

Project 1 Title: Categorizing the Type of Weather that Causes Flooding in New York City

Description: Heavy rain and flooding in the New York City and Tri-state region is usually caused by a large storm. However, the type of storm can be either a hurricane or a midlatitude frontal storm. Sometimes it is a combination of both. In this project, the students will analyze a time-series of rain fall for NYC to identify different types of extreme precipitation events (1-day, 2-day, and 1-week extremes). Then the students will use a catalog of hurricanes and frontal storms to associate the extreme rain events with weather patterns. The analysis will use Matlab and will involve meteorology, statistics and graphical design.

Project2 Title: Are the Winters in New York City Getting Longer?

Description: The past two winters in the greater New York City region have been cold and long. Is this part of a bigger trend? This study will use surface weather observations and statistical analysis to test this hypothesis. The work will begin with student choosing specific testable hypotheses related to the length and strength of the winter. Then the students will use observations of temperature and precipitation to examine these questions. The analysis will use Matlab and will involve meteorology, statistics and graphical design.