

MWSUG 2013 Best Papers



Adventures in Path Analysis and Preparatory Analysis

Brandy R. Sinco, MS, University of Michigan, Ann Arbor, MI

Phillip L. Chapman, PhD, Colorado State University, Fort Collins, CO

- **SEM is an effective method of modeling the process by which variables change.**
- **HbA1c is the key outcome in Diabetes studies. SEM provides insight into the process by which HbA1c changes through the REACH behavioral intervention.**
- **One or more participation variables were associated with changes in knowledge, diabetes distress, and self-efficacy.**
- **When the endogenous variables are approximately normal, SAS Proc CALIS, SPSS/AMOS, and M-Plus produce the approximately the same results.**

Beating Gridlock: Parallel Programming with SAS®
Grid Computing and SAS/CONNECT®
Jack Fuller, Experis, Portage, MI

- **If you have a long running program and access to a SAS Grid, you may be able to leverage the power of parallel programming by spawning concurrent tasks to other programs which can be run simultaneously.**
- **The most important thing is to put as much of the work as possible in the spawned programs.**
- **Once the program is running and everything is working correctly, the last thing to be done is to benchmark your program and begin the fine tuning.**

Advanced Multithreading Techniques for Performance Improvement of SAS® Processes

Viraj R Kumbhakarna, JPMorgan Chase & Co., Columbus, OH

- **The processing time for serially independent processes can be theoretically reduced by up to the number of CPUs available for processing using MP CONNECT feature of the SAS® software. The most important thing is to put as much of the work as possible in the spawned programs.**
- **Parallelization technique yield better results when applied to best processes which have serially independent steps being executed one after the other.**
- **Multithreading yields higher returns in situations where CPU time and the real time of a process are not far apart.**

Efficient and Smart Ways to Manage Datasets for Clinical Data- Let SAS® Do the Dirty Laundry!

Gowri Madhavan, Alan Leach

Cincinnati Children's Hospital and Medical Center, Cincinnati, OH

- **The advantages of using SAS® for developing programs for the health sector and clinical data include speed, efficiency, minimizing error rates and help to establish repeated run of reports that can be automated.**
- **The reports can deliver consistent, trusted and verifiable clinical information.**
- **SAS® has the capability of accessing and integrating patient data from virtually any source in any format**
- **Using some simple SAS® MACRO variables and some ARRAYS we were able to minimize the manual intervention needed to do the work.**

Using Microsoft® Windows® DLLs within SAS® Programs

Rajesh Lal, Experis, Portage, MI, USA

- **SAS provides means to access the wealth of other Operating System functionality by using the MODULE family of functions.**
- **The paper discussed searching for required functionality on MSDN and converting the routine definition to SASCBTBL attribute table.**
- **By calling the external routines from a SAS data step, SAS programs or applications can be designed to be more powerful, dynamic and efficient.**

Residential Energy Efficiency and the Principal-Agent Problem

Ryan Anderson, U. Nebraska Public Policy Center, Lincoln, NE

- **The model offers important insight into the nature of the PA problem in residential housing, indicating a need for policymakers to direct incentive programs towards improving insulation in rental properties.**
- **An important shortcoming of this model is that it does not distinguish between different types of energy-saving investments within the two broad categories it considered.**
- **By calling the external routines from a data step, SAS programs or applications can be designed to be more powerful, dynamic and efficient.**

**Bordering on Success with PROC GMAP in SAS®:
Utilizing Annotate Datasets to Enhance Your Maps**
Kathryn Schurr, M.S.; Jonathan Wiseman
Spectrum Health-Healthier Communities, Grand Rapids, MI

- **By using PROC GMAP in conjunction with the %ANNOTATE macro, more and more users will begin to identify some of its shortcomings and figure out ways to overcome and resolve them.**
- **Combining both zip code boundaries and county borders has long been a mystery for GMAP users and this paper offers a solution to that enigma.**
- **The annotate dataset can be utilized far more extensively than might have heretofore been thought; and therefore enhance maps produced in SAS when applied effectively.**

Building a Better Bar Chart with SAS® Graph Template Language

Perry Watts, Stakana Analytics, Elkins Park, PA

- **Switch from raw to summary data where picture formats for percents can be applied.**
- **For repeating charts, summary data is the format of choice.**
- **The STYLE template, ODS Destination and Graphics statements, axis options, leg-ends and even other GTL graphics statements can be incorporated into chart building.**
- **The BARCHART statement over SAS/GRAPH's GCHART procedure works with a generic discrete X-axis and not GCHART's specialized midpoint and group axes.**

The JMP® Journal: An Analyst's Best Friend
Nate Derby, Stakana Analytics, Seattle, WA

- **Doing an analysis in JMP often involves a series of point-and-click sequences which can be difficult or awkward to do in a presentation to a boss or client.**
- **A JMP Journal helps this by embedding either the JMP output or the JMP code which creates the (interactive) analysis.**

SAS® and REDCap API: Efficient and Reproducible Data Import and Export

Sarah Worley, Cleveland Clinic, Cleveland, OH

Dongsheng Yang, Cleveland Clinic, Cleveland, OH

- **REDCap (Research Electronic Data Capture), a web application for the development and use of online research databases, allows SAS® software users to download automatically-generated SAS code for importing, labeling, and formatting data.**
- **REDCap Application Programming Interface (REDCap API) provides SAS users with the option to import and export data, files, and database settings through SAS programs.**

Don't Get Blindsided by PROC COMPARE

Joshua Horstman, Nested Loop Consulting, Indianapolis, IN

Roger Muller, Data-to-Events.com, Carmel, IN

- **Just as a skilled craftsman must be thoroughly familiar with the proper use of his tools, so the SAS programmer must understand how the various SAS procedures work. It's not enough to throw input at a procedure and blindly trust that the results mean what you think they should mean.**
- **In the case of PROC COMPARE, this means understanding what is actually being compared and what is not being compared.**

Data Presentation 101: An Analyst's Perspective

Deanna Chyn, University of Michigan, Ann Arbor, MI

Anca Tilea, University of Michigan, Ann Arbor, MI

- **SAS® provides a multitude of resources to do this very thing: the HISTOGRAM statement in PROC UNIVARIATE and/or PROC SGPLOT, PROC REPORT and Output Delivery System (ODS) statements for various PROCs**
- **To minimize the amount of time an analyst spends on formatting and reformatting (and reformatting...) results, we suggest using basic PROC SQL or ODS statements to save time spent cleaning up and clarifying analytic output.**

Increase Pattern Detection in SAS® GTL with New Categorical Histograms and Color Coded Asymmetric Violin Plots

Perry Watts, Stakana Analytics, Elkins Park, PA

- **Pattern detection is facilitated with the new categorical histogram and asymmetric violin plot.**
- **When the asymmetric violin plot is used to separate subjects by Chronic Heart Disease, an upward shift in the BMI is observed in those subjects with CHD.**
- **The breakout by gender reveals that while males are more overweight than females, females are more obese than males. However, when "No CHD" is defined as baseline, the increase in both overweight and obesity that occurs during the transition to "With CHD" is greater for females than it is for males.**

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