

## **Abstract**

With continuous advances in science and technology, there is high potential for a variety of agents to be used in bioterrorist attacks, making it difficult to prevent and mitigate the effects. Geographic Information Science (GIS) is an important tool in contributing to the preparedness, response, and recovery from bioterrorist attacks. GIS is beneficial in processing a significant amount of data for a multifactorial analysis and generating visual representations that indicate risk levels of designated areas, dependent upon specific variables throughout the area.

Authorities such as health and human service agencies, Center for Disease Control (CDC), and the Department of Homeland Security (DHS) could utilize this information to decrease the effect of the attack and increase mitigation efforts, leading to a quicker recovery. In this analysis, GIS is used to assess and clearly portray the high, moderate, and low-risk areas for bioterrorism within certain parameters throughout San Diego County. The contributions of the resulting information include monitoring and surveillance as well as emergency preparedness, planning, and response. The specific parameters consist of aerosol dispersal of the biological agents, or pathogens, anthrax and plague with dissemination methods via devices such as airplanes, or ground detonation. This assessment comprises of locations of military bases or operations, population density, wind patterns, previous attacks, government buildings, public transportation, areas containing high profile people or projects, and areas in which the topography might influence the spread of the biological agent.