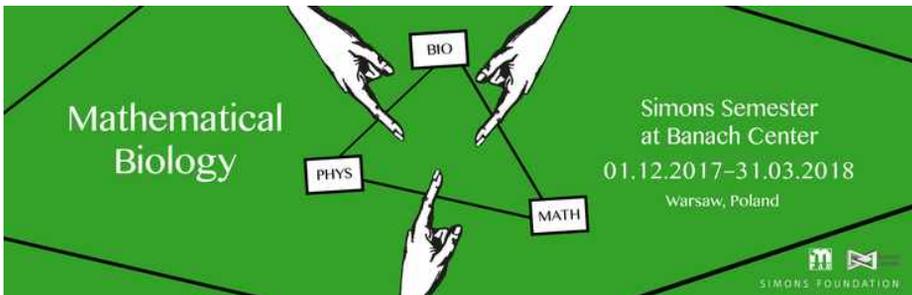


Simons Semester at Banach Center

1.12.2017-31.03.2018, Warsaw, Poland



The Banach Center of the Institute of Mathematics of Polish Academy of Sciences (IMPAN) hosted (from 01.12.2017 to 31.03.2018) [Semester on Mathematical Biology](#), organized by Odo Diekmann (Utrecht University), Piotr Gwiazda (IMPAN), Jacek Miękiisz (IMPAN and MIM UW), Benoît Perthame (Sorbonne Université, Paris), Joanna Renclawowicz (IMPAN), Ryszard Rudnicki (IMPAN)

It was one of many semesters which are organized at the Banach Center within the framework of a 5-year research and training program in IMPAN, financed by the grant received from the Simons Foundation. The general goal of the Simons Semester on Mathematical Biology was to attract young people to a broadly defined mathematical biology and to foster international interdisciplinary collaborations between mathematicians, physicists, and biologists. We brought to Warsaw, as Simons professors, top mathematicians and theoretical physicists working in qualitative biology who presented state-of-art in their fields, and PhD students to work in the frontier of science under the supervision of Simons mentors. Main topics of the semester included structured population models, information transmission in biological systems, infectious diseases, and chemotaxis. The BioPhysMath kickoff meeting of the semester was held in Warsaw in December 2017 and it was sort of a prelude to 2018 Year in Mathematical Biology. One day of the meeting was devoted to lectures given by the members of the Board of the European Society for Mathematical and Theoretical Biology (the board of ESMTB had its meeting in Warsaw on December 8). In remaining two days of the workshop we

had review talks given by some Simons Semester professors and other lecturers presenting main themes of the semester. The title of this workshop, BioPhysMath, indicates the interdisciplinary character of the workshop and the semester (it was a special edition of two-day BioPhysMath workshops organized twice a year at the Banach Center in Warsaw by Jacek Miękisz and Ryszard Rudnicki. It was followed by a two-month intensive course Stochastic processes and inference in biology given by physicists Thierry Mora and Aleksandra Walczak from École Normale Supérieure, Paris. Several students listen to lectures, worked in groups on projects, presented their results, and then submitted a report. Then there followed technical workshops concentrated on specific models of mathematical biology: Transport phenomena in mathematical biology, Infectious disease epidemiology: from theoretical models to inference, Mathematical aspects of chemotaxis, cross-diffusion effects and concentration phenomena. The semester ended with two schools organized in Banach Center in Będlewo: Information transmission in biological systems and From individuals based models to structured population level description. Participants of both schools consisted of roughly 15 lecturers and 30 students (bachelor, master, PhD students, and post-docs). Some of them are now working on projects proposed by lecturers. This might be a beginning of future long-term collaborations.

The semester has ended but we hope that it will result in many fruitful collaborations, new insights into old problems, new directions of research, and many new ideas and results in mathematical and quantitative biology.

JACEK MIĘKISZ
POLISH ACCADEMY OF SCIENCE
INSTITUTE OF MATHEMATICS
ŚNIADECKICH 8, 00-656 WARSAW, POLAND

AND

UNIVERSITY OF WARSAW
INSTITUTE OF APPLIED MATHEMATICS AND MECHANICS
FACULTY OF MATHEMATICS, INFORMATICS, AND MECHANICS
BANACHA 2, 02-097 WARSAW, POLAND
E-mail: miekisz@mimuw.edu.pl
URL: <http://www.mimuw.edu.pl/~miekisz>

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