This is an overview of a multi-agency, multi-university atmospheric field campaign to study ozone over Lake Michigan. The objective of the study was to use a wide swath of chemical and meteorological measurements to improve air quality modeling in the region. In order to understand the processes by which ozone is generated over Lake Michigan to harmful levels, measurements of ozone precursors (volatile organic compounds and nitrogen oxides) were taken via aircraft and ground monitoring stations. Mobile laboratories measured gradients along the shoreline of Lake Michigan. The influence of the lake breeze meteorology on the movement of pollution was also studied. UW-Eau Claire undergraduate students worked along with researchers from the EPA, NOAA, Wi-DNR, NASA, University of Iowa, UW-Madison, University of Minnesota, University of Northern Iowa and University of Maryland Baltimore County as a part of this large field campaign.