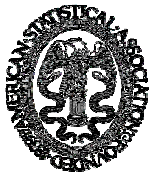

PROGRAMME OF THE SIXTY-SECOND ANNUAL DEMING CONFERENCE ON APPLIED STATISTICS

Sponsored by

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NY/NJ Metropolitan Section ~ Statistics Division

AMERICAN STATISTICAL ASSOCIATION

Biopharmaceutical Section

December 4 – December 6, 2006: Three-Day Conference

Tropicana Casino and Resort, Havana Tower, Atlantic City, NJ

Short Courses: – December 7-8, 2006

1. Group Sequential and Adaptive Designs for Clinical Trials by Professors Bruce Turnbull, Cornell University & Chris Jennison, University of Bath
2. Applied Longitudinal Analysis by Professors Garrett M. Fitzmaurice and Nan Laird, Harvard University

REGISTRATION WILL BE ON THE FOURTH FLOOR OF THE HAVANA TOWER.
It will start at 6:00 pm on Sunday December 3rd and will be followed by a one-hour reception with cold drinks and snacks.
ALL REGISTRANTS WILL RECEIVE A BOUND COPY OF THE AVAILABLE HANDOUTS FOR ALL SESSIONS.
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See registration page and website: www.demingconference.com for further details.
You can register for the conference as well as reserve a room at the Tropicana at this site.

Walter R. Young
Chairman
16 Harrow Circle
Wayne, PA 19087

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- Use the separate Havana Tower parking garage on Brighton Ave. for valet or indoor self-parking, $5 for each day that you enter.
- There is a guest check in desk on the third floor of the Havana Tower and all meeting facilities are on the fourth floor.
- The casino is in a separate building connected by a bridge over Pacific Avenue.
- The Tropicana is the largest hotel in the state of New Jersey, with elegant public areas with exclusive retail shops and fine dining.
- Located on the beach with a fully equipped fitness facility (free for conference registrants) and a heated indoor pool.
- A complimentary Diamond Club Card can offer rewards based on your play. It may also offer dining and show discounts.
- Go to www.tropicana.net/index2.htm for a complete hotel and Havana Tower description and shows scheduled in December.

Travel back to Old Havana, where the queen of all resort hotels—the Tropicana—stood proudly at the heart of it all. Today the Tropicana Casino and Resort recreates a bit of Old Havana with the most extraordinary destination in the history of Atlantic City. World-class dining, non-stop entertainment, a dazzling array of upscale shops and experiences and south Jersey's only IMAX Theatre. You'll find all of this and more at The Quarter that features shopping, dining, theater and spa services in a state-of-the-art complex with 500 hotel rooms.

62nd ANNUAL DEMING CONFERENCE ON APPLIED STATISTICS

December 3-7, 2006

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Please mention Group code: (HDEMC06)

Monday December 4, 2006
8:30 – 11:30 AM

Session A 🕮

Modern Nonparametric Inference

Professor Larry Wasserman, Carnegie-Mellon University

Moderator: Kalyan Ghosh

Nonparametric methods allow one to analyze data using minimal assumptions. This leads to more flexible inferences than can be obtained from standard parametric models. Most nonparametric methods can be implemented easily and quickly using standard software. In this tutorial we will cover a broad range of topics in modern nonparametric inference with emphasis on smoothing techniques. All the methods we discuss will be illustrated using R. The specific topics we will cover include: estimating statistical functionals, the nonparametric delta method, the bootstrap and related methods, the bias-variance tradeoff, linear smoothers (kernels, local polynomials, splines), cross-validation, nonparametric confidence bands, local likelihood, multiple regression and the curse of dimensionality, nonparametric density estimation, orthogonal function methods and adaptive methods (including wavelets). Time permitting; we will also briefly discuss derivative estimation, measurement error, and nonparametric Bayesian inference.

