Programme for the workshop Future Trends in Mathematical Biology: In vitro, in vivo, and in silico


Venue: Department of Applied Mathematics and Computer Science (DTU Compute), Technical University of Denmark (DTU), Kongens Lyngby, Denmark

Workshop place: Building 324, room 240 (lunchroom).

Programme for Wednesday, November 22, 2017.

Chairman: Michael Pedersen

09:00 – 09:15 Welcome
Michael Pedersen, Section for Scientific Computing, DTU Compute

09:15 – 10:00 Mathematical modelling of life science problems
Messoud Efendiyev
Institute of Computational Biology, Helmholtz Zentrum Munich, Germany

10:00 – 10:30 System and Control Technologies for an Artificial Pancreas
John Bagterp Jørgensen
Section for Scientific Computing, DTU Compute

10:30 – 10:45 Coffee break

Chairman: Mads Peter Sørensen

10:45 – 11:15 Machine learning approach for drug candidate optimization
Kristian Moss Bendtsen
Novo Nordisk, Måløv, Denmark

11:15 – 11:45 Description and Comparison of Protein 3d-Structures with emphasis on (bio)-topology
Peter Røgen
Section for Scientific Computing, DTU Compute

11:45 – 13:00 Lunch
Fighting Fires Forth and Back in Time -- Modelling and First Indicative Results
Florian Rupp
Faculty of Mathematics, Technical University of Munich, Garching, Germany

Closed-loop control applications in biomedicine: Perspectives for the treatment of epilepsy
Dimitri Boiroux
Section for Scientific Computing, DTU Compute

Coffee break

Substrate-depletion oscillators: Canards without attracting slow manifolds
Kristian Uldall Kristiansen
Section for Mathematics, DTU Compute

Numerical Simulation of growing and harvesting cells on electromechanical resonator sensors
Bolaji Adesokan
Section for Scientific Computing, DTU Compute

Chairman: Mads Peter Sørensen

09:00 – 09:45  Excitation induced shape transformations in semiflexible biopolymer rings
Yuri Gaididei
Bogolyubov Institute for Theoretical Physics, Kiev, Ukraine

09:45 – 10:15  Traveling pulse solutions in the FitzHugh-Nagumo equations
Paul Carter
Department of Mathematics, University of Arizona, Tucson AZ, USA

10:15 – 10:30  Coffee break

Chairman: Mads Peter Sørensen

10:30 – 11:00 Interdisciplinary teaching of mathematical biology
Ken Haste Andersen
National Institute of Aquatic Resources, DTU Aqua

11:00 – 11:30 Optimality and games in behavioural ecology: Vertical strategies of marine predators and prey
Uffe Høgsbro Thygesen
Section for Dynamical Systems, DTU Compute

11:30 – 13:00 Lunch

Chairman: Michael Pedersen

13:00 – 13:45 Why math matters
Johnny Ottesen
Department of Science and Environment, University of Roskilde, Denmark

13:45 – 14:15 Modelling vector distribution and abundance using environmental predictors and machine learning techniques
Lene Jung Kjær
National Veterinary Institute, DTU Vet

14:15 – 14:30 Coffee break
Chairman: Mads Peter Sørensen

14:30 – 15:00       Time and cluster effects of antibiotics on resistance genes in the pig gut
Kaare Græsbøl
National Veterinary Institute, DTU Vet

15:00 – 15:30       Speed of Evolution in Spatially Extended Populations
Erik Andreas Martens
Section for Dynamical Systems, DTU Compute

15:30 – 15:40       Closing remarks
Michael Pedersen
Section for Scientific Computing, DTU Compute