962-35-1407 **Junping Shi*** (shij@math.wm.edu), Department of Mathematics, College of William and Mary, Williamsburg, VA 23187. *Diffusive logistic equations with predation terms.*

We consider the asymptotic behaviors of the solutions to a diffusive logistic equation with predation terms:

$$P_t = \Delta P + \lambda[P - P^2 - g(P)], \quad \text{on } (0,\infty)\times\Omega, \tag{1}$$

$$B(P) = 0, \quad \text{on } (0,\infty)\times\partial\Omega, \quad P(0,x) = P_0(x) \geq 0, \tag{2}$$

where $P(t,x)$ is the population density function, Ω is a smooth bounded domain in $\mathbf{R}^n$, $n \geq 1$, $B(P)$ is the boundary condition: either $B(P) = P$ or $B(P) = \partial P/\partial n$, and $g(P)$ is a smooth function on $[0,\infty)$ such that $g(P) \geq 0$. We shall consider the cases when $g(P)$ is a positive constant or $g(P)$ is the Holling-type: $g(P) = kP/(1+P)$. Global bifurcation diagrams (for the stationary solutions) in (λ, P) space will be discussed, and the corresponding dynamical behaviors in the population evolution will also be addressed. The talk is partly based on some joint works with Philip Korman (University of Cincinnati) and Ratnasingham Shivaji (Mississippi State University). (Received October 03, 2000)