

BIOMEDICAL SIMULATIONS RESOURCE  
UNIVERSITY OF SOUTHERN CALIFORNIA

Workshop On

**ADVANCED METHODS OF  
PHARMACOKINETIC AND PHARMACODYNAMIC  
SYSTEMS ANALYSIS**

May 18-19, 1990

Marina International Hotel  
4200 Admiralty Way  
Marina del Rey, California

Sponsored by

**BIOMEDICAL RESEARCH TECHNOLOGY PROGRAM  
NATIONAL CENTER FOR RESEARCH RESOURCES  
NATIONAL INSTITUTES OF HEALTH**

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Chairman and Organizer:  
David Z. D'Argenio

Associate Director, Biomedical Simulations Resource

Friday, May 18, 1990

8:30	Introductory Remarks	<b>David Z. D'Argenio</b> University of Southern California
8:45	Predicting Drug Absorption in Humans	<b>Gordon L. Amidon</b> University of Michigan
9:15	Pharmacokinetics of Reversible Metabolic Systems	<b>Haiyung Cheng</b> Merrell Dow Pharmaceuticals, Inc.
9:45	Genetic Polymorphisms of Drug Metabolism	<b>Mary V. Relling</b> Saint Jude Children's Research Hospital
10:15	Discussion	
10:30	Break	
10:45	The Significance of Marked Universal Dependence of Drug Concentration on Blood Sampling Site in Pharmacokinetics and Pharmacodynamics	<b>Win L. Chiou</b> University of Illinois at Chicago
11:15	Pharmacokinetic Models for Anticancer and Antiviral Drugs Following Administration as Novel Drug Delivery Systems	<b>James M. Gallo</b> University of Georgia
11:45	Discussion	
12:00	Lunch Break	
1:30	Residence Time Distributions in Pharmacokinetics: Behavioral and Structural Models	<b>Michael Weiss</b> Martin-Luther-Universität, Halle-Wittenberg
2:00	Relationships Between Intra or Interindividual Variability and Biological Covariates: Application to AZT Pharmacokinetics	<b>France Mentre</b> INSERM U194, Paris
2:30	On the Single-Point, Single-Dose Problem	<b>George D. Swanson</b> University of Colorado Medical Center
3:00	Discussion	
3:15	Break	
3:30	Application of Stochastic Control Theory to Optimal Design of Dosage Regimens	<b>Alan Schumitzky</b> University of Southern California
4:00	Incorporating Model Uncertainty in Pharmacokinetic Parameter Estimation	<b>David Z. D'Argenio</b> University of Southern California
4:30	Discussion	
5:00	Reception	

**Saturday, May 19, 1990**

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|-------|--|---|
| 8:30  | Algebraic and Differential Relations for Membranes in Series: Permeabilities, Lag Times, Mean Residence Times, and Solute Consumption      | <b>Ronald A. Siegel</b><br>University of California at San Francisco          |
| 9:00  | Physiological Alternatives to the Effect Compartment Model   | <b>Nicholas H.G. Holford</b><br>University of Auckland                        |
| 9:30  | Pharmacokinetics/Dynamics of Corticosteroids   | <b>William J. Jusko</b><br>State University of New York at Buffalo            |
| 10:00 | Discussion   |   |
| 10:15 | Break  |   |
| 10:30 | Impact of Age and Disease on Intra- and Inter-individual Variability in Human Cardiovascular Pharmacodynamics                              | <b>Darrell R. Abernethy</b><br>Brown University                               |
| 11:00 | Pharmacodynamic Modeling of Thiopental Depth of Anesthesia   | <b>Donald R. Stanski</b><br>Stanford University                               |
| 11:30 | Discussion   |   |
| 11:45 | Lunch Break  |   |
| 1:30  | A Bayesian Kinetic Control Strategy for Cyclosporin in Renal Transplantation   | <b>Brian Whiting</b><br>University of Glasgow                                 |
| 2:00  | Targeted Systemic Exposure for Pediatric Cancer Therapy  | <b>John H. Rodman</b><br>University of Tennessee at Memphis                   |
| 2:30  | Targeting the Effect Site with a Computer Controlled Infusion  | <b>Steven L. Shafer</b><br>Stanford University                                |
| 3:00  | Discussion   |   |
| 3:15  | Break  |   |
| 3:30  | Pharmacokinetic-Dynamic Models for Feedback Controlled Drug Administration in Anaesthesia: The Use as Therapeutic System and Research Tool | <b>Helmut Schwilden</b><br>Rheinische Friedrich-Wilhelms<br>Universität, Bonn |
| 4:00  | Development of a Fiber Optic Biosensor for Measurement of General Anesthetics  | <b>Paul Yager</b><br>University of Washington                                 |
| 4:30  | Closing Remarks  | <b>David Z. D'Argenio</b><br>University of Southern California                |
| 5:00  | Reception  |   |

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