BIOMEDICAL SIMULATIONS RESOURCE
UNIVERSITY OF SOUTHERN CALIFORNIA

Short Course On

BIOENGINEERING APPROACHES TO PULMONARY PHYSIOLOGY AND MEDICINE

May 20, 1995
The Edgewater
Pier 67
2411 Alaskan Way
Seattle, Washington

Sponsored by
BIOMEDICAL RESEARCH TECHNOLOGY PROGRAM
NATIONAL CENTER FOR RESEARCH RESOURCES
NATIONAL INSTITUTES OF HEALTH

Chairman and Organizer:
Michael C.K. Khoo, Ph.D.
Biomedical Simulations Resource
Short Course Schedule
Saturday, May 20, 1995

7:30  Registration

8:00  Introduction  
      Michael Khoo  
      University of Southern California

8:10  Computational Models of the Respiratory  
      Oscillator in Mammals  
      Jeffrey Smith  
      National Institute of Neurological  
      Diseases and Stroke

8:50  Synaptic Plasticity and Respiratory Control  
      Chi-Sang Poon  
      Massachusetts Institute of Technology

9:30  The North Carolina Respiratory Model:  
      A Multipurpose Model for Studying  
      Control of Breathing  
      Fredric Eldridge  
      University of North Carolina  
      at Chapel Hill

10:10 Break

10:30 Application of ARX Modeling to Ventilatory  
      Control: System Characterization, Prediction  
      and Optimal Control  
      Yoshitaka Oku  
      Kyoto University

11:10 Adaptive Modeling of Changes in Ventilatory  
      Control During Sleep  
      Michael Khoo  
      University of Southern California

11:50 Lunch

1:00  Nonlinear Dynamical Analysis in the  
      Diagnosis of Respiratory Systems and States:  
      Recurrence Plot Strategies  
      Charles Webber  
      Loyola University of Chicago

1:40  Heterogeneity of Pulmonary Perfusion  
      Characterized by Fractals and  
      Spatial Correlations  
      Robb Glenny  
      University of Washington

2:20  Assessment of Upper Airway Physiology  
      Through Analysis of the Inspiratory  
      Flow Contour  
      David Rapoport  
      New York University
3:00  Coffee Break

3:20  The Forced Oscillations Technique and its Application to the Detection and Understanding of Pulmonary Mechanics  
      Kenneth Lutchen  
      Boston University

4:00  The Temporal Dynamics of Acute Induced Bronchoconstriction  
      Jason Bates  
      McGill University

4:40  Open Discussion and Reception
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