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**Discipline** Global Public Health

**Presentation Type** Oral Presentation

**Presentation Title** Wildfires, Climate Change and Land Use Change in California and its Effect on the Prevalence of West Nile Virus

**ZOOM Link** <https://dominican-edu.zoom.us/j/98016912408>

#### **ABSTRACT**

West Nile Virus (WNV) is an emerging vector borne disease, found throughout the continental United States. The first U.S. case of WNV was in New York in 1999, and California had its first case in 2003, where the annual number of cases is highest in the country. WNV is transmitted to humans through pathogen-infected mosquitoes., which are highly susceptible to environmental changes. California experiences many land use and climate changes that affect mosquitoes and WNV's habitat, creating and altering hotspots throughout the state where disease transmission is high. This goal of this study was to investigate the relationship between the environmental changes experienced in Northern California and WNV risk in 18 counties (Alameda, Colusa, Contra Costa, Marin, Merced, Napa, Placer, Sacramento, San Francisco, San Joaquin, San Mateo, Santa Clara, Solano, Sonoma, Stanislaus, Sutter, Yolo, Yuba). Land use changes such as agricultural and housing development create higher risk for WNV and mosquitoes; along with environmental changes such as climate change and increased wildfires have also shown to increase the risk of vector borne disease and WNV throughout Central and Southern California. These trends give evidence that disease risk is not randomly distributed, and higher risk the 18 selected NorCal counties may be related to the environmental factors. As the environment continues to change, mosquitoes should move to more highly populated areas, leading to increased risk and cases of WNV in Northern California. Results from this project may be used to better inform disease mitigation programs.

**Keywords:** West Nile Virus, California, climate change, land use change, environmental change, wildfire, disease, vector, mosquito