

In biological organisms, there exists, beyond DNA and genetic material, an additional layer of information called "epigenetics". This information is coded into the genetic structures that hold DNA through chemical interactions. By modifying these structures, the transcription of certain genes can be silenced or promoted; thus, epigenetics can be used to explain biological phenomenon such as cell differentiation during development or the adaption of different populations of species to environmental stresses. Despite growing interest in epigenetics and its potential biomedical applications, relatively little is known about the molecular mechanisms behind epigenetic changes or how these changes are sustained across multiple generations. This summer, with support from the France-Stanford Center for Interdisciplinary Studies, I will collaborate with Dr. Germano Cecere's lab at the Institut Pasteur in Paris, France, to study epigenetics. In order to better understand the biomolecular mechanisms underlying epigenetic changes, I will identify and isolate the specific proteins associated with this process. It is the hope that future researchers will be able to use our work in order to better understand how epigenetics influence growth and evolution.