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Takashi Suzuki
Clair Poignard
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Methods of Mathematical Oncology

Fusion of Mathematics and Biology, Osaka, Japan, October 26–28, 2020

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Editors

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Preface

Following recent developments in computational biology, a research project entitled "Establishing International Research Networks of Mathematical Oncology" has been carried out for five years and nine months since April 2015 as a part of the Core-to-Core Program of the Japan Society for the Promotion of Science (JSPS). This project has established a permanent and collaborative network, to foster research leaders in mathematical oncology and to strive to build an international research base.

In this project, the Center for Mathematical Modeling and Data Science (MMDS) at Osaka University (Professor Takashi Suzuki, representative researcher) has engaged in collaborative research with the following prestigious organizations: INRIA Research Center of Bordeaux-Sud-Ouest in France (Professor Clair Poignard, representative coordinator); University of St. Andrews in the UK (Professor Mark Chaplain, representative coordinator); and Vanderbilt University in the USA (Professor Vito Quaranta, representative coordinator). The Program has also been supported by the following renowned institutions in Japan: The Institute of Medical Science, The University of Tokyo, and Kanagawa Cancer Center Research Institute. By utilizing their respective strength and realizing the fusion of life science and mathematical science, the base organization has achieved the cooperation of "mathematical analysis," "verification by biomedical experiments," and "statistical analysis of a chemical database."

As the core event for the final year of the project, the international symposium entitled "Fusion of Mathematics and Biology" and organized by Professor Takashi Suzuki at MMDS was held during October 26–28, 2020, at Osaka University in Japan to provide valuable opportunities for researchers to share their innovative ideas with eminent speakers. The international symposium was originally scheduled to take place in March 2020, but it was postponed due to the worldwide outbreak of COVID-19.

All sessions were basically delivered live through the Zoom webinar. Furthermore, we set up a hybrid conference platform combined with a real venue and online meetings. Speakers from eight countries led 20 sessions and provided 62 talks. The total number of session chairs and speakers was 82, and they attended as

panelists. In addition, 91 participants registered as an audience through the JSPS 2020 website. The number of participants by Zoom was continuously 50–70. Despite the differences in time zones of the participants, there was an enthusiastic exchange of questions, comments, and discussions.

This book consists of original manuscripts offered by speakers who have contributed to the symposium and researchers who are dedicated to mathematical oncology and mathematical biology, among other topics. In addition to the proceedings of the international symposium, this book includes an attractive review of the latest in mathematical science.

Individual contributions were all reviewed by authoritative, credible researchers in the field. We hope that this contribution is valuable and useful for a wide range of researchers and scientists.

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March 2021 Takashi Suzuki

Organization

List of Participants

International Symposium "Fusion of Mathematics and Biology"
October 26–28, 2020, Osaka Japan (Online Meeting)

Organizer

Takashi Suzuki	Osaka University

Session Chairs

Mark Chaplain	University of St Andrews, UK
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Fuminori Tokunaga	Osaka City University, Japan
Tetsuo Yasugi	Kanazawa University, Japan

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