



# UNIVERSITÀ DI PARMA

DIPARTIMENTO DI SCIENZE MATEMATICHE, FISICHE E INFORMATICHE

<http://smfi.unipr.it>

SEMINARIO

Prof. *Kevin John Painter*, Politecnico di Torino

***Models for chemosensitive movement:  
the impact of flow and phenotypic structure***

**Martedì 12 aprile 2022, ore 14:00**

**Sala riunioni, III piano , Plesso di Matematica e Informatica**

*Abstract: The gathering of cells or animals into large groups provides one of nature's most spectacular examples of self-organising behaviour. To achieve this within a fluid environment, though, could involve confronting strong and turbulent flows. Cells and animals can neutralise flows by swimming upstream, a phenomenon termed rheotaxis. But is it always advantageous to use rheotaxis? Adapting the well known Keller-Segel framework, we look at the effects of flow both in the presence and absence of rheotaxis, teasing out scenarios under which group formation and maintenance is enhanced. Optimised behaviour results not when rheotaxis is always on, but modulated according to local population density.*

Tutti gli interessati sono invitati a partecipare.

Organizzatrice: Prof.ssa Marzia Bisi