

Kit Yates

Head of the Mathematical Developmental
Biology group

and

Co-director of the Centre for Mathematical
Biology

LMS Prospects in Mathematics

My Journey

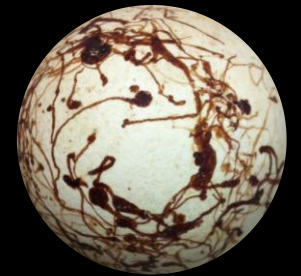
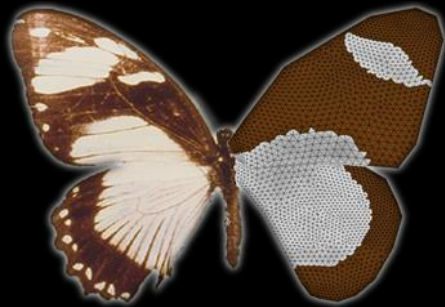
Undergraduate



MSc



Pattern formation



PhD



What is Mathematical Biology?

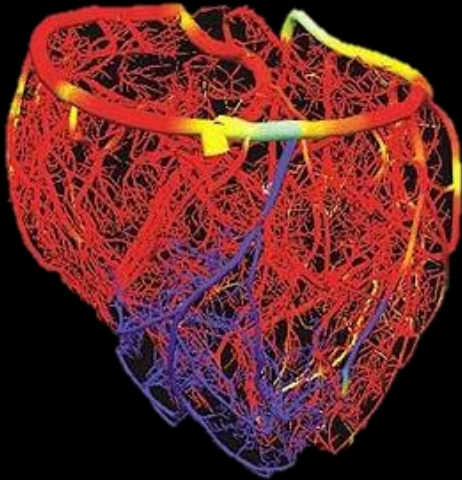


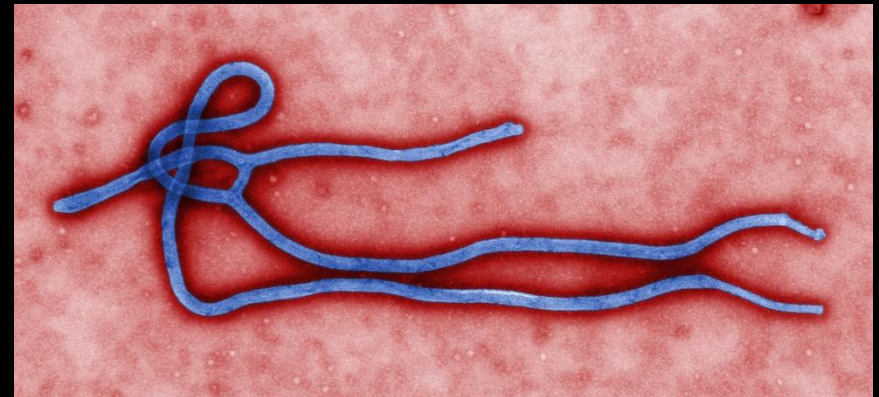
Photo: Prof. Denis Noble, Oxford University, UK)



