Niles Johnson* (niles@uga.edu) and Justin Noel. *Obstruction theory for $E_{\infty}$ maps. Preliminary report.

We take an obstruction-theoretic approach to the question of algebraic structure on spectra. At its heart, this is an application of the Bousfield-Kan spectral sequence adapted for general operadic structure in a range of topological categories. This talk will focus on examples from rational homotopy theory which illustrate the obstructions to rigidifying homotopy algebra maps between differential graded algebras to strict algebra maps. In the topological context, these provide explicit examples of $H_{\infty}$ maps which cannot be rigidified to $E_{\infty}$ maps. (Received September 21, 2011)