Session B 🕮

Mixed Models for Longitudinal Data: An Applied Introduction

Professor Donald Hedeker, University of Illinois at Chicago

Moderator: Jackie Kennedy

Longitudinal, or repeated measures, data are increasingly observed in many research areas. Statistical methods and software for analysis of such data has rapidly advanced in the last twenty years or so. In particular, mixed models, aka multilevel or hierarchical linear models, are increasingly used for analysis of longitudinal data. These methods are more appropriate than traditional ANOVA techniques since they allow for missing data across time and also for a variety of variance-covariance structures of the longitudinal data. In this tutorial, attendees will learn about use of mixed models for analysis of longitudinal data. The focus will be on application of these models. In particular, the basic mixed-effects regression model for continuous outcomes will be introduced and described, including use of polynomials for expressing change across time, the multilevel representation of the mixed model, treatment of time-invariant and time-varying covariates, and modeling of the variance-covariance structure of the repeated measures. It will be shown how this model can allow for missing data across time in terms of the outcome variable, thus permitting analysis of subjects who have incomplete data across time. Some aspects of model estimation and inference will be gone over. Methods will be illustrated using a psychiatric study in which patients level of depression is modeled over time as a function of time, diagnostic group, and drug-plasma levels.

Monday Lunch (On Your Own) 11:30 AM - 1:00 PM
1:00 - 4:00 PM

Session C

Considerations of Adaptive Clinical Trial Design and Pharmacogenomics

Speaker: Dr. Sue-Jane Wang, FDA

Moderator: William Wubao Wang

Recently, there is an enthusiastic interest and desire to use adaptive designs in early to late phases of a clinical development program. The entire clinical development program consists of exploratory and confirmatory phases. In this tutorial, the rationale of adaptive designs in the clinical development program will be introduced. Whether designs can be considered adaptive will be discussed using scenarios, which will also illustrate the often-misused adaptations that should be avoided.

Under the adaptive design framework, the molecularly targeted patient selection, if properly designed, can be a part of adaptive designs. In this vein, pharmacogenomic drug trials that use genomic (composite) biomarkers to adapt responsive patients will be introduced. The diagnostic tools that use individual genomic/genetic profiles may serve to identify responsive patients aiming at personalized medicine. The flexible/adaptive design in pharmacogenomic clinical trials and the therapeutic/diagnostic co-development will be discussed.

Literature is abundant on the statistical methodology of various adaptive designs. A successful adaptive design hinges on many factors. The flexibility to adapt needs a balance on the validity and integrity so as to guard against inappropriate modification. It is crucial to establish an objective system that allows the planning, implementation and recording of the clinical trial process and operational procedures of adaptive designs for an unbiased assessment of the trial results. The tutorial will cover:

1. Rationale of adaptive designs
2. Scenarios that fit vs. not fit adaptive designs
3. Pharmacogenomics and Co-development
4. Validity and Integrity
5. Reviewability

Session D

Selection Bias And Covariate Adjustment

Speaker: Dr. Vance Berger, NIH

Moderator: Ivan Chan

Randomized trials represent both the best medical research design and the greatest opportunity for misleading evidence to influence subsequent guidelines and prescribing decisions. This is due to the general uncritical acceptance of trial results. Careful scrutiny reveals that randomized trials can be subverted. We discuss one such opportunity for subversion, specifically selection bias that results from the ability of investigators to predict future allocations (a lack of allocation concealment) and recruit patients accordingly. That is, patients with better prognoses can be recruited when one treatment group is due to be allocated, and patients with worse prognoses can be recruited when the other treatment group is due to be allocated, thereby inducing confounding. The threats to allocation concealment that permit this prediction of future allocations are 1) the direct observation of treatment codes and 2) the prediction of future allocations based on knowledge of past allocations and restrictions on the randomization. Generally, only the first of these is considered, but we will instead focus on the second. We discuss novel methods to prevent, detect, and correct for this type of selection bias. We emphasize that the greatest obstacle to the widespread use of these methods is the spurious belief that randomized trials cannot be manipulated.

Session Titles with 🕮 are based on a book, which is available from the conference.

