MidWest SAS Users Group
2008 Conference

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DJ Penix

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MWSUG 19
MidWest SAS® Users Group Conference
October 12-14, 2008
Downtown Marriott, Indianapolis

A Smooth Drive to the Information Crossroads of America!

Dear Fellow SAS® and JMP® users:

Welcome to the 19th annual MidWest SAS® Users Group conference. We hope that the conference will prove to be a valuable opportunity for you to learn new tools and techniques and to network with other SAS® users. We have been overwhelmed with the response to this conference! At this writing, we are expecting more than 325 attendees, making this one of the largest gatherings of Midwest SAS® users ever! THANK YOU!!!

The conference then kicks off with the opening session on Sunday evening at 7:00PM in Marriott 5 on the 2nd floor. The Keynote Speaker is Stuart Nisbet, R&D Director at SAS Institute. Stuart's presentation is titled "SAS Information Visualization - Past, Present, and Future". Don't miss it! A social reception in Marriott 1-4 on the 2nd floor will follow the opening session.

For those of you who are first time attendees, the conference will be help at a "first timers" session will be held on Sunday afternoon from 4:30-5:00PM in room Marriott 3 on the 2nd floor. This session is geared toward first-time conference goers, and is designed to help you get the most out of your conference experience. We'll highlight the opportunities that are available to you, give you some tips for planning your conference days, and answer questions that you may have.

Beginning Monday morning at 8:00AM and continuing through Tuesday afternoon, there is a full schedule of presentations for you to choose from. Refer to the presentation abstracts in this Program Guide to help you decide how to spend your time. In addition to presentations, classes and hands on workshops, you'll want to set aside some time for:

- Special Monday luncheon keynote presentation from SAS co-founder, John Sall.
- The SAS® Demo and Exhibit room, where you can see SAS® and JMP® software in action, ask questions, and learn how you can use SAS® and JMP® to solve your business challenges.
- Destiny's Virtual Learning Café, where you can get in-depth, self-paced training – free of charge.
- Monday afternoon SAS User Appreciation Reception in the SAS Demo and Exhibit from 4:00-6:00PM.
- Monday evening dinner in Indiana F & G, followed by Las Vegas Casino Night at the Circle City Bar and Grille.

Included in this program guide is an overview of the conference schedule, a complete listing of presentation abstracts. All functions for this year's conference will be held on the 1st floor unless otherwise indicated. See the map on the next page for further details. Also refer to "Useful Conference Information" section at the end of Program Guide which includes details on all of the meals, receptions and snacks that are included with your conference registration.

Best regards,

Cindy Lee and DJ Penix
2008 Conference Co-Chairs

2008 Conference Schedule at a Glance

Sunday, October 12

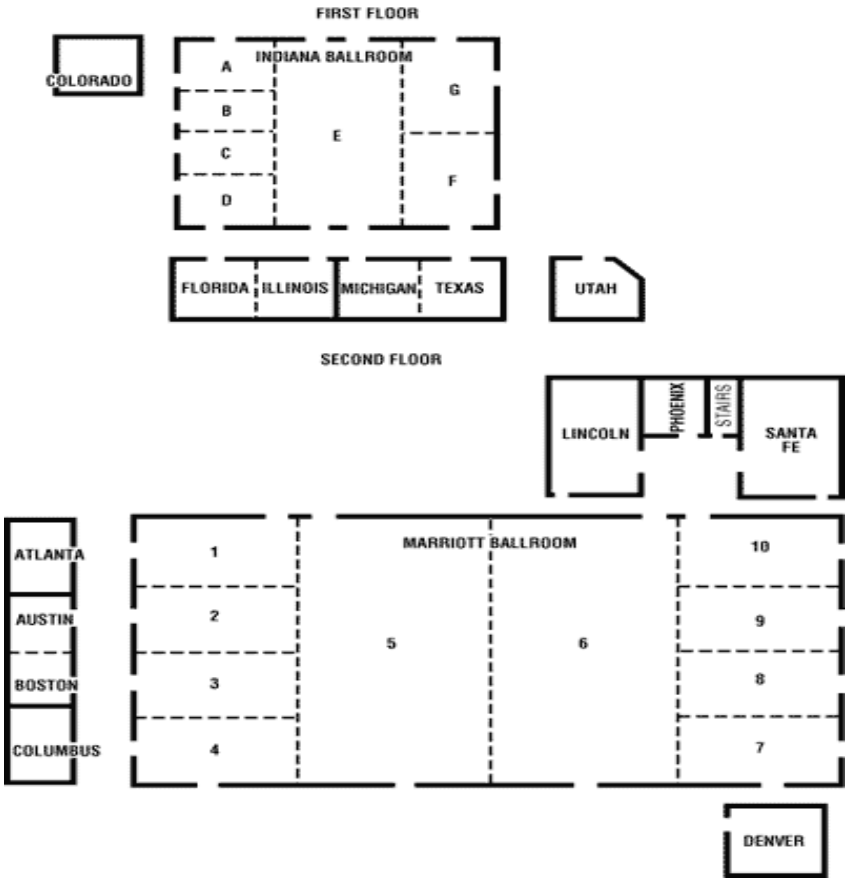
1:00 p.m. – 5:30 p.m. Registration and Information Desk Open – Indiana Foyer (near Utah)
4:00 p.m. – 4:30 p.m. Speakers and Volunteers Meeting – Marriott 3
4:30 p.m. – 5:00 p.m. First Timers Session – Marriott 3
7:00 p.m. – 8:00 p.m. Opening Session and Keynote Address – Marriott 5
8:00 p.m. – 10:00 p.m. Reception – Marriott 1–4

