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**Jia Li\*** ([li@math.uah.edu](mailto:li@math.uah.edu)), Department of Mathematical Sciences, University of Alabama in Huntsville, Huntsville, AL 35899. *Transgenic Mosquitoes and the Impact on Malaria Transmission.*

To prevent malaria transmission, genetically-altered (transgenic) mosquitoes, that are resistant to malaria infection, become an effective weapon. To study the impact of releasing transgenic mosquitoes into the field of wild mosquitoes, we formulate mathematical models of interactive wild and transgenic mosquitoes. We consider both dominant and recessive transgenes, and include density-dependent vital rates. With fundamental analysis of the dynamics of the interactive mosquitoes, we then introduce them into simple compartmental malaria transmission models. We study the dynamics of the simple malaria model and the models with the transgenic mosquitoes, and investigate the impact of transgenic mosquitoes on the malaria transmission. (Received August 16, 2010)