7 PM Speaker's Dinner (Extra Fee Event)

Tuesday December 5, 2006
8:30 – 11:30 AM

Session E 🕮

Data Mining Methods and Models

Professor Daniel Larose, Central Connecticut State University

Moderator: Jackie Kennedy

From the first volume, we discuss guarding against data dredging, and emphasize, "data mining is easy to do badly". Following the Cross-Industry Standard Process for Data Mining (CRISP-DM), we discuss data preprocessing, exploratory data analysis, data modeling, and model evaluation. We discuss the main tasks of data mining – e.g., estimation, classification, clustering, and association – and some of the algorithms used to accomplish these tasks, such as decision trees, neural networks, Kohonen clustering, and the *a priori* algorithm. Turning to the second volume, we discuss dimension reduction methods, regression analysis, model building, logistic regression, naïve Bayes estimation, and genetic algorithms. A detailed case study will be examined, *Modeling Response to Direct Mail Marketing*. In this case study, we analyze a data set consisting of 48 variables and 28,799 customers, in order to develop models for classifying which customers are most likely to respond to direct mail advertising. A cost/benefit table is constructed, in order to identify the best model. BIRCH clustering is applied, with the cluster memberships helping the classification models downstream. Several classification models are applied, including classification and regression trees, *C4.5* decision trees, logistic regression and neural networks. Further topics include overbalancing as a surrogate for misclassification costs and combining models through mean response probabilities. Excerpts from the books, as well as all data sets used in the books, may be downloaded from the book series web site: www.dataminingconsultant.com.

Session F 🕮

Dose Finding In Drug Development – Study Design Considerations

Speaker: Dr. Naitee Ting, Pfizer Inc., Global R&D

Moderator: Nandita Biswas

In the process of drug discovery and drug development, understanding the dose-response relationship is one of the most challenging tasks. It is also critical to identify the right range of doses in early stages of clinical development so that Phase III trials can be designed to confirm these doses. Usually at the beginning of Phase II, there is not a lot of available information to help guiding the study design. At this stage, Phase II clinical studies are needed to establish proof of concept (PoC), to identify a set of potentially effective and safe doses, and to estimate dose-response relationships.

Challenges in designing these studies include: selection of the dose frequency and the dose range, choice of clinical endpoints or biomarkers, and use of control(s), among others. Consequences of bad Phase II study designs may lead to the delay of the entire clinical development program or the waste of R&D investment. Misleading results obtained from poor designs could cause a Phase III program to confirm a wrong set of doses, or to stop developing a potentially useful drug. Therefore, it is critical to consider an entire drug development plan, to make best use of all the available information, and to include all relevant experts in designing Phase II dose response clinical trials. This presentation discusses some of these considerations.

Tuesday Lunch (On Your Own) 11:30 AM - 1:00 PM

1:00 - 4:00 PM

Session G 🕮

Visualizing Clinical Data Principles and Examples

Dr. Andreas Krause, Pharsight Corporation

Moderator: Walter R. Young

This tutorial focuses on some principles of graphing clinical data: Exploring multivariate relationships, comparing dose-response amongst groups, identifying critical subgroups and outliers, etc. Many examples will illustrate a variety of possibilities to create graphs that reveal the information contained in the data. Additionally, some fundamental ideas and principles of graphing data will be introduced and discussed. Examples for the graphics will be primarily from clinical drug development, e.g. patient profiles. Since S-Plus and R offer a very convenient environment for graphing data, almost all case studies are S-Plus or R examples. We will therefore start out with a quick tour of these languages before we embark on graphics. The course can be considered a quick introduction to S-Plus and R. No prior knowledge is assumed, and the creation of graphs and Trellis/lattice graphs in particular will be introduced and discussed in detail. Students are encouraged to bring laptop computers and example data sets, preferable as Excel or S-Plus and some time will be available at the end of the session for discussion of the practical aspects of working with data in the S-plus or R environment. For background and the flavor of the discussion, see chapter 6, "Trellis Graphics" of the text. www.elmo.ch/doc/splus-book/

