April 12, 2003

Colorado-Wyoming Chapter

When: 8:30 AM
Where: NCAR **Foothills** Campus (please note this is at the Foothills Campus, **not** the Mesa Lab)
    Room 1022, Building FL2, 3450 Mitchell Lane, Boulder, CO
    Driving directions to Foothills Campus
Registration Form This form is used for the ASA Reliability course and for the ASA CO/WY Spring Meeting on Friday, April 11.

STATISTICAL METHODS FOR RELIABILITY DATA

Presented by **Luis A. Escobar**, Louisiana State University

Reliability assurance processes in manufacturing industries require data-driven information for making product-design decisions. Life tests, accelerated life tests, and accelerated degradation tests are commonly used to collect reliability data. Data from products in the field provide another important source of useful reliability information. These reliability studies typically yield data that are censored and/or truncated, require the use of less familiar distributions like the Weibull, the lognormal, and the gamma, and call for inferences that involve extrapolation.

The purpose of this course is to make modern methods for analyzing failure-time and degradation data available to a wide audience of practitioners. The course will describe and illustrate the use of a mix of proven traditional techniques, enhanced and brought up to date with modern computer-based methodology. Topics to be covered include censored data, nonparametric estimation, probability plotting, maximum likelihood estimation, likelihood-based confidence intervals, acceleration models, accelerated life testing, and accelerated degradation testing. The general concepts and methods in this course also have applications in engineering, medicine, life sciences, sociology, economics, and other sciences. Most of the examples in the course will come from applications of product reliability, but some biological examples will also be presented to illustrate the breadth of application.

This course will focus primarily on applications, data, concepts, methods, and interpretation. There will be little or no theory presented and results of complicated computations will be illustrated graphically. As such, the required technical background for the course is minimal. The material in this course will be of interest and accessible to individuals ranging from engineers having had only one or two courses of statistics in their education/training through individuals with advanced degrees in statistics.

LUIS A. ESCOBAR
is a Professor in the Department of Experimental Statistics, Louisiana State University. His research and consulting interests include statistical analysis of reliability data, accelerated testing, survival analysis, linear and non-linear models. Professor Escobar is an Associate Editor for Lifetime Data Analysis and past Associate Editor for Technometrics. He is a Fellow of the American Statistical Association and an elected member of the International Statistics Institute. Professor Escobar was awarded the 1999 Jack Youden Prize and he has won two awards for outstanding teaching at Louisiana State University. He is the co-author of Statistical Methods for Reliability Data (Wiley 1998) and several other book chapters. His publications have appeared in the engineering and statistical literature.

This course is sponsored by the ASA Council of Chapters Traveling Course Committee (COC). The COC provides low-cost, local courses for Chapters. This is a chance for our members to hear an outstanding speaker, at our Chapter, at a very low cost.

Driving Directions to NCAR Foothills Campus

From Denver:
Hwy 36 West to Foothills Parkway (Hwy 157) North. Take a right at Valmont (east), go to first light at 47th. Take a left (north again). Proceed to Mitchell Lane (before railroad tracks), take a right. Proceed straight into parking lot. Enter at main entrance in center building.

From Longmont/Ft. Collins:

Take Diagonal Hwy into Boulder until it turns into Foothills Parkway. Take left at Valmont (east), go to first light at 47th. Take a left (north again). Proceed to Mitchell Lane (before railroad tracks), take a right. Proceed straight into parking lot. Enter at main entrance in center building.