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Gulden Karakok* (gkarakok@science.oregonstate.edu), Science and Mathematics Education Department, Weniger Hall, 239, Oregon State University, Corvallis, OR 97331, and **Tina L. Johnston, Maggie Niess and Tevian Dray.** *Enhancing Middle School Teachers' Knowledge of Mathematics.*

To meet rural mathematics teachers' needs a three-year project was designed by Oregon State University and five school districts in Central Oregon and received a Title II MSP grant. The main goal of the project is to increase teachers' content and pedagogical content knowledge of mathematics and knowledge of NCTM standards. Both experimental and control teachers in grades K-8 were identified. Experimental group teachers were supported with a two-week summer institute, monthly class sessions and weekly online discussions during each of the three project years. The professional development was designed and implemented as a plan that modeled standards-based learning principles while teaching rigorous mathematics content in Probability and Statistics, Geometry, Measurement, Algebra, and Number Sense. This study with its quasi-experimental design found significant improvement in the experimental group participants' content knowledge in two content areas. It was noticed that teacher participants' attitudes were more closely aligned with the NCTM principles at the end of the professional development. Changes in student achievement between control and experimental group teachers will be reported. Curriculum adjustment and the integrating sustainability plans will also be discussed. (Received September 27, 2006)