Session H 🕮

Analysis of Dose-Response Studies: Modeling Approaches

Speakers: José Pinheiro and Frank Bretz Novartis Pharmaceuticals

Moderator: Alfred H. Balch

This tutorial is based on the same text, as the above Session F. Identifying the *right* dose is one of the most important and difficult goals in drug development. Selecting too high a dose can result in unacceptable toxicity, while selecting too low a dose decreases the chance of showing effectiveness and getting regulatory approval. Decisions derived from dose-response studies can be divided into two main components: establishing that the treatment has some effect on the clinical endpoint, the proof-*of-concept* (PoC) step, and selecting a dose that appears to be efficacious and safe for the confirmatory phase, the *dose-finding* step. The tutorial will present and discuss model-based approaches to establishing PoC and selecting target doses, concentrating on a novel method combining multiple comparison procedures (MCP) and modeling techniques. This method uses a set of candidate dose-response models, which are tested using MCP techniques based on model contrasts (PoC step). The best of the statistically significant models, if any, is used for the dose-finding step using inverse regression techniques. The use of multiple candidate models gives a certain degree of robustness to model specification, which is one of the main pitfalls of current practice based on a single dose-response model. Examples from real clinical trials and simulated data will be used to illustrate the methods.

Session Titles with 🕮 are based on a book, which is available from the conference.

Wednesday December 6, 2006
8:30 – 11:30 AM

Session I 🕮

Data Monitoring Committees And Related Statistical Issues

Speaker**:** Professor David L. DeMets, University of Wisconsin

Moderator: Ivan Chan

Monitoring accumulating data in an ongoing trial for evidence of harm or convincing evidence of benefit has been part of clinical trial practice for almost four decades but has recently received greater attention following several trials of Cox-II inhibitors. Recent guidelines for DMCs by the Food and Drug Administration (FDA) have also become available. This monitoring activity involves both complex decision-making as well as statistical issues. Often for Phase III trials with irreversible outcomes or with patients at high risk or for novel interventions, an independent data monitoring committee (DMC) may assume the responsibility for monitoring the accumulating data. The mission, structure and operating principles for DMCs will be discussed. This includes DMC membership, the need for confidentiality and minimal conflict of interest. Some relevant statistical issues will be raised, along with some common methods useful in monitoring accumulating data. These will be presented in the context of a DMC and how their use is of value. Trials should not be terminated early for benefit unless the interim results are very convincing and meet prespecified statistical criteria. However, terminating trials early for evidence of harm is more complex. Examples of some recent trials will be presented, demonstrating the complexity of the DMC decision process and the role of selected statistical methods.

Session J

Statistical Topics in Biomarker Discovery, Qualification & Method Validation

Speaker Dr. Viswanath Devanarayan, Merck & Co. Inc

Moderator: Kalyan Ghosh

The importance of biomarkers in drug development has grown rapidly in the recent years. Biomarker research can be classified into three broad topics; (i) discovery, (ii) qualification, and (iii) method validation.

Biomarker discovery entails the identification of putative markers for the response of interest, typically from high throughput genomics and proteomics. Data normalization and transformation methods can greatly impact the analysis. Each marker is analyzed individually (e.g., ANOVA), and also simultaneously using various multivariate methods to account for similarity and diversity (e.g., shrunken centroids, kNN clustering, etc.). False discovery and miss rates are critical for setting meaningful thresholds.

The process of biomarker qualification entails the demonstration of predictive value of novel composites of biomarkers for their intended purpose. Patient samples from various clinical studies are used in more sensitive platforms for measuring specific biomarkers of interest. Various multivariate modeling methods (e.g., discriminant analysis, random forests) are employed. The predictive utility of novel biomarker composites are determined via cross-validation methods, and further tested in independent cohorts.