Monday, October 13

7:30 a.m. – 9:00 a.m. Continental Breakfast
7:30 a.m. – 11:30 a.m. Registration & Information Desk Open – Indiana Foyer (near Utah)
9:00 a.m. – 12:00 p.m. Destiny Virtual Learning Café Open – Monument
1:00 p.m. – 4:00 p.m. Destiny Virtual Learning Café Open – Monument
8:00 a.m. – 12:00 p.m. Speaker Presentations, Training Courses and Hands-on Workshops
9:00 a.m. – 12:00 p.m. SAS Demo Area and Vendor Displays Open – Indiana E
12:00 p.m. – 1:00 p.m. Lunch and Keynote Presentation – Indiana F & G
(Seating overflows room at Circle City Bar and Grille)
1:30 p.m. – 4:00 p.m. Registration & Information Desk Open – Indiana Foyer
1:30 p.m. – 4:00 p.m. Speaker Presentations, Training Courses and Hands-on Workshops
1:00 p.m. – 6:00 p.m. SAS Demo Area/Vendor Displays Open – Indiana E
4:00 p.m. – 6:00 p.m. SAS User Appreciation Reception – Indiana E
6:00 p.m. – 11:00 p.m. Las Vegas Casino Night – Indiana F & G and Circle City Bar and Grille

Tuesday, October 14

7:30 a.m. – 9:00 a.m. Continental Breakfast
7:30 a.m. – 11:30 a.m. Registration & Information Desk Open – Indiana Foyer (near Utah)
9:00 a.m. – 12:00 p.m. Destiny Virtual Learning Café Open – Monument
8:00 a.m. – 12:00 a.m. Speaker Presentations, Training Courses and Hands-on Workshops
9:00 a.m. – 12:00 p.m. SAS Demo Area and Vendor Displays Open – Indiana E
12:00 p.m. – 1:00 p.m. Buffet Lunch – Indian G and Circle City Bar and Grille
12:00 p.m. – 1:00 p.m. BOF Lunch
1:00 p.m. – 3:00 p.m. Registration & Information Desk Open – Indiana Foyer
1:00 p.m. – 4:00 p.m. Speaker Presentations, Training Courses and Hands-on Workshops
4:00 p.m. – 4:30 p.m. Closing Ceremony – Indiana G



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email: george.j.hurley@chase.com

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Sara Jones
SAS Institute, Inc.
sara.jones@sas.com

Local User Groups

SAS Institute maintains a list of local user groups in the MidWest region on the SAS Institute Web site: http://www.sas.com/usergroups/namerica/mwsug.hsql. In-house groups are not included here. If we have missed an active local group, please send a message to an MWSUG board member with the appropriate contact information.

ILLINOIS

CENTRAL ILLINOIS SAS USER GROUP
Wei-Shin (James) Wang
email: dhs9004@dhs.state.il.us
URL: : http://www.cisug.org

NORTHERN ILLINOIS SAS USERS GROUP
Donalee Wanna
URL: : http://www.nisug.com

WINDY CITY SAS USERS GROUP
Zeke Torres
email: info@wcsug.org
URL: http://www.wcsug.org

INDIANA

CENTRAL INDIANA SAS USER GROUP
D.J. Penix
Pinnacle Solutions, Inc.
phone: (317) 423-9143
email: dj@mwsug.org
URL: http://www.cisug.org

SW INDIANA SAS USERS GROUP
Rebecca Whitehouse
phone: (812) 468-5017email:
Rwhitehouse@agfinance.com

IOWA

IOWA SAS USERS GROUP
Zhuan (John) Xu
email: johnxu@1st-consulting.com
URL: http://www.iowasasuser.org

KANSAS and MISSOURI

KANSAS CITY AREA SAS USERS GROUP
Stephanie Schaller
email: info@kcasug.org
URL: http://www.kcasug.org

MICHIGAN

MICHIGAN SAS USERS GROUP
Kenneth M. Schmidt
email: ks@misug.org
URL: http://www.misug.org

MINNESOTA

TWIN CITIES SAS USER GROUP
Colin Mildenberger
email:
cmildenberger@fairisaac.com
URL: http://www.tcasug.org

