1135-92-1639 **Tufail M Malik*** (tufail@asu.edu), Science and Mathematics, Arizona State University, Mesa, AZ 85142. *A Discrete Time West Nile Virus Transmission Model with Optimal Bird- and Vector-Specific Controls.*

A discrete-time model describing the west nile virus transmission among the mosquito, wild bird, and domestic bird populations will be presented. The expressions for the basic reproduction number and the disease-free fixed point of the model will be discussed. Correspondingly the local stability of the disease-free fixed point will be established. Optimal control theory will be used to devise the most effective administration profile of mosquito larvicide, mosquito adulticide and domestic bird-protection in controlling the virus transmission among the mosquito - wild bird - domestic bird community. (Received September 24, 2017)