small to read, or answers that spill off the page). The file 000\_slide-master.pot (below) will fix that. In your Powerpoint with the clicker questions, choose "Format" and then "Slide Design". Navigate to this file (000\_slide-master.pot) and select it. All the original styles should be applied to all slides, and they should be formatted correctly. If you want to change the default formatting of the slides, change the "slide master" of this file, and follow steps 1-3.

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