NORTH DAKOTA

RED RIVER VALLEY USERS GROUP
Carol Drechsel email:
Carol_Drechsel@mail.und.nodak.edu
http://www.und.nodak.edu/org/rrvsug/

OHIO

CANTON, AKRON, MASSILLON SUG
Gina Iosue
email: gina@qlx.com

CENTRAL OHIO SAS UG (COSUG)
Paula Adkins
email: PAdkins@checkfree.com
URL:
http://www.geocities.com/cosug

CLEVELAND SAS USER GROUP
Mary MacDougall
email: clevesug@adelphia.net.
http://www.spssoft.com/clevesug/index.html

GREATER CINCINNATI SAS UG
George J. Hurley
Chase
email: george.j.hurley@chase.com

WISCONSIN

WISCONSIN SAS USERS GROUP
Steve First
email: sfirst@sys-seminar.com

WISCONSIN ILLINOIS SAS USERS
Bessler, Dr. LeRoy
email: bessler@execpc.com
http://webpages.charter.net/wiilsu

Sunday Evening Opening Session Keynote Address
"Keynote: SAS Information Visualization - Past, Present, and Future!"
Stuart Nisbet
Director, Research and Development

Since SAS' beginning, our primary focus has been effectively delivering intelligence from vast quantities of data. One of the quickest and most effective ways to glean actionable intelligence is through information visualization, and SAS has provided many products and tailored solutions to assist in this process. Through the years, hardware and operating system software advances have continually changed the visualization landscape, and SAS has worked diligently to not only keep up with the rapid pace of change, but also to foresee the future directions of our customers. This presentation will provide an overview of the current state of information visualization and some insight into where SAS is headed to derive better answers faster from ever-growing data volumes.

Stuart Nisbet is the R&D director for the Business Intelligence Platform Division. He coordinates the software development for graphics and visualization, reusable components, the SAS Output Delivery System, device drivers, and the Retail Space Management suite. He joined SAS in 1987 and holds a bachelor's degree in computer science from NC State University.

Sunday, October 12th at 7:00 pm
Marriott 5

Social Reception in Marriott 1-4 Immediately Follows

Monday Luncheon Keynote Presentation

"Putting JMP and SAS Together"

John Sall
Vice President and co-founder, SAS Institute

There are unique talents that make JMP a great dynamic visualization front end to SAS, but there are also statistical methods that make JMP and SAS work together much more powerfully than would be possible with either product by itself. One example to be demonstrated is in the field of reliability called degradation analysis. I have data that watches units degrade over time, and the goal is to estimate how long before a certain percentage of the units fail by degrading past the lowest acceptable value. One degradation application would be in determining the shelf life of pharmaceuticals, how long they retain acceptable potency, which could be much more powerfully done by a full-scale degradation model, rather than the stability analysis that is common today. It turns out that doing this involves a fair amount of manipulation with both JMP and SAS, but it is easy to understand once you see it.

Monday, October 13th at 12:00 noon
Indiana F & G
(Seating overflows room at Circle City Bar and Grille)

PRESENTATION ABSTRACTS

These are listed in order of presentation time within each section.

APPLICATIONS DEVELOPMENT

A01 Passing Data Set Values into Application Parameters (Tuesday, 8:30am – 09:00am, Indiana G)

Tony Goodman, Dynamics Research Corporation

The Requirements Integration Process Improvement Team (RIPIT) at Wright Patterson Air Force Base utilizing SAS language and procedures coupled with Adobe Flash multimedia technology has developed the Forecast Accuracy Comparison Tool or FACT Plus, enabling Air Force legacy systems to reduce time and cost of forecasting supply and maintenance needs for Air Force spare parts by 99.5%. FACT Plus integrates a mix of technologies including Base SAS, SAS IntrNet, SAS GRAPH, htmSQL, JavaScript, and Adobe Flash. All of these technologies are intertwined and communicate with one another. We will demonstrate how these various technologies are utilized within one powerful application which we feel performs a valuable purpose for its users and is indeed unique in its field.

Biography

Tony Goodman currently works for Dynamics Research Corp. and provides software solutions to the U.S. Air Force. His areas of expertise include supporting data quality improvements for the systems computing Air Force item requirements. He has 10 years experience using SAS products including Base SAS, SAS IntrNet, SAS Share, and SAS Graph. In addition to SAS, he has in-depth knowledge of Adobe Flash and many other areas of programming web-related and non web-related technologies.

A02 Data Set Investigator - Automate Exception Reporting for an electronic data dictionary with %DSI() (Tuesday, 9:00am – 9:30am, Indiana G)

Matthew Karafa, Cleveland Clinic Foundation

Data cleaning and data sleuthing can be the most tedious and time consuming part of any analysis. As part of the data elicitation process we often collect metadata about valid values, and other data rules that can be used to quickly check for such problems. By using a small amount of this metadata about the data set\u2019s variables the provided macro, %DSI(), can produce a data exception report both by rule and by record ID which can be quickly turned back to the client for data correction. %DSI() takes a comma separated data file defining data "rules" with fields including variable name, type, valid values and ranges. These are then applied to the data set using internal macros that report the records and values that violate the given set of rules. These are then organized into a fairly simple, MSWord compliant HTML document, which can be returned to the client for action.

