

# ANTIMICROBIAL POPULATION PK/PD MODELLING AND SIMULATION:

Using the Pmetrics package for R and the BestDose® web-based tool

**Venue: Liverpool, UK  
April 14-16, 2020**

## Faculty & Tutors

- Prof Michael Neely, University of Southern California, USA
- Prof George Drusano, University of Florida, USA
- Prof William Hope, University of Liverpool, UK
- Dr Clement Boidin, Claude Bernard University, France
- Dr Claire Roger, CHU Nimes, France
- Dr Fernando Docobo-Perez, University of Sevilla, Spain
- Dr Catherine Byrne, Trinity College, Ireland
- Dr Suzanne Parker, The University of Queensland, Australia
- Prof Jason Roberts, The University of Queensland, Australia

**Please note that previous experience with R would be an advantage for participating in this workshop.**

## Course Objectives

Using the Pmetrics package for R, users will be able to:

- Define complex pharmacokinetic (PK) and pharmacokinetic/pharmacodynamic (PK/PD) structural models.
- Analyse complex PK and PK/PD datasets (including presence of immune system, biomarker response and/or emergence of bacterial resistance).
- Perform basic Monte Carlo simulations for PK and PK/PD analysis.

With the BestDose web-based software tool, users will explore:

- Perform optimal design analyses for development of PK sampling schedules
- Application of pharmacometric methods to dose individualization
- Optimise dosing for an individual patient.

A working version of Pmetrics on all attendee laptops is required. This workshop is suitable for health care practitioners involved in complex drug dosing including clinical pharmacists, infectious diseases physicians, intensive care physicians, transplant physicians and clinical pharmacologists. Also suitable for basic researchers including pharmacologists and translational scientists.

## Workshop Programme

<b>DAY 1 – Pharmacokinetic modelling</b>		
08:00-08:25	Registration	
08:25-08:30	Welcome	<b>Prof Jason Roberts</b>
08:30-09:00	What's new in Pmetrics and pharmacometrics?	<b>Prof Michael Neely</b>
09:00-09:30	Review of pre-workshop tutorial	<b>Dr Suzanne Parker</b>
09:30-10:30	Modelling drug protein binding	<b>Dr Catherine Byrne</b>
10:30-11:00	<b>Morning Tea</b>	
11:00-12:00	Modelling complex renal replacement therapy data	<b>Dr Clement Boidin</b>
12:00-12:30	Modelling extravascular non-oral drug administration	<b>Dr Clement Boidin</b>
12:30-13:30	<b>Lunch</b>	
13:30-14:15	Describing PK over the course of life (neonates to elderly)	<b>Prof Michael Neely</b>
14:15-15:00	Predicting humanised exposure of drug using animal PK data	<b>Prof William Hope</b>
15:00-15:30	<b>Afternoon Tea</b>	
15:30-17:30	Building models for your data	<b>Tutors</b>
18:30- 21:30	<b>Networking Dinner</b>	
<b>DAY 2 – Pharmacokinetic / Pharmacodynamic modelling</b>		
09:00-09:30	Pharmacodynamics (PD) principles	<b>Dr Fernando Docobo-Perez</b>
09:30-10:30	Modelling antibiotic PK/PD – monotherapy	<b>Dr Fernando Docobo-Perez</b>
10:30-11:00	<b>Morning Tea</b>	
11:00-11:30	Modelling antibiotic PK/PD – combination therapy	<b>Prof Michael Neely</b>
11:30-12:30	Modelling effect of immune system on bacterial killing	<b>Prof George Drusano</b>
12:30-13:30	<b>Lunch</b>	
13:30-14:30	Modelling PK with biomarker data	<b>Prof William Hope</b>
14:30-15:30	Building models for your data	<b>Tutors</b>
15:30-16:00	<b>Afternoon Tea</b>	
16:00-17:30	Building models for your data	<b>Tutors</b>
<b>DAY 3 – Optimal Design of PK Studies</b>		
09:00-10:30	Optimal design of PK studies and dose optimisation using BestDose®	<b>Prof Michael Neely</b>
10:30-11:00	<b>Morning Tea</b>	
11:00-13:00	Building models for your data	<b>Tutors</b>
13:00	Closing	<b>Prof Jason Roberts</b>