

Thursday, July 26th, 15:30

Room: C3 - Main Auditorium

PLENARY SPEAKER

MATHEMATICAL APPROACHES TO MODELLING AND REMODELLING BIOLOGICAL TISSUES

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ABSTRACT

As the field of mathematical biology has matured, closer collaboration with experimentalists and clinicians has become more wide common, these changes bringing multiple benefits to both communities. For example, the mathematical models can increase our understanding of biological systems while the biological questions can stimulate new theoretical challenges. This symbiotic relationship can be exemplified by studies of biological tissues.

Biological tissues are complex, evolving structures, characterised by multiple interactions that act across diverse space and time scales. In this talk I aim to illustrate how theoretical studies of biological tissues can provide new mechanistic insight into their behaviours while also acting as a source of mathematically challenging problems. I will take my inspiration from recent studies of cancer, wound healing, tissue engineering and retinitis pigmentosa, a degenerative disease that causes blindness.