Biography

Dr. Karafa is a Research Associate in the Quantitative Health Sciences department of the Cleveland Clinic. He has teaching roles in the Cleveland Clinic Lerner College of Medicine at Case Western Reserve and as a bioinformatisist team lead in the Collaborative Biostatistics Center.

A03 Scheduling College Classes Using Operations Research Techniques (Tuesday, 9:30am – 10:00am, Indiana G)

Barry King, Butler University

This paper presents efforts taken at Butler University's College of Business Administration to construct semester class schedules using a mixed integer linear programming procedure (PROC OPTMILP) to develop a schedule of classes and an assignment procedure (PROC ASSIGN) to assign faculty to the schedule. It also discusses our experiences with the effort and presents suggestions for improvement. At Butler University, multiple sections of classes are scheduled in an attempt to give students a wide choice of options in constructing their individual class schedule. Many constraints are imposed such as not having senior level classes on Fridays so seniors can better participate in internship activities and not having junior and senior classes in the same discipline offered at the same day and time. There is also desire from administration to spread the classes out during the day to avoid an unusual number of classes being offered during the prime late morning and early afternoon hours thus better using classroom facilities. Our work departs from previous efforts in that it takes a two-stage optimization approach to the problem faced at Butler University and solves the problem with solvers available through SAS. Each of the two programs has a data import and development stage, a solution stage, and a reporting stage all written in the SAS programming language.

Biography

Dr. King is an associate professor of operations management and information systems at Butler University and is a contract consultant for Qualex Consulting Services, Inc. His general interests are the application of operations research techniques to manufacturing, health services, and university scheduling. His research has appeared in Harvard Business Review, Management Science, and elsewhere.

A05 Loop-Do-Loop Around Arrays (Tuesday, 10:00am – 10:30am, Indiana G)
Wendi Wright, CTB McGraw-Hill

Have you ever noticed your data step repeats the same code over and over? And then thought … there must be a better way. Sure, you could use a macro, but macros can generate many lines of code. Arrays, on the other hand, can do the same job in only a few lines. Many SAS® programmers avoid arrays thinking that they are difficult, but the truth is they are not only easy to use, but make your work easier.
Arrays are SAS data step statements that allow iterative processing of variables and text. We will look at many examples, including 1) input and output of files using arrays, 2) doing the same calculation on multiple variables, and 3) creating multiple records with one observation. This tutorial will present the basics of using array statements and demonstrate several examples of usage.

Biography
Wendi Wright is a Sr. Statistical Analyst at McGraw-Hill. She has been using SAS for over 20 years and writes custom analysis and reporting programs. She has enjoyed presenting in many SAS conferences and loves the teaching aspect of both the conferences and her job. She loves to read, paint, and quilt in her spare time and has been a Big Sister to a little girl (not so little anymore) for the last 14 years.

A06 How to generate dynamical and flexible codes in a Clinical Trial (Tuesday, 10:30am – 11:00am, Indiana G)
Steve Zheng, Eli Lilly and Company

In clinical trial studies, we typically develop and move TFLs to production before data lock to ensure blinded condition. Consequently, there are many unknown information associated with this process, and we try our best to minimize occasions to recheck programs in production. Therefore, it requires many technical skills to achieve this goal, especially advanced macro skills. It is essential how to read existing data as parameters, use those parameters as condition and pass to future codes. I will use two biggest trials in our company as example to demonstrate how to utilize those skills in real studies.

Biography
Steve is Assistant Senior Statistical Analyst in Eli Lilly and Company. Steve graduated from University of Massachusetts at Amherst in 2001 as M.S. of Biostatistics. At same year, he jointed Lilly as Medfocus consultant and transferred to Lilly employee in 2003. Steve started to use SAS from 1998, and actively participated SAS users group meeting, such as SUIG, PharSUIG, Midwest SUIG. In leisure time, Steve likes to watch and play all kinds of sports and play chess (GO).

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At dunnhumbyUSA, we put genius into making sure our clients and our people get to know and treat their essential customers better than anyone else.

As a global marketing company, we apply statistical, communication, marketing and technology skills to create innovative analysis of behavioral, lifestyle, and attitudinal data. Our know-how helps companies get to know and treat their customers better than anyone else. This enables forward-thinking marketers to embed customer insights into their organizations, enhance customer engagement and improve sales, profit—and ultimately—brand value.

dunnhumby was established in London in 1989 by Edwina Dunn and Clive Humby, and found early success helping supermarket chain Tesco launch a loyalty card program. Today Tesco is one of the world's largest and most successful retailers.

