KUNQUAN LAN, Ryerson University *Diffusive logistic models with harvesting rates*

This presentation is based on my recent work on one-dimensional diffusive logistic models with constant harvesting rates. I shall derive a one-dimensional diffusive logistic population model with a constant harvesting rate under the assumptions that a population inhabits a patch of dimensionless width and no members of the population can survive outside of the patch. I shall apply the fixed point index theory and semi-positone Hammerstein integral equations to tackle the essential problem: determining the size of the patch and the ranges of harvesting rates under which the population survives or becomes extinct.