

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

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|-------|---|--|
| 8:30  | Introductory Remarks  | <b>David Z. D'Argenio</b><br>University of Southern California         |
| 8:45  | Predicting Drug Absorption in Humans  | <b>Gordon L. Amidon</b><br>University of Michigan                      |
| 9:15  | Pharmacokinetics of Reversible Metabolic Systems  | <b>Haiyung Cheng</b><br>Merrell Dow Pharmaceuticals, Inc.              |
| 9:45  | Genetic Polymorphisms of Drug Metabolism  | <b>Mary V. Relling</b><br>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><br>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><br>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><br>Martin-Luther-Universität,<br>Halle-Wittenberg |
| 2:00  | Relationships Between Intra or Interindividual Variability and Biological Covariates: Application to AZT Pharmacokinetics             | <b>France Mentre</b><br>INSERM U194, Paris                             |
| 2:30  | On the Single-Point, Single-Dose Problem  | <b>George D. Swanson</b><br>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><br>University of Southern California            |
| 4:00  | Incorporating Model Uncertainty in Pharmacokinetic Parameter Estimation   | <b>David Z. D'Argenio</b><br>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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