1145-92-1679 **Junping Shi***, Department of Mathematics, College of William and Mary, Williamsburg, VA 23187, and **Chuncheng Wang**, **Hao Wang** and **Qingyan Shi**. *Modeling animal movement with memory with partial differential equations with time-delay.*

Animal populations often self-organize into territorial structure from movements and interactions of individual animals. Memory is one of cognitive processes that may affect the movement and navigation of the animals. We will introduce our recent work using partial differential equations with time-delay to model and simulate the memory-based movement. We will show the bifurcation and pattern formation for such models. (Received September 23, 2018)