In 2003, we opened our first US office in Cincinnati in a joint venture with The Kroger Company, to help the nation's leading grocery chain transform shopping into a more customer-centric experience. We continue to serve an expanding roster of prestigious consumer goods and retail companies such as Coca-Cola, General Mills, Kimberly-Clark, PepsiCo, Procter & Gamble, and The Home Depot.

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DATA VISUALIZATION AND GRAPHICS

D01 Let Me Look At It! Graphic Presentation of Any Numeric Variable (Tuesday, 1:00pm – 1:30pm, Indiana A-B)

Anastasiya Osborne, Farm Service Agency (USDA)

Have you ever been asked to produce a high quality, management-friendly report in record time? Have you ever spent time typing ranges for PROC FORMAT to apply in tables or maps? During Congressional hearings, U.S. Department of Agriculture (USDA) often gets urgent requests to graphically represent politically-sensitive data. This paper presents a SAS® macro that was developed to allow flexibility in choosing a dataset, a variable in question, and a number of groups for statistical analysis. The macro then produces the results in an Excel spreadsheet, and an ODS output. It also automatically creates a format for the variable that can be used in PROC GMAP to produce an impressive map. The macro reduces programming time by eliminating time-consuming tasks to analyze the variable and manually type ranges for PROC FORMAT.
Being a member of the Economic and Policy Analysis Staff at the Farm Service Agency (FSA), USDA requires stamina and creativity. A stream of urgent requests to produce ad-hoc reports with statistical analysis of data can come at any time. The effort in creating these reports can be time-consuming and inefficient, especially when analysis of unfamiliar data is needed within a short period of time, as, for example, during Congressional deliberations. This is when SAS MACRO facilities can be handy. MACRO saves time and automates a tedious mistake-prone process of typing format ranges, so that the mind of the analyst is freed to tackle more complicated issues. This automated approach to analyze the variable, create a user-defined format, and map data drastically reduces staff time to produce a report.

Biography
Anastasiya Osborne has used SAS since 2000. She works at the Farm Service Agency (USDA), and uses SAS for statistical analysis and ad-hoc reports for USDA and the Congress. Previously she worked at the Bureau of Labor Statistics (DOL) and at Westat. Anastasiya presents at NESUG and SESUG this year, in addition to MWSUG. She has been DCSUG Treasurer since December 2006 and attended the 2007 and 2008 SAS Global Forums. Anastasiya holds an M.A. in Applied Economics from Johns Hopkins University.

D02 A Picture Is Worth A Thousand Data Points - Increase Understanding by Mapping Data

(Tuesday, 1:30pm – 2:00pm, Indiana A-B)

Paul Ciarlariello, Sinclair Community College

It is sometimes difficult to understand what the data is telling you, especially when you are staring at a page full of numbers. Help get your message across more clearly and effectively by painting a pretty picture. This paper presents step-by-step instructions for transforming numeric data to visual data by using SAS, mapping software, and the SAS portal. This example shows how student enrollment differences between one year and the next can be plotted onto a map by ZIP code. Note that although this example relates specifically to the education market, this process can easily be translated for use in many other areas.

Biography
Paul Ciarlariello (char-law-re-ello)employed at Sinclair Community College in Dayton, Ohio
Paul is a Senior Analyst in the Research Analytics and Reporting Department. Paul has been at Sinclair for 3 years. Prior to that, he has worked for 10 years as a technology consultant for small and medium sized companies. Paul is new to SAS. I've been working with it for little over one year.

D03 Creating Special Symbols in SAS® Graph (Tuesday, 2:00pm – 2:30pm, Indiana A-B)

Shiqun (Stan) Li, Minimax Information
Wei Zhou, Eli Lilly and Company

This paper will present several techniques to embed special characters and special symbols into SAS® graphs. The special symbols can be Greek letters, mathematical symbols, subscription, superscription, underline, and user designed symbols. The symbols can be created in the titles, footnotes, axis labels, or the graph area of a SAS graph. This presentation is prepared for an intermediate and advanced audience.
Key Words: Special Symbol, Special Character, SAS/Graph, NOTE-MOVE, Subscription, Superscription, Underline, Customized Font.

Biography
Shiqun Li shiqun@gmail.com
Stan has many years of SAS experience. He has advanced skills on SAS/Intrnet, SAS/Graph and SAS macro. He has served as a biostatistician and a data analyst/programmer for several health care industries and pharmaceutical companies. Currently, he is a consultant at Novartis, NJ.
Wei Zhou wzhou26@hotmail.com
Wei is a statistical analyst at Eli Lilly, Indiana. She has been using SAS for more than 6 years. Her interests include clinical trials and healthcare evaluation.


