

A 3-DAY INTRODUCTORY WORKSHOP IN POPULATION PK DATA ANALYSIS

A HANDS-ON COURSE USING NONMEM®



Thursday, May 17 – Saturday, May 19, 2007
Buffalo, NY



WORKSHOP SYNOPSIS

This introductory population PK training workshop has been designed to provide the necessary information to successfully implement population pharmacokinetic methodology in a drug development program. The material is structured to impart both the theoretical and practical aspects of the population approach and is versatile so that participants with diverse backgrounds and areas of expertise may benefit. Examples of the use of population PK studies in drug development programs, especially those from the published scientific literature, will be presented whenever possible to provide specific details of various implementations and better illustrate essential aspects of population PK methods. Emphasis will be placed on compliance with the FDA's Guidance for Industry on Population PK; participants will gain an appreciation for the importance of protocol compliance, the essentials of accurate and sufficient data collection, and learn how to proactively plan in order to maximize study effectiveness.

The workshop content is provided as a combination of formal lectures, review of data, code, and data analysis results, and hands-on exercises. Participants will be provided with a computer terminal where they will be afforded the opportunity to practice coding control streams, running various models, and evaluating the results. A thorough examination of an example dataset, from development of the structural model, through covariate analysis, and model refinement will be covered. Overall, this workshop will provide the audience with a comprehensive understanding of the population PK approach to data analysis, its usefulness and added value in drug development, as well as when and where to employ population PK methods and sparse sampling within a given development program. The format is designed to be both comprehensive and interactive.

LEARNING OBJECTIVES

Following the workshop, the participant should be able to:

1. Understand the conceptual basis and rationale for the population approach to data analysis
2. Understand where and when population methods may be optimally applied to PK and PK/PD analyses during the drug development process
3. Understand and describe the potential benefits and advantages to implementing a population strategy
4. Identify the critical logistic and practical issues involved in study design, protocol development, case report form development, overall planning, and efficient execution for population PK studies
5. Describe the critical documentation standards for population PK reports intended for submission to the FDA
6. Write, execute, and de-bug basic NONMEM® control streams for simple structural PK models
7. Outline the requirements and format for basic NONMEM® datasets
8. Understand, identify, and code some basic functional forms for covariate-parameter relationships
9. Perform covariate analysis using a forward selection followed by backward elimination approach
10. Understand the importance of exploratory data analysis (EDA) and the interpretation of standard goodness-of-fit diagnostic plots
11. Understand the basis for model selection strategies and discriminate between model candidates on the basis of both quantitative and qualitative factors
12. Have insight into potential model refinement issues

Models:

Covariate

Statistical

Structural

COURSE INSTRUCTION

The workshop is organized and taught by experienced pharmacometricians from Cognigen Corporation and the University at Buffalo School of Pharmacy and Pharmaceutical Sciences, a pioneer and global leader in the field of pharmacodynamics and pharmacokinetics. Cognigen Corporation has been providing clinical pharmacology consulting services, including population PK/PD modeling and simulation to the global pharmaceutical industry for over 12 years. Cognigen specializes in performing innovative data management and analyses to generate and communicate the knowledge required for time-sensitive decision-making and regulatory review. Course faculty will include: Jill Fiedler-Kelly, Alan Forrest, Ted Grasela, and Joel Owen.



This session precedes a 3-day separate course in the concepts and applications of Pharmacokinetic/Pharmacodynamic Modeling coordinated by Dr. William J. Jusko. For information see: <http://pharmsci.buffalo.edu/symposia/> or contact wj Jusko@buffalo.edu.