A key determinant in the successful qualification of biomarkers is the analytical variability of the biomarker measurements. Successful method development and validation requires consideration of the statistical elements such as calibration curve fitting, weighting, precision profile, and fundamental validity. In this tutorial, some of these important statistical elements of biomarker discovery, qualification and method validation will be addressed via illustrations.

Wednesday Lunch (On Your Own) 11:30 AM - 1:00 PM

1:00 - 4:00 PM

Session K 🕮

Adaptive Designs for Clinical Trials

Speakers: Professors Bruce Turnbull and Chris Jennison

Cornell University and University of Bath

Moderator: William Wubao Wang

Recently there has been much interest in methods to modify the design of a clinical trial at an interim stage in response either to external factors or to data observed in the study itself. We review the benefits and drawbacks of adaptive designs, from both practical and theoretical viewpoints. Most of the enabling statistical methodology can be viewed in the unifying framework of combination tests, whereby conditional Type I error probability is maintained at each adaptation. In this tutorial, we develop this methodology in some detail. We then examine two applications. The first concerns sample size re-estimation in order to increase the power of the procedure based on interim estimates of effect size. The second involves the so-called seamless transition from Phase II to Phase III clinical trials whereby treatment arms may be dropped at an interim stage based on accruing results. In order to have the flexibility to enable unplanned design changes yet preserve the type I error rate, the resulting statistical methods have to be defined in terms of non-sufficient statistics. This calls into question their efficiency and the credibility of conclusions reached. We assess the possible benefits of pre-planned adaptive designs by numerical computation of optimal adaptive tests. This leads to recommendations for trial design in relation to flexibility and efficiency.

Session L 🕮

Applied Statistics and the SAS Programming Language

Speaker: Professor Ronald P. Cody

Robert Wood Johnson Medical School

Moderator: Walter R. Young

The tutorial centers on some of the new features of SAS® 9, including new SAS functions, Perl regular expressions, and additions to existing SAS procedures such as PROC UNIVARIATE, PROC REG, and PROC LOGISTIC. As part of the presentation, selected portions of two new SAS courses, Data Cleaning Techniques and SAS Functions by Example, will be presented. The SAS topics discussed will be appropriate to the beginning SAS programmer as well as those of us who have been using SAS for many years. Some highlights:

- Discussion & examples of new functions in SAS® 9, including
  - random generating functions
  - functions dealing with missing values
  - character functions that work with character classes
- Perl regular expressions (allow you to search for text patterns)
- Excerpts from the new SAS courses:
  - SAS Functions by Example
  - Data Cleaning Techniques
- Multi-label formats that work with MLF procedures
- New PROC MEANS options
- New summary output data set options
- Enhancements to PROC UNIVARIATE
- New plotting options in PROC REG
- Use of CLASS statement in PROC LOGISTIC

Session Titles with 🕮 are based on a book, which is available from the conference

TWO SIMULTANEOUS SHORT COURSES
THURSDAY AND FRIDAY, DECEMBER 7-8, 2006
GENERAL COURSE INFORMATION

Registration includes (1) two refreshment breaks each day; (2) handouts and; (3) textbook. No registrations will be accepted without payment in full. Government employees may request to be invoiced at our on-site fee. We will refund tuition if courses are canceled due to insufficient registration.

SCHEDULE

8:30–10:00 Lecture 10:00–10:20 Break 10:20–11:50 Lecture 11:50–1:10 Lunch 1:10–2:40 Lecture 2:40–3:00 Break 3:00–4:30 Lecture

Group Sequential and Adaptive Designs for Clinical Trials

Instructors: Chris Jennison (University of Bath, UK)
Bruce Turnbull (Cornell University)

Moderator: William Wubao Wang

Text: Group Sequential Methods with Applications to Clinical Trials

Day 1 of the course will cover:

1. General principles of group sequential methods
2. Information monitoring, alpha spending, nuisance parameters
3. Estimation and repeated confidence intervals
4. Applications

Day 2 of the course will cover:

5. General methodology for adaptive designs
6. Sample size re-estimation to improve power
7. Efficiency of adaptive designs
8. Multiple treatments: Seamless Phase II/III transition