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JMP PRESENTATIONS

J10 Visualizing Business Growth (Monday, 8:00am – 9:00am, Indiana F)

Ron Halverson, Halverson Group (invited speaker)

As a data mining and visualization tool, JMP tackles some traditional challenges that emerge when mining large, multilevel, longitudinal data sets. JMP is particularly helpful in dealing with non-linear data patterns, complex interrelationships among variables, and trending at multiple levels of analysis/specificity. Non-linear patterns can be difficult to identify using traditional statistics and presented using line or bar charts. JMP bubble charts with trails helped our team visualize 6 years of nonlinear operational and financial performance metrics for thousands of retail outlets spanning 20 markets.

A significant benefit to JMP's bubble plots is the amount of information that can be conveyed in a single graph. In addition to the traditional x and y axes, data points are displayed by 'moving bubbles' with time being the 3rd dimension and bubble size and color representing potential 4th and 5th dimensions. This allows for complicated interrelationships between variables to be visualized in simple, yet impactful ways without overloading clients with information.

With multilevel data sets, JMP bubble plots allow for exploration of complex data at the highest level of analysis with the option of drilling down to increasingly more micro levels within the same graph. This capability is especially beneficial for targeting root causes of patterns and relationships existing at higher levels. It also creates a collective awareness of the discovery path by allowing clients to participate in the exploration journey with experienced analysts.

More traditional statistical procedures such as stepwise regression and partitioning can then be employed in JMP to dig deeper into the root causes of macro and micro patterns. Just as importantly, JMP provides a powerful platform to convey the results of these more complicated statistical analyses in simple, yet impactful ways that have resonated with our clients.

Biography

Ron Halverson is the President and founder of the Halverson Group. Ron has become a recognized innovator in his field since earning his Ph.D. in Industrial and Organizational Psychology with specialties in Research Methodology and Applied Statistics from DePaul University in 1992. Since founding the firm in 1997, Ron has assembled a top team of Ph.D.-level social scientists and has established a proven track record by working with some of the most recognized brands in the world such as McDonald's, Home Depot, Epson, Sonic and United Airlines. He has also overseen the development of an exclusive package of technology and services for monitoring and quantifying consumer and employee behavior to dramatically improve the hit-rate and impact of product, service, and marketing innovations. Ron has received several prominent research awards from the Academy of Management and his work on an extensive training evaluation program was named a Best Practice by the ASTD Benchmarking Consortium. His seminal research during a 5-year tenure as a Research Psychologist in the US Army Medical Services Corp prior to founding the firm is still being used by the Defense Department during recent engagements in Iraq and Afghanistan. Dr. Halverson has authored numerous publications appearing in scholarly journals such as the Journal of Applied Social Psychology, the Journal of Business and Psychology, the Journal of Management, Leadership Quarterly, Parameters, and Armed Forces and Society. He has also authored and presented his work at numerous international professional organizations, two of which won Best Paper awards from the Academy of Management. Ron was elected twice as the President of the Chicago Region's professional association of Organizational Psychologists. He is also an active member in the Academy of Management, the Society for Industrial and Organizational Psychology and the American Psychological Society.

J07 Modern Dynamic Visualization (Monday, 9:00am – 10:00am, Indiana F)

John Sall, SAS Institute (invited speaker)

We have all seen dynamic and interactive graphics on the web, with Ajax, Flash, Silverlight, and other interactive technologies enabling this. Also we have experienced the richness of high-quality fast-moving 3D interactive graphics with each new generation of computer games and the video cards that enable them. We need harness these abilities in the service of business and statistical visualization so we can routinely do dynamic interactive graphs built into the analytic application. Motion and 3D are particularly of interest.

Biography

John Sall, a co-founder of SAS Institute, serves as the company's executive vice president. He also leads the JMP Business Division. Sall has held several positions in the American Statistical Association's Statistical Computing section. He is a past president of the North Carolina chapter of ASA. He also serves on the advisory commission for Raleigh's Museum of Natural Sciences and is on the board of The Nature Conservancy.

J12 Classification of Breast Cancer Cells Using JMP (Monday, 10:00am – 11:00am, Indiana F)

Philip J. Ramsey, The Timken Company (invited speaker)

Accurate detection of breast cancer is an area of critical importance. This talk utilizes data from the Diagnostic Wisconsin Breast Cancer Database, which were collected in connection with the development of an automated system to classify biopsied cells as malignant or benign based on digital images. Thirty variables are available as potential inputs to the classification process. Using this data, we illustrate the value of a number of JMP's exploratory and analytic platforms in the development and evaluation of classification models.

Biography

Philip Ramsey is an industrial statistician with over 20 years in applying statistical methods to products, processes, and R&D programs, across diverse industries such as: aerospace, chemicals, metals, microelectronics, automotive, apparel, construction, nondestructive testing, and general manufacturing. Dr. Ramsey has held the following industrial positions: Senior Engineer for Materials and Process Development, McDonnell Douglas, St. Louis, MO; Staff Scientist/Statistician, Alcoa Technical Center, Pittsburgh, PA; and Corporate Statistician/Senior Engineer, Shipley Division of Rohm & Haas, Marlboro, MA He also has extensive experience in the design and delivery of industrial training courses in statistical process control, design of experiments, and response surface methods for process optimization. Dr. Ramsey holds a Ph.D. in Statistics from Virginia Tech. He is a partner in the North Haven Group (NHG), a limited liability company specialized in statistical consulting and training. Dr. Ramsey is also a member of the faculty in the Department of Mathematics and Statistics at the University of New Hampshire.

