



...Maximizing your investment in the SAS® System...
and those in your organization who use it...

An intensive look at PROC LOGISTIC and other SAS/STAT® and BASE SAS tools you can use used to implement and analyze the results of studies predicting the probability of a categorical event “outcome” as a function of one or more independent (predictor) variables.

After taking this seminar you will be able to:

- **Understand why logistic regression is “better” than OLS regression when modeling a categorical outcome or response**
- **Implement and interpret the results of both simple and multiple logistic regression models**
- **Apply “goodness of fit” measures to assess and compare your models**
- **Test for the presence of “influential observations” in your data set**
- **Add the values of categorical independent variables to your model without tedious data step coding of ‘dummy variables’**
- **Apply statistical methods of optimal subset selection for multiple regression models**
- **Include and assess the effect of interaction terms in multiple logistic regression models**
- **Use the Output Delivery System (ODS) as part of your predictive modeling project.**

One Day Seminar from Sierra Information Services

Building and Applying Predictive Models with the SAS® System

Overview

This one-day session gives attendees **an intensive introduction to building and applying logistic regression models using SAS System Software**. You will learn how to use key features of PROC LOGISTIC to **create and interpret the results of predictive statistical models** where the dependent (outcome, or target, variable) is dichotomous rather than continuous. At the end of this seminar you will be able to use **PROC LOGISTIC** (and other SAS tools) to build and interpret the results of this popular predictive modeling technique.

This course also shows you the key enhancements to PROC LOGISTIC contained in Version 8 and SAS 9 Software, and how to **use Output Delivery System (ODS)** capabilities in conjunction with PROC LOGISTIC to aid in the model building and interpretation process. The **emphasis of this class** is on the **generation and interpretation of statistical models** using SAS Software, and **not** on data management/programming.

Intended Audience

Those who want to learn how to use create logistic regression models using SAS Software and to then interpret the results generated by their model.. It is also appropriate for experienced practitioners wanting to learn new features added in recent releases of the SAS System.

Prerequisites

Understanding of key SAS System concepts such as data set, procedure, observation, variable, label and format. The materials presented in this seminar also assume you are familiar with statistical concepts such as independent and dependent variable, slope, intercept, confidence interval, null and alternative hypothesis, and p-value.

Seminar Topics:

- Why is logistic regression a superior alternative to other statistical modeling techniques when we have a dichotomous dependent variable?
- Interpreting the results of a simple logistic regression model using PROC LOGISTIC
- Understanding and interpreting the odds ratio.
- Creating and interpreting customized confidence intervals around the odds ratios
- Applying and understanding "goodness of fit" measures for the logistic regression model
- Generating and using output SAS Data Sets from PROC LOGISTIC
- Creating and interpreting gains charts
- Implementation and Interpretation of Multiple Logistic Regression Models
- Automated selection of "optimal subsets" of independent variables
- Testing for "outliers" and "influential observations"
- Understanding and addressing messages reporting a "complete" or "quasi-complete separation of the sample points"
- How to use categorical variables as predictors in a logistic regression model
 - Using the CLASS Statement to avoid coding of “dummy variables”
- Assessing interaction effects among independent variables in a logistic regression model
- Forcing the inclusion of variables in to a model using the INCLUDE option.
- Applying output SAS data sets created by PROC LOGISTIC to score observations in a “validation” or “holdout” sample.
- Using the Output Delivery System (ODS) in conjunction with PROC LOGISTIC
- Implementing experimental ODS statistical graphics tools available in PROC LOGISTIC in SAS 9.1 Software to enhance your output

Contact Sierra Information Services For More Information:

Email: training@sierrainformation.com

Phone: (707) 996 7380

www.SierraInformation.com

About the Instructor

This seminar is written and presented by Andrew Karp, who started his own SAS Software consulting and training firm, Sierra Information Services, in 1994. Prior to starting Sierra he used SAS Software extensively to manage and analyze data while holding positions with PriceWaterhouseCoopers, Federal Express Corporation, Pacific Gas & Electric Company and Kaiser Foundation Health Plan. A 24-year SAS user, Andrew is a SAS Certified Professional™ who has presented this, and other, training seminars to SAS users in the United States, England, Scotland, Belgium, Australia, New Zealand and the People's Republic of China.

He has served on the technical review teams for seven books published by SAS Institute and has been an invited speaker at twelve consecutive SAS Global Forum/SAS User Group International conferences, as well as other events for SAS users in seven countries. Andrew earned undergraduate and graduate degrees from The George Washington University and taught for UC Berkeley's Extension Division from 1989 to 1995. He has also been a visiting lecturer in the Dept. of Experimental Statistics at Louisiana State University and at the University of Auckland in New Zealand.

About Sierra Information Services

Sierra Information Services is a **leading independent provider of SAS Software** consulting and training services. Our firm is based in the California Wine Country region north of San Francisco but **travel both domestically and internationally to work with clients and present training seminars**. Sierra offers clients a **wide range of support**, including SAS programming, data analysis/data mining with SAS tools, as well as the design and delivery of customized SAS Software training solutions tailored to the client's individual needs. Since its inception in 1994 Sierra has provided consulting and/or training services to, among others, Wells Fargo Bank, Bear Creek Corporation, Limited Brands, IBM, American Honda Motor Company, Lloyd's Bank/TSB, Capitol One Financial Services, Inc., Discover Financial Services, Inc., the US Department of Commerce and the US Federal Communications Commission. We have also provided consulting and training for numerous public and private sector entities in the United Kingdom, Belgium, Australia and New Zealand.

In addition to training solutions developed by Sierra's founder, Andrew Karp (see instructor's bio above), Sierra also works with other leading SAS experts to offer their training seminars around the United States. Sierra is proud to have well-known experts such as Art Carpenter, Dr. Paul Allison, Michael Raithel, and David Cassell present their training seminars under our auspices.

For the most current list of our public seminars, or to learn more about how Sierra can assist you and your organization, please visit our web site at www.SierraInformation.com or call us a (707) 360 5383. We look forward to hearing from you soon!



*...Maximizing your investment in the SAS® System...
and those in your organization who use it...*

Sierra Information Services

**19229 Sonoma Highway
Sonoma, CA 95476**

Voice: (707) 996 7380

Fax: (800) 248 8958

Email: training@sierrainformation.com

**Visit Sierra on the Web at
www.SierraInformation.com**