

Merck & Co., Inc. presents

as part of the Joseph L. Ciminera Seminar Series

and in co-sponsorship with the

New Jersey and Princeton-Trenton chapters of the ASA

Regression Modeling & Pre-Modeling Strategies

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ABSTRACT

Multivariable regression models are powerful tools for uncovering strength and shapes of relationships between predictors and response, for making tests of partial association, and for predicting outcomes of future subjects. Successful modeling must address problems such as missing values in the predictors, overfitting (solved by data reduction or shrinkage), relaxing linearity assumptions, fitting nonlinear interactions, and presenting results graphically so that non-statisticians can understand complex models.

There are a number of pre-modeling steps that can help the modeling process including (1) displaying distributions of predictors and response, (2) understanding inter-relationships among predictors, (3) displaying how missing values occur simultaneously among several predictors, and (4) uncovering what kinds of subjects tend to have missing values for some of the predictors. All of these are helpful in deciding whether and how to impute missing values. In addition, nonparametric regression is an excellent exploratory tool.

Once one is ready to model the response, techniques such as regression splines, pooled effect tests (main effects combined with interactions), automatic tests of linearity, shrinkage (penalized maximum likelihood estimation), and various graphical displays of how the predictors affect the response are very useful.

This talk will focus on live demonstrations of various pre-modeling and modeling strategies, using S-PLUS and add-on libraries Hmisc and Design (available from Statlib). Two datasets will be used to demonstrate the methods. One of them contains information on passengers on the Titanic, where we will answer the question: "Were women and children first?"...

Wednesday, March 14, 2001

Refreshments start at 1:45 PM

Seminar 2:30 P.M. – 3:30 P.M.

Merck World Headquarters Auditorium
Whitehouse Station, NJ

There is no charge for this event. However, Pre-Registration is REQUIRED by **March 9, 2001**. No exceptions can be made. Please see attachment. For more information call or contact Bill Pikounis at v_bill_pikounis@merck.com, 732.594.3913, or Karen Scizak / Genay Hines at 732.594.4839.

Please feel free to forward this invitation to others who may be interested.

INFORMATION on Frank Harrell Seminar at MERCK on March 14, 2001

For planning and corporate security reasons, **pre-registration is required for all interested attendees of the seminar.** Please note that the deadline for registration is Friday, March 9. **(There is no on-site day-of-registration option.)**

Please take a moment to register if you are interested in attending and likely to come. (There is no obligation once you have registered.) Either

- E-mail to karen_scizak@merck.com or v_bill_pikounis@merck.com.
Please use subject header **Harrell seminar registration;**
- Call Karen Scizak / Genay Hines at 732.594.4839 or Bill Pikounis at 732.594.3913; or
- Fax 732.594.1565, to the attention of FRANK HARRELL Seminar,

to provide your name, affiliation, and contact information. If you do call and get voice-mail, please be sure to clearly state your name and spell it out for us. Please provide your phone number and address in case we need to contact you if there are unexpected changes to time, date, or place, etc. (For example, weather may be a factor.)

DIRECTIONS & INSTRUCTIONS ON THE DAY OF THE SEMINAR

On the day of the event, drive up to the Merck guardhouse at the main entrance and let them know your name and that you are attending the Harrell seminar in the auditorium. They will assist you in where to park and how to find the auditorium and reception area.

Please note that if you have not pre-registered, you will not be allowed on site. No exceptions will be made.

From New Jersey Turnpike (North):

Take Exit 14 (Route 78/Newark Airport) to Route 78 West. Continue on Route 78 to Exit 24 (Oldwick/Whitehouse). Make a left turn at the bottom of the ramp onto Route 523 South. The entrance to Merck is on the right side where the road widens.

From New Jersey Turnpike (South):

Take Exit 10 (Metuchen/Edison) to Route 287 North. Continue on Route 287 North to Route 22 West (exit is on the left) to Whitehouse Station. Take the exit for Route 523 North; there is an Exxon service station on the right at the traffic light. Continue on Route 523 for approximately 1 mile. The entrance to Merck is on the right side where the road widens. You will access the site via an overpass.

From 202 in Pennsylvania:

Take 202 North into New Jersey and then get on 31 North at the Flemington circle. After approximately 1 mile, you will see a exit sign marked "Whitehouse Station" to take on your right. That is 523 North. Follow it all the way to the "broken" intersection with Route 22. With an immediate left and right (at the Exxon station), keep continuing on 523. Approximately 1 mile after the intersection, the entrance to Merck is on the right side of 523 where the road widens. You will access the site via an overpass.

Alternatively, one could take the PA turnpike to Exit 6 and follow the **From New Jersey Turnpike (South)** directions above.

From Points Northwest:

Route 78 to Exit 24 (Oldwick/Whitehouse). Make a left turn at the bottom of the ramp onto Route 523 South. The entrance to Merck is on the right side where the road widens.