J04 Analytical Method Improvement Yields Dramatic Reduction in Variation for Both Analytical an Final Formulation Process (Monday, 02:00pm – 03:00pm, Indiana F)

Roger Norris, Eli Lilly and Company

An animal health premix manufactured by Elanco (a subsidiary of Eli Lilly and Company) was subject to structural and common cause variation. The variation was large enough that internal specifications were exceeded creating investigations and reprocessing. A team formed using six sigma tools to improve the process reliability and decrease cost. The dominant source of variation was the analytical method providing information about this manufacturing process.

A series of historical data analyses and designed experiments were used to understand this analytical measurement system better. This presentation will provide an overview of the work done. It will emphasize a design utilizing the JMP™ 5.1 custom design platform that was used to understand complex technical questions where scientist's experience differed. The result of the controls implemented on the analytical measurement process was a dramatic reduction in variation in both the analytical process and associated manufacturing results.

Biography
Roger is a 1990 graduate of Rose Hulman Institute of Technology with a Bachelor of Science in Chemical Engineering. He has been employed by Eli Lilly and Company at Clinton Laboratories since that time. He has had responsibilities in maintenance engineering, capital project management, process engineering, technical services and most recently in a group called Process Variability Improvement. Process Variability Improvement is a group that champions the use of statistical thinking and tools applied manufacturing and analytical processes to understand them more deeply. Deeper understanding of the processes leads to reduction in variation as key inputs to the process are controlled for more predictable outputs. Beyond his base engineering and chemistry background, he has developed depth in experimental design, control charting and other statistical techniques. The combination of these disciplines is a powerful aid in understanding, controlling and improving processes. Taking processes from a state where they are more variable to very quiet has become the focus of his work.

J03 The Effective Billet Heating Method for Ultimate Seamless Tube Size Control (Monday, 03:00pm – 04:00pm, Indiana F)

Nathan Abboud, The Timken Company (invited speaker)

In a competitive seamless tubing market a tight tolerance with a high yield can be achieved by starting with a uniformly heated billet. This paper offers a new method to control furnace temperature to produce billets with a uniform temperature distribution. The result is an optimal control over tube size at no cost.

Biography
Nathan Abboud has been with the Timken Company for 13 years leading and mentoring process improvement projects, and teaching lean six sigma classes. He is currently a process improvement specialist responsible for reducing cost of non-conformance in the steel business unit.
Mr. Abboud has an M.S. degree in Metallurgy from Case Western Reserve University, a B.S. and an M.S. degree in Mechanical Engineering from Cleveland State University. He is a registered Professional Engineer in Ohio and a Certified Black Belt Lean Six Sigma.

J11 Visualization and the Improvement of Anodized Parts Using JMP (Monday, 04:00pm – 05:00pm, Indiana F)

*Philip J. Ramsey, The Timken Company (*invited speaker*)*

This talk describes how the use of JMP's visual and analytic capabilities resulted in dramatic yield improvements for an ailing anodizing process. The team members charged with improving this process first used variability charts and other tools to assess both continuous and attribute measurements. They then undertook a visual study of historical data using histograms, scatterplots, and 3D scatterplots to suggest appropriate specification ranges for four key process responses. With this knowledge, the team then designed an experiment to optimize these four responses, using JMP's Custom Design platform to deal with restrictions on the number of runs. Using the resulting experimental data, and JMP's Profiler and simulation capabilities, the team was able to simultaneously optimize the four responses and to identify operating windows for key process factors that guaranteed high quality product.

Biography
Refer to previous biography.

J08 Data Visualization; a necessary ingredient in making BI effective and realizing analytic excellence (Tuesday, 08:00am – 09:00am, Indiana F)

John Weisz, SAS Institute

Effective BI has many ingredients; data cleansing, data integration, data retrieval (query and reporting) and analytics. While these ingredients are important, to be effective analysis results need to motivate others toaction. The best written report has little impact on an organization if it does not motivate action. Motivating action is where data visualization makes a big contribution. This talk will focus on using data visualization to communicate analytic models and data analysis in ways that motivate analytic consumers to action and effective BI.