<http://cimballiuk.com/love-drinking-coffee-it-may-genes/>



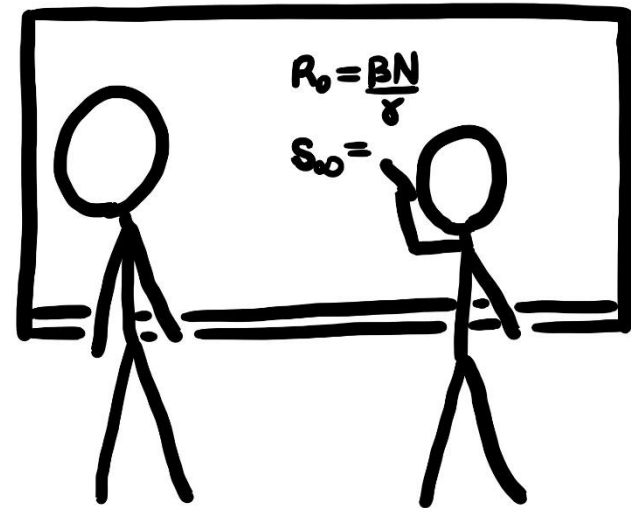
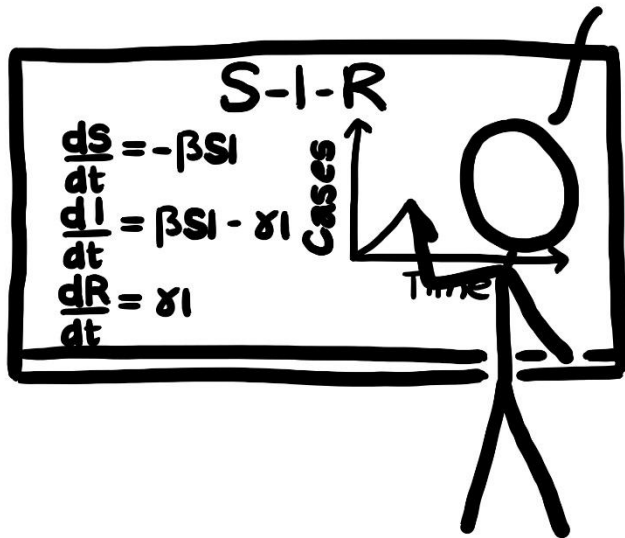
<http://oceana.org/marine-life/ocean-fishes/atlantic-bluefin-tuna>



Public Health Image library

Mathematical epidemiology

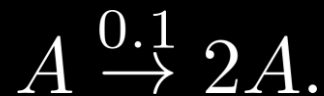
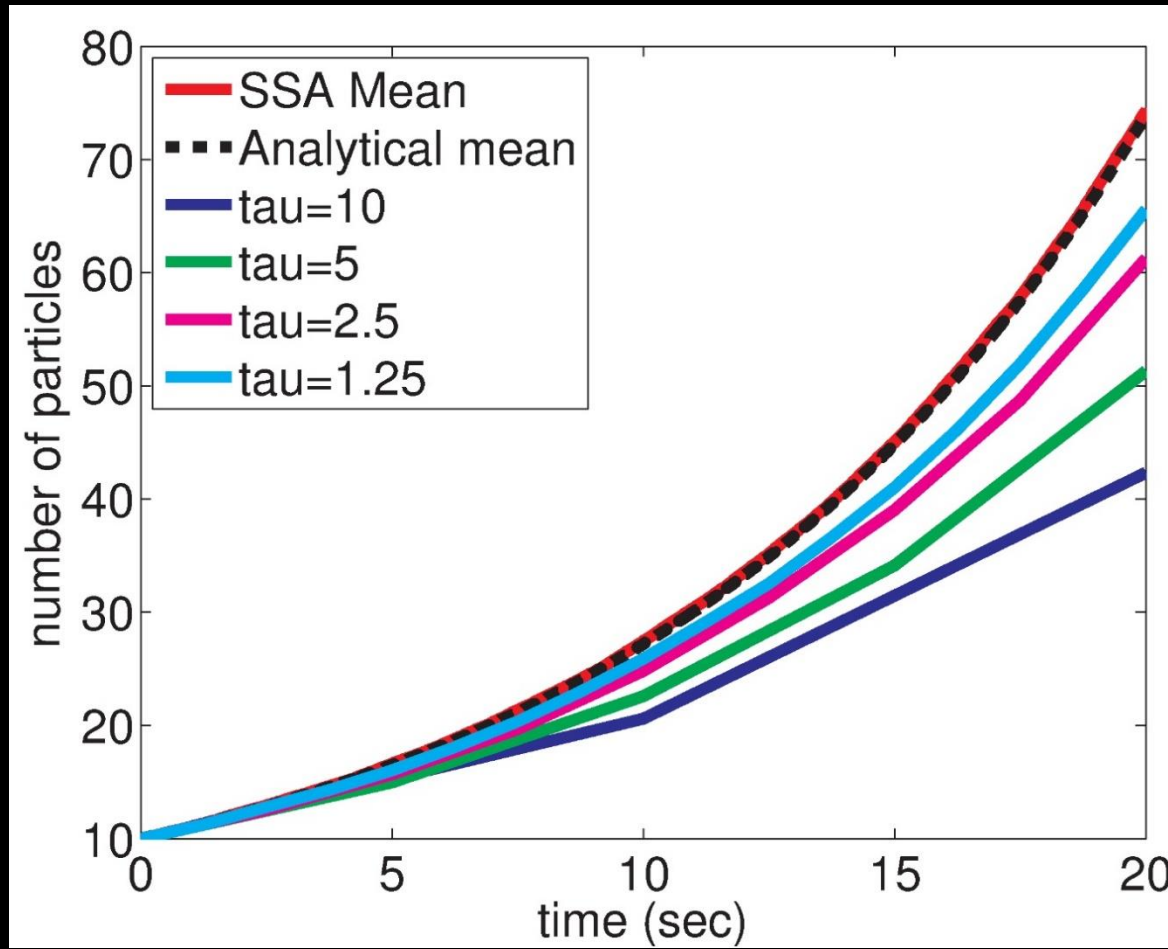
**Come on people,
this is what we trained for.**



