1116-VC-1159 **Timothy E Robertson*** (`robertsont@andrews.edu`), 10623 Red Bud Trail, Berrien Springs, MI 49103, and **Joon H. Kang** (`kang@andrews.edu`). *Conditions for positive solutions to the general elliptic model.*

We investigate mathematical conditions to guarantee the existence and uniqueness of positive solutions to a general elliptic mathematical model. This result generalizes the existence and uniqueness of positive steady state solutions to a Lotka-Volterra competition model with homogeneous boundary conditions for two species of animals competing in the same environment. Under what conditions do they coexist peacefully? It is natural to say that they can coexist peacefully if their reproduction rates and self-limitation rates are relatively larger than those of competition rates. In other words, they can survive if they interacts strongly among themselves and weakly with others. (Received September 22, 2015)