



# ECMTB 2018

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## LISBON

# 11th European Conference on Mathematical and Theoretical Biology

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Biomathematics is a fast growing subject in Europe and to celebrate the importance of applications of mathematics to biology and life sciences, the Year of Mathematical Biology 2018 (YMB) was declared, a joint initiative of the European Mathematical Society (EMS) and the European Society for Mathematical and Theoretical Biology (ESMTB). With many events organized, including thematic programs and conferences and workshops, the 11<sup>th</sup> European Conference on Mathematical and Theoretical Biology (ECMTB 2018) (<http://www.ecmtb2018.org>) was the main event of the YMB.

Traditionally organized by the ESMTB, the ECMTB 2018 was this time (and for the first time) also organized by the EMS, having the Portuguese Mathematical Society (SPM) as co-organizer. The conference venue was the Faculty of Sciences of the University of Lisbon, in Portugal (FCUL), hosted by its research centre, Centro de Matemática, Aplicações Fundamentais e Investigação Operacional (CMAFçIO—Centre for Mathematics, Fundamental Applications and Operational Research). The ECMTB 2018 had the patronage of His Excellency the President of the Republic of Portugal and was granted the UNESCO seal by the National UNESCO Committee. Besides the sponsorship of the three organizing societies, it has been sponsored by several Portuguese research centres (CMAFçIO, CMA, CIMA, CEAUL) and the Portuguese Foun-

ation for Science and Technology (FCT), Instituto Gulbenkian de Ciência, international publishers (Springer, MDPI, PLOS One, Elsevier, EMS-PH, IOP Publishing, Oxford University Press, Wiley), the Bernoulli Society, the Portuguese Statistical Society, the Centro Internacional de Matemática and other organizations and companies.

From July 23 (July 22 for those attending the early registration and cocktail welcoming party) to July 27, the city of Lisbon (Portugal) welcomed the more than seven hundred participants from 80 countries with a pleasant weather (it was cooler than the usual hot weather typical of this time of the year, a blessing for participants from Central and Northern Europe coming from unusually high temperatures in their home countries). The record number of participants (only beaten by joint ESMTB- SMB Conferences) is a sure sign of the growing importance of Mathematical Biology.

After the opening ceremony, there was a Tribute to Karl Peter Haderl by Odo Diekmann, immediately followed by the opening plenary conference, a Bernoulli Society-European Mathematical Society Joint Lecture, by Samuel Kou (Harvard University, USA), on the exciting topic of *Big data, Google and disease detection: A statistical adventure*. The other plenary conferences were on equally exciting topics and were given by the eminent scientists Helen Byrne (Oxford University, UK, *Mathematical approaches to modelling*

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and remodelling biological tissues), Antonio DeSimone (SISSA, Italy, *Biological and bio-inspired motility at microscopic scales: locomotion by shape control*), Eva Kisdi (University of Helsinki, Finland, *Adaptive dynamics and the evolution of diversity*), Mirjam Kretzschmar (University Medical Centre Utrecht, The Netherlands, *Modelling the waning and boosting of immunity*), Eva Löcherbach (Cergy-Pontoise University, France, *Modeling interacting networks of neurons as processes with variable length*), Andrea Pugliese (University of Trento, Italy, *Epidemic models structured by parasite load and immune level*), Eörs Szathmáry (Eötvös Loránd University, Hungary, *Models of learning and evolution: what do they have in common?*) and Kees Weijer (University of Dundee, UK, *Analysis of collective cell behaviours underlying primitive streak formation in the chick embryo*). One of the recent winners of the Reinhart Heinrich Best Ph. D. Thesis Award, Jochen Kursawe, was able to come and give the traditional winner talk on *Quantitative approaches to investigating epithelial morphogenesis*.

ECMTB 2018 had also a very rich programme of 36 cutting-edge Mini-symposia, 60 Contributed Talk parallel sessions and 2 Poster sessions (in a nice get together coffee+cocktail break), totalling 455 oral communications and 119 posters covering all areas of Mathematical and Theoretical Biology. There were 4 poster prizes given by a jury and sponsored by publishers (Elsevier, MDPI, Springer). The reader can take a look at the Programme ([http://www.ecmtb2018.org/files/files/ecmtb\\_booklet\\_a4.pdf](http://www.ecmtb2018.org/files/files/ecmtb_booklet_a4.pdf) or the short version <http://www.ecmtb2018.org/ActMap>) and the Book of Abstracts with ISBN: [http://www.ecmtb2018.org/files/files/BookOfAbstracts\\_ECMTB2018\\_inclusions.pdf](http://www.ecmtb2018.org/files/files/BookOfAbstracts_ECMTB2018_inclusions.pdf)

Moreover, the ECMTB Mentorship Programme was set up to facilitate research and career interactions between junior and

more senior scientists attending the meeting.

The General Assembly of the ESMTB took place on July 26 and it was opened to members and non-members of the Society. Several issues concerning the working of the ESMTB and the development of Mathematical and Theoretical Biology were discussed, followed by further discussions over a wine tasting event.

The social programme provided ample opportunities for scientific exchange and personal contacts. Besides the already mentioned social activities and the coffee and the lunch breaks, there were excursions and a conference dinner that started with a Tuna (which is a not a fish, but a typical Portuguese University playing and singing student group) and was followed by dancing.

The ESMTB, to celebrate the Year of Mathematical Biology 2018 and wishing to extend its membership to other researchers in the area, invited every participant registered for the ECMTB 2018, that was not yet an ESMTB member, to become a member. The Society welcomes those accepting such invitation by exempting them of the first year membership fee. Note that the invitation is still standing (see detailed information on <http://dev.ecmtb2018.org/RegRules>).

On behalf of the Organizing Committee, we thank the organizing societies for their trust, the Scientific Committee, the sponsors, the plenary speakers, the organizers of the Mini-symposia, the session chairs, the mentors and mentees, the jury of the poster prizes, the student helpers and the hard-working and skilful members of the Secretariat (Ana Rita Ferrer, Ana Isabel Figueiredo, Joana Guia). We are especially grateful to all the participants, for whom this Conference was organized, for having made it a memorable event and a landmark in the growing path of Mathematical and Theoretical Biology.