PREFACE

This special issue of RMJM constitutes a major part of the Proceedings of the 4th International Conference on Mathematical Biology (ICMB-4) which was held in the breathtakingly beautiful city of Wuyishan, Fujian Province, China, May 29–June 1, 2007 (`http://icmb.mnkjxy.com/`). All papers were carefully refereed and selected based on mathematical originality and biological relevance of the presented research contribution.

The conference was organized by the Chinese Society for Mathematical Biology, the Committee of Mathematical Ecology with the Chinese Society for Ecology and was hosted by Minnan Science and Technology Institute and the School of Mathematics and Computer Science of Fujian Normal University. More than 400 researchers in mathematical and computational biology from around the globe participated in the conference. The conference was not only a major event in showcasing the remarkable growth of mathematical biosciences in China, but also a much needed gathering for mathematical and computational biology researchers around the world to develop international interactions and collaborations.

The Scientific Committee is co-chaired by Lansun Chen (China), Simon Levin (USA) and Yang Kuang (USA). Members include 39 international leading researchers in mathematical biosciences. The Organizing Committee consists of 31 members, is advised by Honda Dai and Lanshun Chen, and co-chaired by Zhenglu Wang and Wending Wang.

The conference program consisted of plenary, invited, and contributed talks in a wide range of topics in mathematical biosciences. The plenary speakers were Yoh Iwasa (Kyushu University, Japan), Yang Kuang (Arizona State University, USA), Philip Maini (University of Oxford, UK), Shigui Ruan (The University of Miami, USA), Karl Sigmund (University of Vienna, Austria), Hal Smith (Arizona State University, USA), Jianhong Wu (York University, Canada) and Xiaoqiang Zhao (Memorial University of Newfoundland, Canada).

The range of subjects presented at the conference spanned major current issues of mathematical and computational biology and included the following: ecology, evolution, population dynamics, genetics, bioinformatics, molecular biology, physiology, epidemics, bioeconomics, public health, and medicine.

Biological topics included among the papers selected for publication are as follows: predator-prey interactions, vaccination strategies, competition interactions, species coexistence, resource management strategies, microbial continuous fermentation, transport-related disease spread, pattern formation, eradication of measles, co-infection of diseases, biological pest control, chemostat models, neural networks, dynamics of TB, avian influenza, HIV and HBV infections, harvesting and HBV infection treatment.

Mathematical topics included among the papers selected are as follows: ordinary differential equations, partial differential equations, difference equations, impulsive differential equations, delay differential equations, stochastic models, probability distribution models, diffusive systems, chaos theory, catastrophe theory, optimal control theory, optimization algorithm and dynamical systems theory in the context of population dynamics.

The timely and quality publication of a proceedings of such a large international conference demands the well-concerted efforts of many devoted individuals. First and foremost, we thank the participants and the organizers for making the ICMB-4 a great, productive and memorable event. We are grateful to the proceedings authors for allowing us to publish their fine manuscripts. We are especially indebted to the following leading researchers: Jingan Cui, Hongbin Guo, Zhen Jin, Zhenqing Li, Zhiqui Lin, Shengqiang Liu, Zhengyi Lu, Wanbiao Ma, Xinyu Song, Sanyi Tang, Zhidong Teng, Jiafeng Wang, Wendi Wang, Venkata Duvvuri, Yanni Xiao, Rui Xu and Yichang Zhou, who helped us in carefully refereeing the submitted manuscripts in a timely fashion. Last but not the least, we would like to thank the executives of RMJM, John Quigg and Tom Sherman, for their enthusiastic support of publishing this proceedings in RMJM and their tireless efforts to ensure this proceedings' prompt appearance. We hope this proceedings will be a valuable and lasting contribution to the literature and future progress of mathematical and computational biology research.

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