

Laboratory for Industrial and Applied Mathematics

LIAM Distinguished Lecture Series

Dispersal Heterogeneity and the Spreading Speeds of Marine Invasions

Professor James Watmough, University of New Brunswick

Tuesday, March 19, 2018

10:30am – 11:30pm

LIAM Lab Kinsman 277

Abstract: We propose a structured integro-difference equation model for an invasive marine species with a pelagic larval stage and examine the role of dispersal heterogeneity on the spreading speed. The spread of the green crab up the northwest coast of the Atlantic is used as a case study. We find that the relationship between spreading speed and demographic and dispersal parameters is similar to the relationship found in Fisher's equation. We also find that temporal variation in dispersal results in a faster spread rate than predicted by a time-averaged dispersal kernel. This is joint work with Lin Wang, Myriam Barbeau and Ali Gharouni.

Speaker: James Watmough is a Professor at the Department of Mathematics and Statistics, University of New Brunswick. He was the project leader and co-investigator of the Mprime Network for Biological Invasions and Dispersal Research, and a core-investigator of the Mprime project Infectious Diseases: Modelling, Prediction and Control. He is a founding member of the Centre for Disease Modelling.