It has become standard practice to incorporate formal data monitoring procedures into the design and conduct of long-term clinical trials -especially so with the increasing use of Data Monitoring Committees (e.g. FDA Guidances E6, E9). A unified formulation allows easy implementation with many types of design and a great variety of endpoints. We will survey the main ideas of group sequential procedures. The course will cover: one-sided, two-sided and equivalence designs; normal, binary, survival, regression, longitudinal and multiple endpoints; estimation; error spending, nuisance parameters, stochastic curtailment; multiple arm and factorial trials; Bayesian approaches. More recently, methods have been proposed whereby the design of a trial can be modified in mid-course without affecting the Type I error. This may be in response to external factors, or it could be a reaction to unblinded data observed in the study itself. Such modifications may include increasing the sample size to increase the statistical power, changing the study population, modifying the treatment, changing the goal from superiority to non-inferiority or vice versa, or reducing the number of treatment arms. Some methods require these "adaptations" to be rigid, with rules pre-specified in the protocol; others may be flexible, permitting unplanned changes at unplanned interim analyses. We will describe these procedures in detail and discuss the benefits and drawbacks of using the adaptive approach. Statistical software (EaSt4) will be used for all illustrative examples.

Chris Jennison, Ph.D. is Professor of Statistics and Dean of Science at the University of Bath, UK. He is an expert in the theory and application of group sequential methods, with experience in consulting and collaborative research in drug development, clinical trials and public health. In his work as Dean, he sees all stages of medical research and drug delivery in the Departments of Biology and Biochemistry, Chemistry, and Pharmacy and Pharmacology at Bath.

Bruce Turnbull, Ph.D. is Professor and former Chair of Statistical Science at Cornell University. He has extensive publications and over 25 years statistical consulting and collaborative experience in academic, government and industry research. He serves on a number of clinical trial data monitoring committees. He is a Fellow of the American Statistical Association.

Applied Longitudinal Analysis

Instructors: Professors: Garrett M. Fitzmaurice and Nan Laird,
Harvard University

Moderator: Alfred H. Balch

Text: Applied Longitudinal Analysis

Day 1 of the course will cover:

Linear Models for Longitudinal Data

1. Longitudinal Data Analysis: Basic Concepts
2. Linear Models for Longitudinal Data: Established Methods
3. Case Study 1: Longitudinal Clinical Trial
4. Case Study 2: Longitudinal Observational Study

Day 2 of the course will cover:

Extensions of Generalized Linear Models to Longitudinal Data

5. Marginal Models and Generalized Estimating Equations (GEE)
6. Generalized Linear Mixed Models (GLMM)
7. Case Studies
8. Contrasting Marginal and Mixed Effects Models

The past 25 years have seen considerable progress in the development of statistical methods for the analysis of longitudinal data. Despite these important advances, methods for the analysis of longitudinal data have been somewhat slow to move into the mainstream. In this short-course we will discuss the main issues related to taking repeated measurements on the same subjects over a period of time and introduce statistical methods for analyzing such data. We will describe the defining feature of a longitudinal study, the primary goal of a longitudinal study, and the feature of longitudinal data that complicates their analysis. We will also provide a practical introduction to established methods for analyzing longitudinal data when the response variable is continuous and discrete (e.g., repeated binary or longitudinally measured counts). These methods are presented in the setting of numerous applications to real data sets drawn from studies in health-related fields. The course will emphasis practical aspects of longitudinal data analysis.

Garrett Fitzmaurice is Associate Professor of Medicine (Biostatistics) at the Harvard Medical School, Associate Professor in the Department of Biostatistics at the Harvard School of Public Health and Foreign Adjunct Professor of Biostatistics at the Karolinska Institute, Sweden. His research and teaching interests are in methods for analyzing longitudinal and repeated measures data. He is co-author of the text "*Applied Longitudinal Analysis*". He is a Fellow of the American Statistical Association and a member of the International Statistical Institute.

