Project title: Mathematical epidemiology

Supervisor(s):	Dr Gabor Kiss
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Helpful existing knowledge:	Mathematics and/or biology.

Project Description:

This PhD studentship at Queen's University Belfast, hosted by the Mathematical Science Research Centre within the School of Mathematics & Physics, offers a unique opportunity to advance mathematical modelling of infectious diseases at the interface of mathematics, epidemiology, and public health. The successful candidate will contribute to international collaborations involving institutions in Northern Ireland, Thailand, and Vietnam, supporting efforts to analyse laboratory and patient data, develop and refine dynamical systems models, and implement simulation code for disease spread analysis. The project requires strong mathematical or computational skills (with dynamical systems knowledge advantageous), proficiency in programming (e.g., Python, R, MATLAB), and a keen interest in infectious disease epidemiology. Applicants should hold a first or upper second-class honours degree (or equivalent) and be prepared to work both independently and within a multidisciplinary team to produce impactful research communicated through publications and presentations.

Useful references

Stability, Instability and Chaos An Introduction to the Theory of Nonlinear Differential Equations by Paul Glendinning,
Differential Equations, Dynamical Systems, and an Introduction to Chaos by Morris W. Hirsch, Stephen Smale, Robert L. Devaney
Mathematical epidemiology of infectious diseases : model building, analysis and interpretation by O. Diekmann and J.A.P. Heesterbeek.