

Abstract for an Invited Paper
for the NWS05 Meeting of
The American Physical Society

Physics education research as a guide to professional development of teachers K-20¹

PAULA HERON, University of Washington

It is by now well known that many students emerge from traditional physics courses without having developed a functional understanding of important basic concepts. Moreover, there is evidence that conceptual and reasoning difficulties similar to those identified among undergraduates are also found among K-12 teachers and graduate teaching assistants, and sometimes even among college and university faculty who may not remember their own struggles with the material. Examples from programs conducted by the Physics Education Group at the University of Washington will be used to illustrate how teachers of physics at all levels can be helped to deepen their understanding of the subject matter, become familiar with the difficulties it presents to students, and develop skill in using types of instructional strategies that have proved to be effective in promoting intellectual engagement.

¹Supported in part by the US National Science Foundation