

INTRODUCING M.M.SE.OR.2017

CARMELA CURRÒ ^a AND GIOVANNA VALENTI ^{b*}
(Guest Editors)

The International Workshop *Mathematical Modeling of Self-Organizations in Medicine, Biology and Ecology: from micro to macro* (M.M.SE.OR.2017) focused on bio-mathematical modeling of a large variety of phenomena which take place at different scales: from microscopic (sub-cellular systems) to macroscopic (ecosystems).

Particular emphasis was given to the study of emergent behaviors, typically arising from the nonlinear interactions among the parts/individuals of a system, as well as to the description of self-organized structures, usually referred to as *patterns* occurring at micro or macro scale in several contexts of Life Sciences.

The aim of the meeting was to provide an opportunity to students and researchers with different backgrounds (mathematicians, biologists, physicists, computer scientists and engineers) to share their scientific results and to create tight links among theoretical models, computational tools and experimental observations.

M.M.SE.OR.2017 had the twofold character of *International School* and *Research Workshop*. During the *International School* stage, internationally-recognized speakers explained the main mathematical methods/tools necessary to characterize pattern dynamics and illustrated some key results obtained in various fields of Life Sciences. Lecturers focused on: neurosciences, cell migration, dynamics of interacting populations, biochemical processes, genetics. During the *Research Workshop* stage, both invited and contributed talks were given.

This AAPP supplementary issue, including 12 papers, collected the peer-reviewed proceedings of M.M.SE.OR.2017.

The Guest Editors would like to thank the Scientific Committee, who carefully suggested the invited lectures and selected the contributed papers, as well as the Organizing Committee.

A special thank is addressed to all the participants whose contributions made the success of the meeting possible and to Prof. Paolo V. Giaquinta, chairman of the Editorial Board of AAPP | Physical, Mathematical, and Natural Sciences, for his support and collaboration in the publication of this special issue.

Chair

- Giancarlo Consolo, Università degli Studi di Messina

Scientific Committee

- Carmela Currò, Università degli Studi di Messina
- Giuseppe Mulone, Università degli Studi di Catania
- Luigi Preziosi, Università degli Studi di Torino
- Marco Sammartino, Università degli Studi di Palermo
- Giovanna Valenti, Università degli Studi di Messina

Local Organizing Committee

- Giancarlo Consolo, Università degli Studi di Messina
- Giuseppina D'Agù, Università degli Studi di Messina
- Marina Dolfin, Università degli Studi di Messina
- Gaetana Gambino, Università degli Studi di Palermo
- Natale Manganaro, Università degli Studi di Messina
- Nunziacarla Spanò, Università degli Studi di Messina
- Giovanna Valenti, Università degli Studi di Messina

Supporting Institutions

- Accademia Peloritana dei Pericolanti
- Università degli Studi di Messina
- Università degli Studi di Palermo
- Dipartimento di Scienze Matematiche e Informatiche, Scienze Fisiche e Scienze della Terra (M.I.F.T.), Università degli Studi di Messina
- Dipartimento di Scienze Chimiche, Biologiche, Farmaceutiche ed Ambientali (CHI.BIO.FAR.AM), Università degli Studi di Messina
- National Group of Mathematical Physics (GNFM-INdAM)
- National Group of Mathematical Analysis, Probability and their Applications (GNAMPA-INdAM)

-
- ^a Università degli Studi di Messina
Dipartimento di Scienze Matematiche e Informatiche, Scienze Fisiche e Scienze della Terra
V.le F. Stagno D'Alcontres 31, 98166 Messina, Italy
- ^b Università degli Studi di Messina
Dipartimento di Ingegneria
C.da di Dio, 98166 Messina, Italy
- * To whom correspondence should be addressed | email: gvalenti@unime.it

Paper contributed to the workshop entitled "Mathematical modeling of self-organizations in medicine, biology and ecology: from micro to macro", which was held at Giardini Naxos, Messina, Italy (18–21 September 2017)
under the patronage of the *Accademia Peloritana dei Pericolanti*

Manuscript published online 30 November 2018



© 2018 by the author(s); licensee *Accademia Peloritana dei Pericolanti* (Messina, Italy). This article is an open access article distributed under the terms and conditions of the [Creative Commons Attribution 4.0 International License](https://creativecommons.org/licenses/by/4.0/) (<https://creativecommons.org/licenses/by/4.0/>).