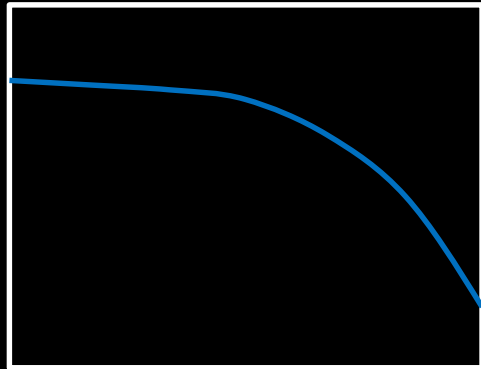
Mathematical Biologists - This is your time

Research in the Yates group

Stochastic simulation algorithms (with applications to solar cells)

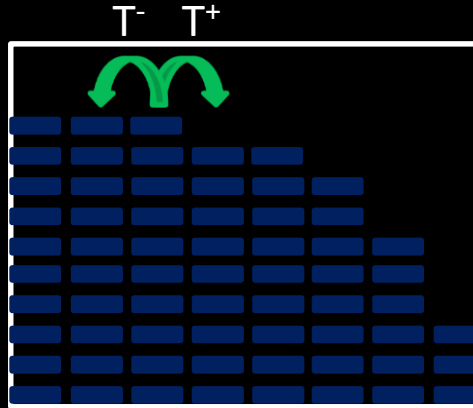


Hybrid Stochastic simulation



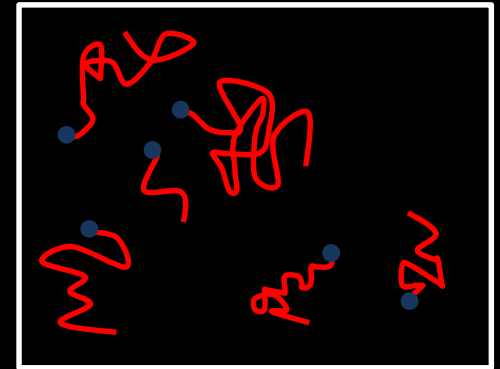
Partial differential equations

Ω_P



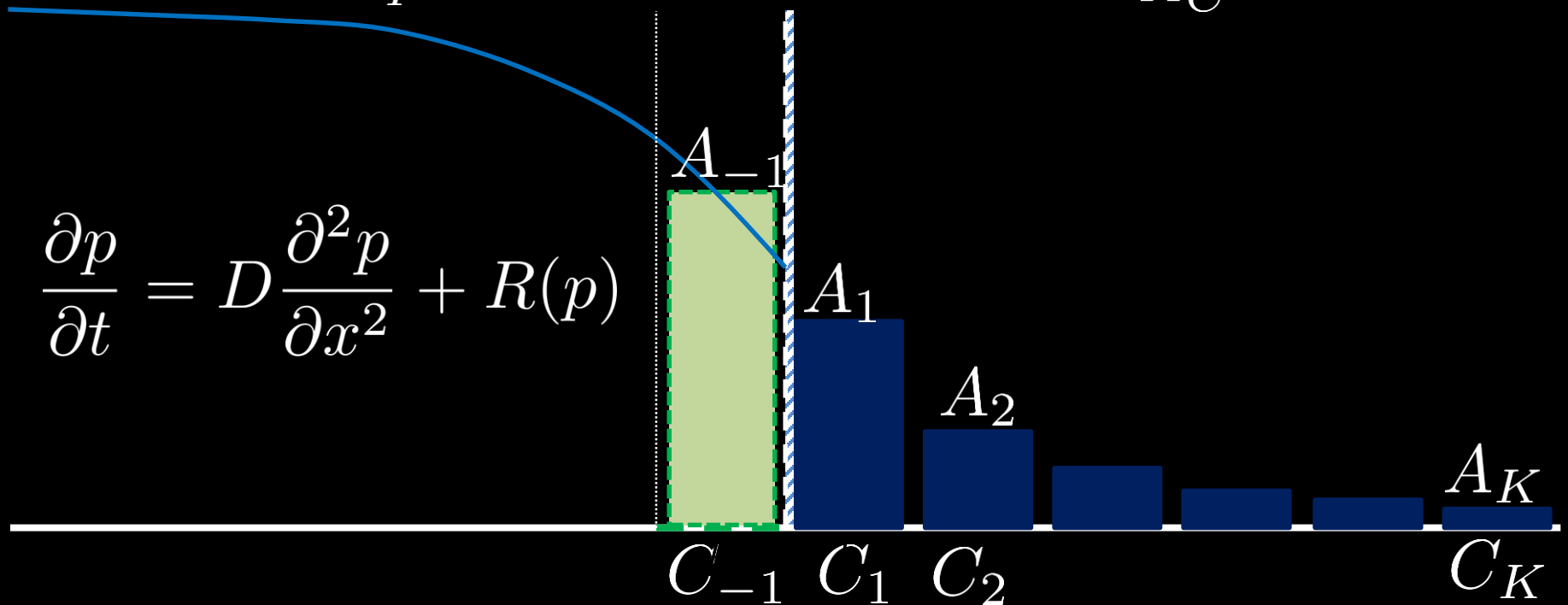
