

GCRF-EPSRC UK-APASI Programme
UK-Africa Postgraduate Study Institute in Mathematical Sciences



WORKSHOP 5: 12-14 April 2021

Modelling, Analysis, Numerical Methods and Applications of PDEs and SPDEs

Monday 12th April 2021

09:30 – 09:45 **Joining**

09:45 – 09:55 **Welcome**

10:00 – 10:55 **Lecture 1:** Philip K. Maini

10:55 – 11:00 **Break**

11:00 – 11:55 **Lecture 2:** Philip K. Maini

12:00 – 13:00 **Lunch**

13:00 – 13:45 **Lecture 3:** Nikolaos Sfakianakis

13:55 – 14:00 **Break**

14:00 – 14:45 **Lecture 4:** Chandrasekhar Venkataraman

14:55 – 15:00 **Break**

15:00 – 15:45 **Plenary Lecture:** Prof. Leah Edelstein-Keshet

15:45 – 16:15 **Panel Discussion**

16:15 – 16:30 **Breakout Rooms**

16:30 **End of Day 1**

Workshop login

Madzvamuse, A. Holligan, Liam

Turing models and the link to patterning in developmental biology: Part I

Turing models and the link to patterning in developmental biology: Part II

The Mathematics of Crop Science: a brief overview of models and methods

Numerical methods for surface PDEs: Part I

Models for cell migration: from complex to simple and back again

Panellists: Maini, Sfakianakis, Venkataraman, Edelstein-Keshet

Informal discussions and networking

Tuesday 13th April 2021

09:45 – 09:55 **Welcome**

10:00 – 10:45 **Lecture 5:** Chandrasekhar Venkataraman

10:55 – 11:00 **Break**

11:00 – 11:45 **Lecture 6:** Dumitru Trucu

11:55 – 13:00 **Lunch**

13:00 – 13:45 **Lecture 7:** Dumitru Trucu

13:55 – 14:00 **Break**

14:00 – 14:45 **Lecture 8:** Dumitru Trucu

14:55 – 15:00 **Break**

15:00 – 15:45 **Lecture 9:** Sandile Motsa

15:55 – 16:00 **Break**

16:00 – 16:15 **Panel Discussion**

16:15 – 16:30 **Breakout Rooms**

16:30 **End of Day 2**

Workshop login

Numerical methods for surface PDEs: Part II

Spatio-Temporal-Structural Dynamics in Cancer Invasion

Multiscale Moving Boundary Modelling of Cancer Invasion within Fibrous Environments: Part I

Multiscale Moving Boundary Modelling of Cancer Invasion within Fibrous Environments: Part II

Block hybrid methods for solving systems of PDEs

Panellists: Trucu, Motsa, Venkataraman

Informal discussions and networking

Wednesday 14th April 2021

09:45 – 09:55 Welcome	Workshop login
10:00 – 10:55 Lecture 10: Philip K. Maini	<i>PDE models in cancer (travelling waves)</i>
10:55 – 11:00 Break	
11:00 – 11:45 Lecture 11: Fred Vermolen	<i>Finite element method for PDEs: Part I</i>
11:55 – 13:00 Lunch	
13:00 – 13:45 Lecture 12: Fred Vermolen	<i>Finite element method for PDEs: Part II</i>
13:55 – 14:00 Break	
14:00 – 14:45 Lecture 13: Anotida Madzvamuse	<i>Introduction to bulk-surface reaction-diffusion systems</i>
14:55 – 15:00 Break	
15:00 – 15:45 Lecture 14: Anotida Madzvamuse	<i>Time-stepping schemes for RDEs</i>
15:55 – 16:00 Break	
16:00 – 16:15 Panel Discussions	Panellists: Maini, Vermolen, Madzvamuse
16:15 – 16:30 Breakout Rooms	Informal discussions and networking
16:30 End of Workshop 5	