Abstract Submitted
for the APR20 Meeting of
The American Physical Society

Guided Group Work in Graduate-Level Physics[1] CHRISTOPHER PORTER, ANDREW HECKLER, Ohio State Univ - Columbus — There have been a handful of studies that have looked at graduate physics education that report generally poor performance on conceptual questions. One instructional technique that has led to significant improvements in performance on conceptual questions at the undergraduate level is guided group work (GGW). Given the substantial selection effects between graduate and undergraduate populations, it is an open question whether group work might be useful at the graduate level. GGW sessions have been developed and run over the past five years at the Ohio State University in the Department of Physics. Sessions exist for each core course, but this work will focus on quantum mechanics. Students were given pretests and posttests that consist of some calculations, but mostly of conceptual questions. We will discuss trends in student performance across four years (˜160 students), using many assessment questions covering various standard quantum mechanics content areas. We find a statistically significant effect of GGW attendance on student performance on related conceptual questions, even many weeks after instruction. Potential confounding effects are discussed, including student self-selection into treatment groups.

[1]Supported by the NSF Innovations in Graduate Education Award

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Date submitted: 09 Jan 2020 Electronic form version 1.4