On-lattice position-jump (PJ) processes

$I = 0$

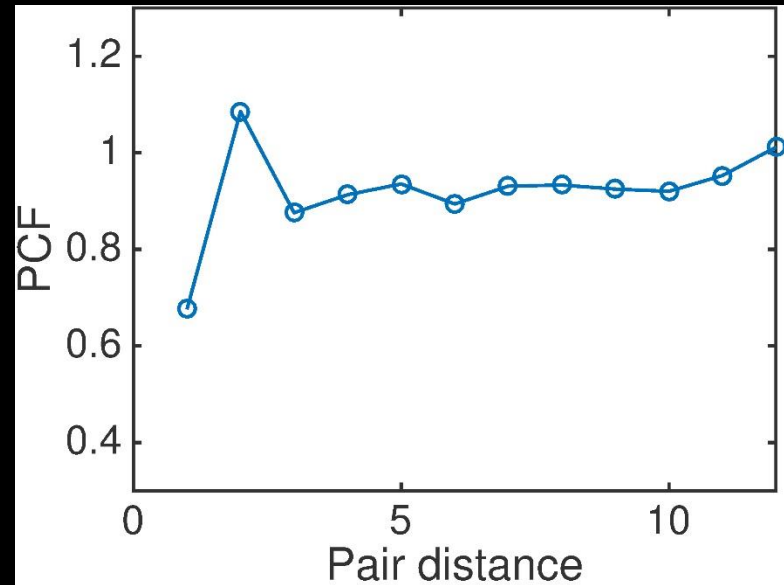
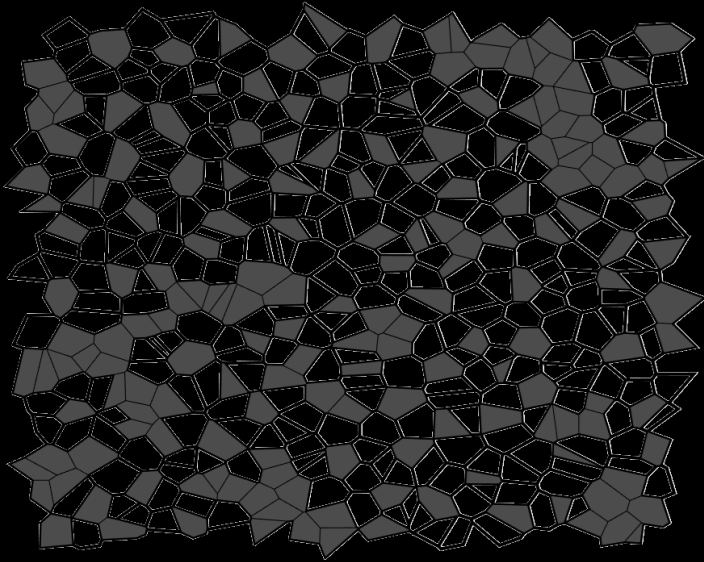
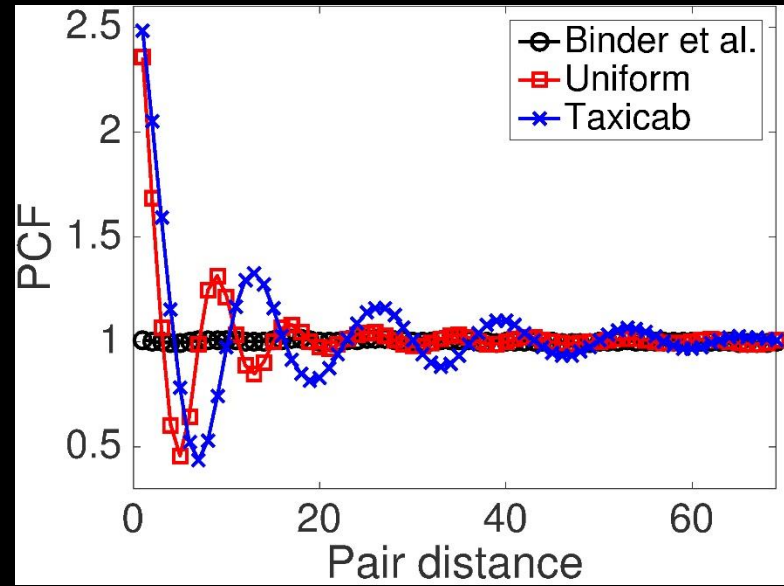
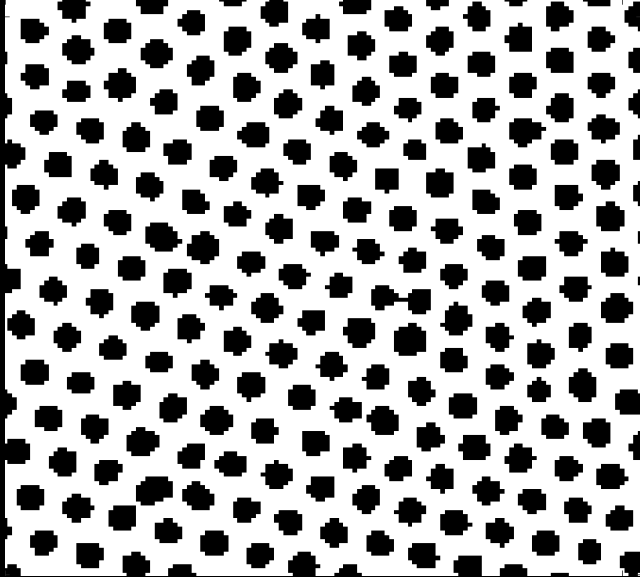


