

Universität
Basel

Departement
Mathematik und Informatik

Guest session of Introduction to Applied Mathematics and Informatics In Drug Discovery (AMIDD)

November 22th, 2019, 12:15-13:00

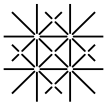
Seminarraum 5.002, Department of Mathematics and Informatics, University of Basel, Spiegelgasse 1, 4051 Basel

Mathematical modeling in academia and industry

In this talk, I will give an overview of the field of mathematical biology, and describe how mathematical approaches are used in industry to study cancer, optimize clinical trials and to analyse data. Furthermore, I will touch on how machine learning can be integrated into such approaches to enhance workflows. Throughout the talk, I will give some general examples from the field, and some specific examples of work I have done.

Speaker: Dr. Lucy Hutchinson

Lucy has been working at Roche in Basel since 2017, first as a Disease Modeler and now as a Modeling and Simulation Scientist. She specializes in mathematical and computational modeling of cancer and was recently successful in an internal Roche innovation competition for her idea on how mathematical modeling can be used to optimize biopsy schedules. Lucy obtained her PhD in Systems Approaches for Biomedical Sciences (specializing in Mathematical Biology) from Oxford University in 2017.



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Introduction to Clinical Pharmacometrics or About the Role of Mathematical Modeling and Simulation in Clinical Drug Development

Can we use mathematics to predict drug “behaviors” in humans and support clinical drug development? The answer is yes. The main reason is that human’s biological and pharmacological processes can be described and simulated using mathematical models. The development and application of those models to inform decision making in clinical drug development is called Clinical Pharmacometrics (or Modeling and Simulation) and several examples of applications will be presented.

As an introduction to this presentation, please have a look at those following short YouTube videos:

- [The benefits of using modeling and simulation in drug development](#)
- [The benefits of using Pharmacokinetic and Pharmacodynamic modeling](#)
- [The benefits of using Clinical Trial Simulation](#)

Speaker: Dr. Nicolas Frey

Nicolas Frey is Head of Clinical Pharmacometrics at F. Hoffmann-La Roche since 2007. He obtained his Doctor of Pharmacy degree from the University of Paris in 1995 with a Master of Arts specialized in Biodynamic and Biopharmacy. He has 25 years’ experience in the application of pharmacometrics to clinical drug development within the pharmaceutical industry. He joined Servier in 1996 as a pharmacokineticist. In 2003, he joined Hoffmann-La Roche as Senior Pharmacometrician being responsible for the Clinical Pharmacometric activities in the metabolism and inflammation disease areas.