Nan Laird is Professor of Biostatistics at the Harvard School of Public Health. She has been involved in all aspects of longitudinal data analysis for over 20 years: teaching, methodological and applied research. She is co-author of the text "*Applied Longitudinal Analysis*" and author of an IMS monograph on "*Analysis of Longitudinal and Cluster-Correlated Data*". She is a Fellow of the American Statistical Association and the Institute of Mathematical Statistics and a member of the International Statistical Institute.

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***Walter R. Young has chaired the Deming conference for thirty-seven consecutive years.**

REGISTRATION

Please register online at www.demingconference.com. This gives you an instant e-mail acknowledgement. Pay online with a credit card or mail a check for the amount of your bill in your acknowledgement. If necessary, you may mail or FAX this form.

Please register as early as possible. Payment must accompany this form either by check, which must be included, or by credit card number. Registration confirmation will be given by phone or FAX. You may pre-register with invoices, but will be billed at the on site rate. Make checks payable to "ASQ NY/NJ Metropolitan Section". The American Society for Quality (ASQ) is a tax-exempt organization. Federal Tax ID #39-09-12502. RECEIPTS and a CERTIFICATE OF ATTENDANCE will be distributed at the conference. E-Mail receipts will be sent upon request.

On site conference registration starts at 6 PM on Sunday December 3rd, 7:30 AM December 4th through December 6th and 8 AM on December 7th.
Transmit payments and mail registration to Mr. Eric Grossman, New York City Transit, P.O. Box 450, Deer Park, NY 11729
You may FAX a **copy** of the registration form to: (631) 254-6623. **Do Not Attempt to FAX the Orange Form as this Does Not Work**.

Last Name:_____ First Name:_____ Mr. ❑ Ms. ❑ Mrs. ❑ Dr. ❑ Other ❑

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Please Indicate which Conference **A ❑ C ❑ E ❑ G ❑ I ❑ K ❑**

Tutorial Sessions You Plan to Attend: **B ❑ D ❑ F ❑ H ❑ J ❑ L ❑**

Registration for Conference Tutorial	**On or Before Oct 1st**	**On or Before Nov 1st**	**After Nov 1st**	**Amount**
Conference	$500	$585	$670	_____
One Day Registration, Monday, Tuesday, or Wednesday (circle 1)	$250	$285	$320	_____
Student (Proof of full time college status needed) or Retiree	$200	$240	$280	_____
Free One-Hour Registrant Reception with cold drinks & snacks Sunday 6:30 PM	**Check box**	**Check box**	**Check box**	❑
Speaker Dinner, Monday 7:00 PM	$40	$45	$50	_____
Short Courses:				
Group Sequential and Adaptive Designs for Clinical Trials	$675	$740	$805*	_____
Applied Longitudinal Analysis	$675	$740	$805*	_____
Book Order Total (see reverse page)				_____
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Cancellations will be accepted until November 18th for a separate $50 fee for both the conference and short courses. There will be no refunds after November 18th, but substitution of another registrant is permissible.

Bound proceedings, which include handouts for all tutorials, will be provided to all attendees.

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ORDER PICK-UP Please claim your books at the conference sign-in table during conference hours between 8am Monday December 4 and noon of Wednesday December 6. Individuals attending a course, but not the conference, may pick up their books during the course. Unclaimed books will be mailed after the owners pay the postage.

QUESTIONS ABOUT THE ORDER PROCESS? Contact Wenjin Wang at wangw@wyeth.com.