Off-lattice PJ processes

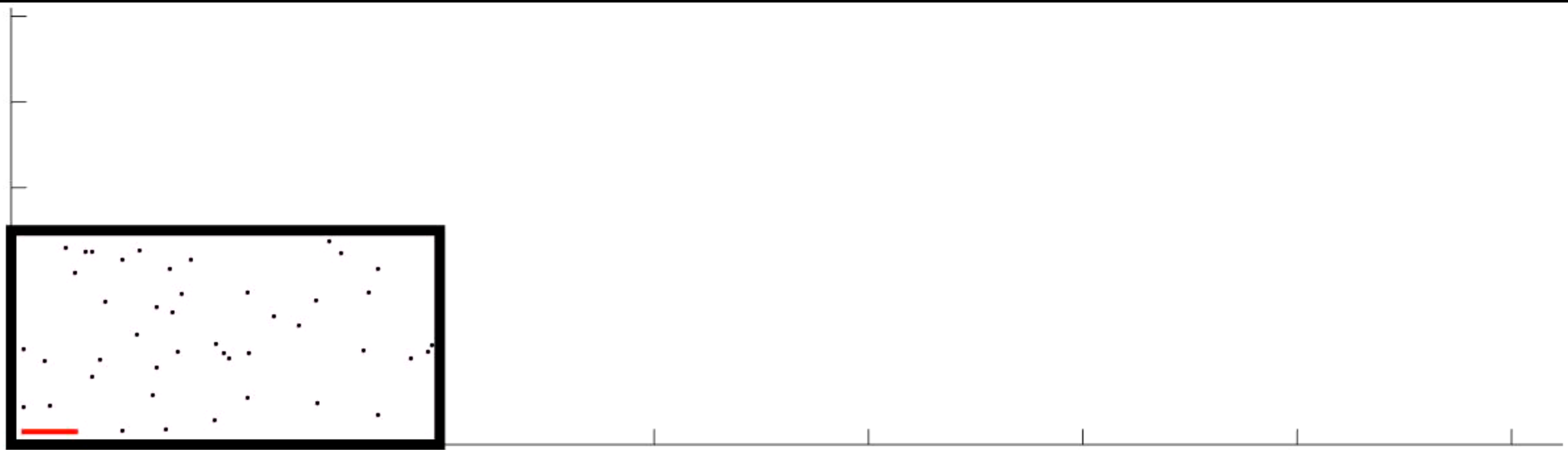
Ω_C



Quantifying patterning



Zebrafish pigment pattern formation



Mammalian pigmentation defects



From Fleischman et al. *Proc. Natl. Acad. Sci. USA.* (1991) 88(23)



0 hrs



Cats Coverage

The

Scientists unravel the mystery of the “Hitler – cat”

07/01/16 om 10:31 - Bijgewerkt om 10:30

Wetenschappers hebben de oorzaak van de grote witte vlekken op de buik en kop van katten, honden en andere dieren ontrafeld. De ontdekking leidt mogelijk tot medische doorbraken voor ziektes bij de mens.

351 KEER GEDEELD



© /

Sommige onfortuinlijke katten die lijden aan het 'witte vlekken'-syndroom worden op sociale media wel eens 'Hitler-katten' of 'kitlers' genoemd vanwege de ongelukkig gepositioneerde grote witte vlekken op hun vacht.

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Wednesday 6 January 2016



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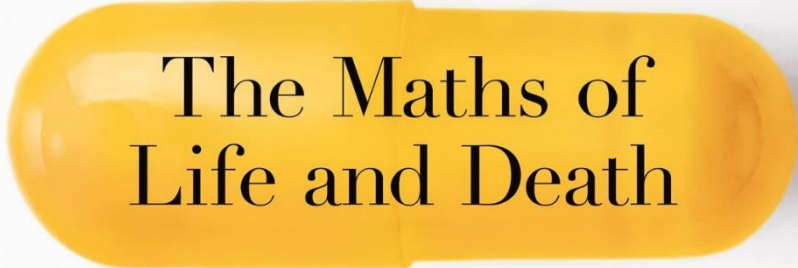

A SUNDAYTIMES SCIENCE BOOK OF THE YEAR

'Exquisitely interesting and delightfully readable'

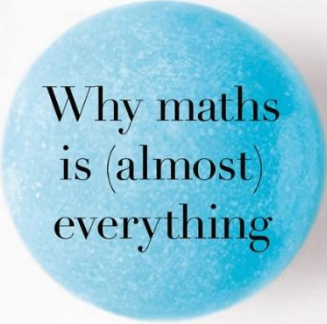
IAN McEWAN



Kit Yates



The Maths of
Life and Death



Why maths
is (almost)
everything

'An exciting new voice in the world of science communication'

MARCUS DU SAUTOY