



New chemically driven strategies for understanding and controlling epigenetic processes in mammalian cells



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Clark 101

4:00 p.m.

The Hathaway lab uses a combination of chemical-biology and cell-biology approaches to unravel the molecular mechanisms that govern gene expression. We utilize new chemical tools wielding an unprecedented level of temporal control to visualize changes in chromatin structure and function in mammalian cells. In addition, we seek to identify small molecule inhibitors that are selective for chromatin regulatory enzymes with the potential for future human therapeutics. This seminar will detail new inhibitors of heterochromatin gene repression that have been identified by a cell based high throughput screen. These inhibitors have been used to discover new molecular components of the heterochromatin gene repression pathway. Secondly, we will detail a novel deactivated Cas9 based technology developed in the lab that combines small bi-functional molecules to recruit endogenous epigenetic machinery to a specific genetic loci and cause changes to chromatin structure and gene expression.