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Maeve L. McCarthy* (mmccarthy@murraystate.edu), Mathematics & Statistics, Murray State University, Murray, KY 42071, and **K. Renee Fister** and **Seth F. Oppenheimer**. *Optimal control of sterile insect techniques*.

We develop an optimal control framework to investigate the introduction of sterile type mosquitoes to reduce the overall mosquito population. Mosquitoes are vectors of disease. The goal is to establish the existence of a solution given an optimal sterilization protocol as well as to develop the corresponding optimal control representation to minimize the infiltrating mosquito population while minimizing fecundity and the number of sterile type mosquitoes introduced into the environment per unit time. (Received September 16, 2019)