

Program of the
School & Research Workshop

Mathematical Modeling of Self-Organizations in Medicine, Biology and Ecology: from micro to macro

Giardini Naxos, Messina, 18-21 September 2017



SPONSORS





SCHOOL SESSIONS OVERVIEW

	Sunday 17 September	Monday 18 September	Tuesday 19 September
8:00 – 9:00		Registration	
9:00 – 9:15		Opening ceremony	
9:15 – 10:00		lecture KS “A”	lecture KS “D”
10:00 – 10:45		lecture KS “B”	lecture KS “A”
10:45 – 11:15		<i>coffee break</i>	<i>coffee break</i>
11:15 – 12:00		lecture KS “C”	lecture KS “B”
12:00 – 12:45		lecture KS “D”	lecture KS “C”
12:45 – 13:30		lecture KS “A”	lecture KS “D”
13:30 – 15:30		<i>lunch</i>	<i>lunch</i>
15:30 – 16:15		lecture KS “B”	<i>free time</i>
16:15 – 17:00		lecture KS “C”	
19:00 – 20:00		Registration	
20:30	<i>dinner</i>	<i>dinner</i>	<i>social dinner</i>

<i>Keynote Speakers</i>	
“A” = Stephen Coombes	“B” = Miroslaw Lachowicz
“C” = Jonathan Potts	“D” = Luigi Preziosi



WORKSHOP SESSIONS OVERVIEW

	Wednesday 20 September	Thursday 21 September
9:00 – 11:00	Oral Session I	Oral Session IV
11:00 – 11:30	<i>coffee break</i>	<i>coffee break</i>
11:30 – 13:10	Oral Session II	Oral Session V & closing ceremony
13:10 – 15:30	<i>lunch</i>	<i>lunch</i>
15:30 – 17:10	Oral Session III	
20:30	<i>dinner</i>	



School & Workshop SCHEDULE

Sunday 17 September

19:00 - 20:00 --- Registration ---

Monday 18 September

08:00 - 09:00 --- Registration ---

09:00 - 09:15 --- Opening ceremony ---

09:15 - 10:00 **Stephen Coombes**

Dynamics of neural networks (lecture I)

10:00 - 10:45 **Mirosław Lachowicz**

Modeling swarms: from micro to macro (lecture I)

10:45 - 11:15 --- Coffee break ---

11:15 - 12:00 **Jonathan Potts**

The emergence of spatial segregation patterns from animal movements and interactions (lecture I)

12:00 - 12:45 **Luigi Preziosi**

Modelling cell migration (lecture I)

12:45 - 13:30 **Stephen Coombes**

Dynamics of neural networks (lecture II)

13:30 - 15:30 --- Lunch ---



*Mathematical Modeling of Self-Organizations in Medicine, Biology and Ecology:
from micro to macro (M.M.SE.OR.2017)*

- 15:30 - 16:15 **Miroslaw Lachowicz**
Modeling swarms: from micro to macro (lecture II)
- 16:15 - 17:00 **Jonathan Potts**
The emergence of spatial segregation patterns from animal movements and interactions (lecture II)

Tuesday 19 September

- 09:15 - 10:00 **Luigi Preziosi**
Modelling cell migration (lecture II)
- 10:00 - 10:45 **Stephen Coombes**
Dynamics of neural networks (lecture III)
- 10:45 - 11:15 --- Coffee break ---
- 11:15 - 12:00 **Miroslaw Lachowicz**
Modeling swarms: from micro to macro (lecture III)
- 12:00 - 12:45 **Jonathan Potts**
The emergence of spatial segregation patterns from animal movements and interactions (lecture III)
- 12:45 - 13:30 **Luigi Preziosi**
Modelling cell migration (lecture III)
- 13:10 - 15:30 --- Lunch ---
- 15:30 - 20:30 --- Free time ---
- 20:30 --- Social dinner ---



Wednesday 20 September

Chairman:

Luigi Preziosi

09:00 - 09:30

Maria Carmela Lombardo

Chemotactic models of plaque formation and remyelination in Multiple Sclerosis

09:30 - 10:00

Bruno Buonomo

Seasonality in vaccination models with public intervention

10:00 - 10:20

Antonella Lupica

A SEIR mathematical model of vector-borne disease epidemics and its simulation

10:20 - 10:40

Gaetana Gambino

Oscillatory patterns in reaction diffusion systems with cross-diffusion

10:40 - 11:00

Licia Romagnoli

Analysis of solutions for a cerebrospinal fluid model

11:00 - 11:30

--- Coffee break ---

Chairman:

Marco Sammartino

11:30 - 12:00

Franco Cardin

Optimal transport in living systems: physiological network and Kleiber law

12:00 - 12:30

Deborah Lacitignola

Morphogenesis in metal growth by electrodeposition

12:30 - 12:50

Gianfranco Rubino

Oscillating localized solutions and homoclinic snaking in the FitzHugh-Nagumo model

12:50 - 13:10

Marta Zoppello

Design and steering of a magneto-elastic micro-swimmer inspired by the motility of sperm cells

13:10 - 15:30

--- Lunch ---



Wednesday 20 September

Chairman:

Giuseppe Mulone

15:30 - 15:50

Paolo Falsaperla

Patterns in "dirt" melting snow

15:50 - 16:10

Luigi Frunzo

Modeling sorption of trace-elements in multispecies biofilms

16:10 - 16:30

Maria Rosaria Mattei

The invasion problem in biofilm reactors: qualitative analysis and numerical applications

16:30 - 16:50

Luigi Donato

Non-coding RNAome of oxidative stressed and normal RPE cells suggests unknown regulative aspects of Retinitis pigmentosa etiopathogenesis

16:50 - 17:10

Giulia Bevilacqua

The Kirchhoff-Plateau problem with elastic moving loop



Thursday 21 September

Chairman:

Carmela Currò

09:00 - 09:30

Gianluca Vinti

Approximation problem for the diagnosis of vascular diseases

09:30 - 10:00

Francesco Oliveri

Operatorial Models in Ecology

10:00 - 10:20

Laura Angeloni

Approximation in variation for the generalized sampling series

10:20 - 10:40

Valeria Giunta

Mathematical Model of Acute inflammation and its analysis of instabilities induced by chemotaxis

10:40 - 11:00

Marina Dolfin

A quest towards the modelling of human behavior in economics and social sciences

11:00 - 11:30

--- Coffee break ---

Chairman:

Giovanna Valenti

11:30 - 11:50

Gioele Capillo

Clibanarius erythropus and Phorcus turbinatus in intertidal ponds: evaluation of predator-prey interactions

11:50 - 12:10

Antonio Cannuli

Modeling and Self-Organization dynamics of aggregation processes in acoustically levitated disaccharides solutions

12:10 - 12:30

Giuseppe Castorina

Multiscale mathematical and physical model for the study of nucleation processes in meteorology

12:30 - 12:45

--- Closing ceremony ---

13:00

--- Lunch ---