

AAPS 2011 Annual Meeting
Short Course

**Basic PK/PD Systems Analysis:
Hands-on Modeling with ADAPT 5**

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Course Instructors

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Preface

This Short Course is intended for current and aspiring basic and clinical research scientists who are involved with the application of modeling, simulation and data analysis methods to problems involving drug kinetics and drug response. The Short Course will focus on the use of the ADAPT 5 software package for modeling, simulation and estimation in pharmacokinetics and pharmacodynamics.

The course will include background lectures on modeling and analysis methods in pharmacokinetics/pharmacodynamics, with an emphasis on the theory and application of individual analysis methods. Case studies will illustrate the application of the ADAPT 5 software, and will involve hands-on computer work to cover the following topics: pharmacokinetic/pharmacodynamic modeling; least squares and maximum likelihood estimation; estimation with multiple response models. This Short Course is intended to give the participants an exposure to the broad class of pharmacokinetic/ pharmacodynamic modeling problems that can be solved using ADAPT 5.

ADAPT 5 is freely available through the Biomedical Simulations Resource (BMSR) at the University of Southern California, which is supported by the National Institute for Biomedical Imaging and Bioengineering at the NIH (P41-EB001978).

David Z. D'Argenio
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- 8:30 Background: **Modeling and Estimation with ADAPT 5**
- 9:30 Case Study: **PK Model - ML/WLS Estimation (ID)**
- 10:00 **Break**
- 10:15 Background: **Receptor Occupancy and Biophase Modeling**
- 11:00 Case Study: **Simple Direct Effects Model (ID)**
- 11:30 Case Study: **Biophase PD Model (ID)**
- 12:00 **Lunch Break**
- 1:00 Background: **Basic Indirect Response Pharmacodynamic Modeling**
- 1:45 Case Study: **Indirect Response PD Model (ID)**
- 2:15 **Break**
- 2:30 Background: **Time Dependent Signal Transduction Modeling**
- 3:00 Case Study: **Transit Compartment Signal Transduction Model (ID)**
- 3:30 Case Study: **Tumor Xenograft PD Response Model (ID)**
- 4:00 **Adjourn**