The Denu lab investigates the mechanisms and biological function of reversible protein modifications involved in modulating signal transduction, chromatin dynamics and metabolism. Chromatin remodeling enzymes rely on co-enzymes derived from metabolic pathways, suggesting coordination between nuclear events and metabolic networks. Investigations are underway to understand the link between metabolism and the regulation of epigenetic mechanisms. We are testing the hypothesis that certain chromatin modifying complexes have evolved to exquisitely ‘sense’ metabolite levels and respond accordingly, modifying specific chromatin loci for altered gene expression.