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Ruijun Zhao* (ruijun.zhao@mnsu.edu), 273 Wissink Hall, Department of Mathematics and Statistics, Minnesota State University, Mankato, Mankato, MN 56001. *Mathematical Modeling of Control Strategies of Malaria.*

Malaria is one of the most prevalent diseases worldwide and a leading cause of death in many developing countries. Malaria is caused by a parasite called Plasmodium, which is transmitted through mosquito biting between two hosts: humans and mosquitoes. Malaria can be treated with artemisinin-based combination therapies, however, the most effective ways in controlling the disease are through protective measures, such as insecticide-treated bed nets, indoor/outdoor spray, developing effective vaccines, etc.

In this talk, I will discuss a few mathematical models that we recently developed in understanding the effectiveness of these control strategies, particularly on insecticide-treated bed nets and vaccination. This work is jointly done through collaboration with Dr. Jemal Mohammed-Awel and Dr. Calistus Ngonghala, and others. (Received September 16, 2014)