



Figure 5. RNAi-mediated histone and DNA methylation in *Arabidopsis*. A summary of RNAi and chromatin proteins required for RNAi-mediated DNA and histone methylation in *Arabidopsis* are indicated. Synthesis of dsRNA from repeated DNA elements provides a substrate for Dicer-mediated cleavage and siRNA generation (DCL3 and other Dicers). RNA-directed RNA polymerases (RdRP, RdR2) and RNA polymerase IV (RNA Pol IV) may be directly involved in the synthesis of dsRNA or its amplification. siRNAs then load onto Argonaute proteins (e.g., AGO4), which is likely to help target cognate repeat sequences for DNA methylation (pink hexagons catalyzed by pink DNA methyltransferase enzymes) and H3K9 methylation (red hexagons via the red HKMT enzyme) in association with other factors, including chromatin remodeling proteins (pale green) and HDAC enzymes (cyan). See Ch. 13 (Pikaard and Mittelsten Scheid 2014) for more detail.