Preface

In June 2010, the workshop "Mathematical models and numerical methods in biomathematics" was held in the Institute of numerical mathematics, Russian Academy of Sciences, in Moscow. The workshop aimed to initiate the working group on this topic and to discuss recent advances in numerical methods and simulations in hemodynamics, immunology, biomechanics, biochemistry. Lectures given at the workshop discussed the mathematical theory and numerical properties of the methods as well as computational challenges arising in applications, http://dodo.inm.ras.ru/biomath/engl/workgroup.html

The special issue "Mathematical modeling in biomedical applications" of the journal Mathematical Modelling of Natural Phenomena extends the discussion started at the workshop. A carefully selected collection of papers represents a wide scope of the modern ideas and challenges in the numerical world of biomathematics. This thematic issue can be interesting for researchers in mathematics, biophysics, computer science and engineering.

The participants of the workshop decided to initiate the series of regular workshops. The second workshop "Mathematical models and numerical methods in biomathematics" was held in January 2011 also in the INM RAS. Proceedings of the second workshop will be published in the special issue of Russian Journal of Numerical Analysis and Mathematical Modelling.

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