ABSTRACT:
I will present two stories which illustrate how histone modifications and histone modifying complexes participate in signaling for gene transcription. The first story is from experiments in budding yeast which shows how elongating RNA polymerase II signals to restore the structure of chromatin behind it. This is accomplished by signaling for histone deacetylation and by preventing the incorporation of new histones into transcribed regions. The second story comes from studies in fruit flies, where a novel metazoan histone acetyltransferase complex was discovered. This complex, termed ATAC, was found to act as a positive co-factor from genes activated by the c-jun transcription factor. C-jun is activated by MAP kinase signaling. Surprisingly ATAC also regulates the level of upstream MAP kinase signaling to govern the transcriptional response to these signals.

References: