

BIOMEDICAL SIMULATIONS RESOURCE
UNIVERSITY OF SOUTHERN CALIFORNIA

Short Course On

**ADVANCED MODELING METHODOLOGIES IN
PHARMACOKINETICS AND PHARMACODYNAMICS:
THE INDIVIDUAL AND THE POPULATION**

May 24-26, 1987

Marina International Hotel
4200 Admiralty Way
Marina del Rey, California

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Chairman and Organizer:
David Z. D'Argenio
Associate Director
Biomedical Simulations Resource

Day 1

May 24, 1987

MODELING APPROACHES

8:30	Introductory Remarks	David Z. D'Argenio University of Southern California
8:45	Physiological Pharmacokinetics and Clinical Applications	Kenneth B. Bischoff University of Delaware
9:45	Models of Drug Elimination	Malcolm Rowland University of Manchester
10:45	Break	
11:00	Man versus Beast: Pharmacokinetic Scaling in Mammals	Joyce Mordenti University of California San Francisco
12:00	Lunch Break	
1:30	The Effects of Circadian Rhythms on Pharmacokinetic Quantities	Keith R. Godfrey University of Warwick
2:30	Some Contributions of Stochastic Compartment Models to Kinetic Modeling Methodology	James H. Matis Texas A&M University
3:30	Break	
3:45	Linear and Nonlinear System Approaches in Pharmacokinetics. How Much do They Have to Offer?	Peter Veng-Pedersen University of Iowa
4:45	Non-Parametric Approach to Non-Steady-State Pharmacokinetic/Dynamic Data	Lewis B. Sheiner University of California San Francisco
5:45	A Universal Curve Fitting Algorithm: Combination of Modeling and Model-Free Approaches	Peter J. Munson National Institutes of Health

Day 2

May 25, 1987

MODEL ANALYSIS

- | | | |
|-------|---|--|
| 9:00 | Lumping Analysis: Approximation of Large Systems using Small Order Models | Pamela G. Coxson
Ohio State University |
| 10:00 | Useful Bounds for Parameters and Features of Unidentifiable Models | Elliot M. Landaw
University of California Los Angeles |
| 11:00 | Break | |
| 11:15 | Identifiability and Estimation Problems in Pharmacokinetic Models with Nonlinear Elimination Kinetics | Keith R. Godfrey
University of Warwick |
| 12:15 | Lunch Break | |
| 1:30 | Design and Implementation of Optimal Kinetic Experiments | Joseph J. DiStefano, III
University of California Los Angeles |
| 2:30 | Sample Schedule Design in Pharmacokinetics: Towards a Stochastic Framework | David Z. D'Argenio
University of Southern California |
| 3:30 | Break | |
| 3:45 | Choosing Parameters for Nonlinear Regression Models | Douglas M. Bates
University of Wisconsin |
| 4:45 | Model Selection: Statistical Tests, Information Criteria and Predictive Performance | Thomas M. Ludden
University of Texas Health Science Center |

Day 3

May 26, 1987

ESTIMATION

9:00 A Panel Discussion on Parameter Estimation in the Individual

- Presenters:

Elliot M. Landaw
University of California Los Angeles

Least Squares & Maximum Likelihood
Estimators

Darryl Katz
California State University Fullerton

Bayesian Estimation

Laszlo Endrenyi
University of Toronto

Robust Methods of Parameter Estimation

- Discussants:

David M. Giltinan
Merck and Co.

Lewis B. Sheiner
University of California San Francisco

10:45 Break

11:00 The Implementation of Bayesian
Methods

Adrian F.M. Smith
University of Nottingham

12:00 Lunch Break

1:30 Simultaneous Pharmacokinetic/Pharmacodynamic
Modeling with a Multivariate Dynamic
Response

Adrian Dunne
University College Dublin

2:30 Statistical Methods for Population
Analysis

Alain Mallet
INSERM U194, Paris

3:30 Break

3:45 A Systems Theory Approach to the Problem of
Recursive Estimation of Population Parameters

Alan Schumitzky
University of Southern California

4:45 Summary: To Whom are these Methodologies
Useful?

Carl C. Peck
Uniformed Services University
of the Health Sciences

5:15 Closing Comments

David Z. D'Argenio
University of Southern California

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