Jill Fiedler-Kelly

AGENDA

May 17	Thursday		
08:30-08:40	Pf. J. Fiedler-Kelly: Introduction & Welcome	01:00-01:45	Pf. J. Fiedler-Kelly: Hands-on Exercise 3 (cont'd)
08:40-09:55	Dr. T. Grasela: The Transition to Model-Based Development	01:45-02:15	Pf. J. Fiedler-Kelly: Data Review 2: Base Model
09:55-10:10	Break	02:15-03:00	Pf. J. Fiedler-Kelly: Lecture 7: Model Selection
10:10-11:15	Pf. J. Fiedler-Kelly: Lecture 1: Population PK Modeling & Its Role in New Drug Development	03:00-03:15	Pf. J. Fiedler-Kelly: Lecture 8: Modeling Covariate Effects: Functional Forms & Coding Issues
11:15-12:15	Dr. A. Forrest: Lecture 2: Population PK Modeling Constructs & Statistical Basis for Estimation	03:15-03:30	Break
12:15-01:15	Lunch	03:30-04:15	Pf. J. Fiedler-Kelly: Lecture 8 (cont'd)
01:15-02:00	Pf. J. Fiedler-Kelly: Lecture 3: Introduction to NONMEM® Terminology	04:15-04:30	Pf. J. Fiedler-Kelly: Data Review 3: Introduction to Covariate Analysis
02:00-03:00	Pf. J. Fiedler-Kelly: Lecture 4: Overview of NONMEM® Program & Writing an NM-TRAN Control Stream	04:30-05:30	Pf. J. Fiedler-Kelly: Hands-on Exercise 4: Forward Selection of Covariate Effects
03:00-03:15	Break		
03:15-04:15	Pf. J. Fiedler-Kelly: Lecture 5: NONMEM® Dataset Structure	May 19	Saturday
04:15-05:30	Pf. J. Fiedler-Kelly: Hands-on Exercise 1: Writing Control Streams & Diagnosing Dataset Problems	08:30-09:00	Pf. J. Fiedler-Kelly: Data Review 4: Forward Selection Results and Multivariable Model Checking
May 18	Friday	09:00-10:00	Pf. J. Fiedler-Kelly: Hands-on Exercise 5: Backward Elimination of Covariate Effects
08:30-09:15	Pf. J. Fiedler-Kelly: Review Hands-on Exercise 1 & Hands-on Exercise 2: Introduction to PANDA and Test Run Execution	10:00-10:15	Break
09:15-10:00	Pf. J. Fiedler-Kelly: Lecture 6: Running NONMEM® & Interpreting the Output	10:15-10:45	Pf. J. Fiedler-Kelly: Lecture 9: Diagnosing Errors, Model Checking & Model Refinement Techniques
10:00-10:15	Break	10:45-11:00	Pf. J. Fiedler-Kelly: Data Review 5: Model Refinement
10:15-11:15	Pf. J. Fiedler-Kelly: Data Review 1: Introduction to Example Dataset, Exploratory Data Analysis & Model Diagnostic Plots	11:00-12:00	Dr. A. Forrest: Lecture 10: Bayesian Approaches to Population PK
11:15-12:00	Pf. J. Fiedler-Kelly: Hands-on Exercise 3: Developing a Base Structural Model	12:00-01:00	Lunch
12:00-01:00	Lunch	01:00-01:30	Pf. J. Fiedler-Kelly: Hands-on Exercise 6: CRF Design Considerations for Population Studies
		01:30-02:30	Dr. J. Owen: Lecture 11: Additional Topics
		02:30-02:45	Break
		02:45-03:45	Dr. J. Owen: Case Study: Practical Approaches to Utilizing Exposure-Response Relationships to Inform Drug Development and Prescribing Decision-Making
		03:45-05:00	Dr. T. Grasela: Challenges in the Implementation of a Pharmacometrics Service

REGISTRATION DETAILS

Course location: The course will be held at the University at Buffalo, Cooke-Hochstetter Hall, North Campus.

Fee: The fee is \$2200. A US government employee rate of \$1600 and student rate of \$1100 is available for up to 4 participants of each type. The registration fee includes course documentation and handouts. Lunches during the course are included, plus several on-campus options are available.

Accommodations: Ramada Inn & Conference Center, 716-636-7500 or Marriott Hotel, 716-689-6900.

Registration: Given the hands-on nature of the course, enrollment will be limited to 28 persons. Please register by filling out the form and returning to the address shown below. Confirmation of registration will be returned upon receipt, together with an invoice for the course fee. Registration will not be final until payment is received. Checks should be made out to the University at Buffalo Foundation Inc. Bank transfers and credit card payments are also accepted.

Cancellations: Cancellations with a full refund may be made until March 30, 2007. No refunds will be given for cancellations received after this date. Substitutions may be made at any time.

REGISTRATION FORM: INTRODUCTORY NONMEM® WORKSHOP

Name: _____

Organization: _____

Address: _____

City: _____ State/Country: _____

Postal Code: _____

Telephone: _____ Fax: _____

E-mail: _____

For credit card payment:

Credit card number: _____

Signature: _____ Expiration Date: _____

Kindly return to: PK/PD MODELING – NONMEM Workshop, Dept. of Pharmaceutics, School of Pharmacy, University at Buffalo, 519 Hochstetter Hall, Buffalo, NY 14260; phone: 716 645 2842, x. 224; fax: 716 645 3693; e-mail: wjjusko@buffalo.edu