TRAVEL TO THE CONFERENCE

AIR: Non-discount fares are usually much lower to Atlantic City (ACY) than to Philadelphia (PHL) but you should check both airports to search for the best fare and connections. Advance reservations with Royal Airport Service, (888) 824-7767, are cheaper than a cab to and from ACY. The cheapest connection from PHL is the below referenced SEPTA, but this will take about two hours. Royal Airport Service, while appreciably more expensive, takes about an hour and is probably cheaper than renting a car (www.bnm.com) that is unnecessary in Atlantic City. Discount airlines not on the major search engines such as Spirit, www.spiritair.com, to ACY; and AIRTRAN, www.airtran.com; America West, www.americawest.com; ATA, www.ata.com; Frontier, www.frontierairlines.com; Southwest, www.southwest.com; and USA 3000, www.usa3000airlines.com to PHL should also be considered. These airlines offer the additional advantage that they sell one-way tickets without a premium that is useful if one is using the conference as a stopover.

RAIL: NJ Transit has relatively frequent local (14 daily trips with 6 stops) service to Philadelphia connecting with Amtrak and SEPTA at 30th Street and PATCO at Lindenwald, NJ. Free shuttle busses meet all trains and provide direct service to all casinos. For a schedule, see www.njtransit.com/pdf/rail/r0090.pdf. This schedule also shows the R1 SEPTA connections to PHL at 30th Street.

BUS: Check your local paper or call the casino bus transportation departments for Atlantic City transportation information. There may be a casino bus trip from your local neighborhood as some of these busses travel as far as 200 miles. Most allow you to return on a different day for a charge or a space available basis. Cost of the trip will be offset by casino cash back rebates and other offers. One may take a bus to any casino, collect their coins and coupons and use a jitney on Pacific Avenue to quickly and cheaply get to the Tropicana. www.greyhound.com/products_services/casino_nj.shtml will give you information on Greyhound's service directly to the Tropicana with a rebate, allowing you a four-day open return from a number of cities, e.g., Philadelphia, NYC, Baltimore and Washington.

DRIVING: To get to the Tropicana from the Garden State Parkway, NJ Turnpike or Philadelphia, take the Atlantic City Expressway. Follow the Atlantic City Expressway to Atlantic Avenue. Make a right onto Atlantic Avenue. Travel South on Atlantic Avenue to Brighton Avenue and enter the Transportation Center on the right. There is a $5 per day fee charged by Atlantic City that will allow you to casino hop until 6:00 AM the following morning. However, if you leave your car in the garage for the duration of the conference, there is only a one time $5 fee.

PROMOTIONS: Check your local Sunday paper for coupons. The Philadelphia Inquirer occasionally prints show and meal discount coupons both Friday and Sunday. Check www.tropicana.net to view their promotions. For other casinos, check their web sites or promotion booths to see what they have to offer.

INFO: For maps, an events schedule, casino shows and general tourist info, call the Atlantic City Convention Bureau at (888) 228-4748. View their web site at www.atlanticcitynj.com that has an option for you to request a free visitor packet as well as an opportunity to e-mail questions that are promptly answered. Consider walking to and shopping in the upscale Atlantic City Outlets at Atlantic and Michigan. Remember there is no sales tax on clothes in New Jersey.

MEALS: We suggest printing a map of the Havana Tower on www.tropicana.net/images/map.pdf. Besides giving information on how to find registration, parking, and the meeting, it gives one an idea of the available restaurants and attractions. There are eight restaurants besides those in the Havana Tower. The *Beachfront* Buffet offers reasonably priced, all-you-can-eat meals. *Pier 7* offers impressively prepared seafood, while *The Seaside Café* offers a wide variety of options 24 hours a day. *Wellington & Chan's* and *Golden Dynasty* offer their respective takes on food from the Far East, while *Il Verdi* offers gourmet Italian Cuisine. If one is in the mood for something more casual, *Hooters* is located conveniently on the first floor, adjacent to the Boardwalk. Outside of the Tropicana and along the Boardwalk are a wide variety of restaurants to suit any taste or budget, from classic seafood restaurants to *Burger King*. We will provide a continental breakfast during our morning break at 10 AM as well as an afternoon refreshment break at 2:30 PM. Also, there will be an optional subsidized Speaker Dinner on Monday. There will be a one-hour reception on Sunday evening with cold drinks, snacks and a cash bar to allow you to register and meet with your fellow attendees.