Specific Aims:

1. **Specific Aim 1: Discovery and characterization of REST-mediated epigenetic modifications.** 
   * Characterize patterns of epigenetic modifications mediated by REST. Conduct secondary analysis by integrating existing epigenetic data in CD4+ T cells to characterize the most significant epigenetic influences of REST binding. Discover if REST mediates differential epigenetic modifications in a context-specific (functional or sequence specific) manner.
2. **Specific Aim 2: Differential REST binding in cancer.** 
   * Comparative analysis of REST binding and other epigenetic modifications in normal and malignant human CD4+ T cells. Identification of differential epigenetic landscape and REST regulatory network in cancer. Characterization of REST-mediated epigenetic modifications in the cancer cell line. [hypothesis: rest should be acting as a tumor suppressor in CD4+ t cells, if REST is knocked down in Jurkats, perhaps there is a finite amount of coREST or mSIN3 for REST to bind with, and when it is knocked down you see per capita more coREST/mSIN3 binding/epigenetic modifications mediated by proteins that those cofactors recruit?]
3. **Specific Aim 3: Experimental validation of REST mediated changes in the epigenetic landscape.**
   * Experimentally validate that the significant epigenetic modifications identified in Aim 1 are mediated by REST and validate the context-specificity of REST-mediated changes in the epigenetic landscape.