Biography
Jon Weisz directs marketing, strategy and product planning for JMP software, the desktop statistical analysis product from SAS. Before assuming his current role, he worked as a manager of software development, marketing and sales support for SAS. He came to SAS in 1999 from Allegro Microsystems, where he was Director of Statistical Methods. Weisz has extensive industry experience in semiconductor and automotive manufacturing and product development. Earlier in his career, he was Vice President at the consulting firm Management Resources International (MRI), dividing his time between developing and delivering training courses and direct consulting with automotive and high-technology clients. His statistical consulting activities centered on applications of design of experiments, product and process improvement and quality systems re-engineering. Before joining MRI, Weisz was a Statistical Methods Facilitator at Ford Motor Company. He received a master's degree in biostatistics from the University of Michigan and a bachelor's degree in mathematics and statistics from Eastern Michigan University. Weisz is a member of the American Statistical Association and American Society for Quality. He is a frequent presenter on data visualization, applied statistics and design of experiments, and has written several papers on applied statistics in manufacturing and product development. He also is co-author of a book on design of experiments using mirror-image designs.

J05 So, Who's Afraid of Non-Linear Regression? (Tuesday, 09:00am – 10:00am, Indiana F)
Heinz Plaumann, BASF Corporation (invited speaker)

Many technical and business colleagues shy away from maximizing the true value of decision-supporting data due to reluctance to analyze data with the most up-to-date, descriptive and predictive models. Sometimes, this entails the development and fitting of non-linear models.
This paper presents several examples from industry. The first uses SAS-JMP® software to fit models derived to support our work in product development improving performance of professional level bowling balls. This was coupled with extensive use of experimental design and led us to strong structure-property relationships, including the "subjective" evaluation of the end product: Is this really a better bowling ball?
The second example involves analysis of market penetration data. A modified Fisher-Pry model was used to show that our timing in development and market introduction was "just right" for a new family of products for use in automobile interiors. It also helped guide decisions in several cleaning areas.
A final example involves developing understanding in a spray application in agriculture where we applied models to rheological behavior and spray particle size distribution.

Biography
- ***U****niversity of Waterloo, Canada, Ph.D. Chemistry, M.A.Sc. Chem. Eng.*
- *Polysar Limited, 9 years, Synthetic rubber, Thermoplastic Elastomers, Composites, R&D/Production, Sarnia/Canada*
- *BASF Group: 10 years Emulsion Polymers, R&D/Marketing, Sarnia/Canada, Ludwigshafen/Germany, Charlotte/NC*
  7 years Urethanes, R&D, Schwarzheide/Germany, Wyandotte MI
  2006 – Present, BASF Care/Performance Chemicals, R&D Wyandotte MI
- *Experiences/Expertise: Broad range of polymer chemistries, syntheses, applications. Applied statistics. R&D/Technical Management. Hold ca. 20 patents, ca. 25 publications/presentations. College instructor, seminar leader.*
- *Hobbies: Recreational hockey, basketball, aerobic training. Square dancing. Jazz guitar/bass.*

J14 Automated P Charts (Tuesday, 10:00am – 11:00am, Indiana F)
Vincent Kane, Tellabs Operations (invited speaker)

The use of a JMP script to provide P charts of product failure rates by both date tested and date manufactured, for products sample tested within finished goods stock. Both P charts, used in conjunction, provide the support engineer with improved insight on part number quality performance to the quality expectancies.

Biography
Currently with Tellabs in Naperville Illinois, as a quality reliability consultant within the supply chain organization. Responsible for the development, deployment and support of statistical tools which support the quality and reliability improvement efforts. Similar responsibilities at SanDisk Corp, Milpitas California, Dell Computer, Austin Texas, 3Com and US Robotics, in Illinois.

J01 Using JMP in a Six Sigma Application (Tuesday, 11:00am – 12:00pm, Indiana F)
Joanne Kays, Interclarity Research & Consulting, Inc. (invited speaker)

JMP software is an important analytical tool in a Six Sigma DMAIC project. JMP allows you to explore and analyze Voice of the Customer data, determine the current state of a process, display where root causes to a problem may exist, analyze whether changes have truly made an improvement to the process, and continuously examine the new process to ensure it stays in control. In this paper, we demonstrate the use of JMP software in a Six Sigma project for diagnostic capital equipment installed in healthcare facilities. We examine both numeric measurement data from the instrument itself as well as transactional data from customer training and service.

Biography
Joanne is Scientific Project Specialist at Interclarity Research & Consulting where she is currently applying Six Sigma methodologies to help clients reduce costs and improve the efficiency of both technical and transactional processes. Prior to joining Interclarity, Joanne worked for 20 years in discovery biology positions at AstraZeneca Pharmaceuticals, Inc. and Eli Lilly and Company. Her expertise includes designing experiments, statistical evaluation of data, and interpretation and reporting of results. Currently a member of the American Society for Quality, the American Statistical Association and the New York Academy of Sciences, Joanne is also an ASQ Certified Six Sigma Green Belt and a user of JMP statistical software.

J09 Consensus NMF: A JMP script for analysis of two-way tables (Tuesday, 01:00pm – 02:00pm, Indiana F)
Stanley Young, National Institute of Statistical Sciences (invited speaker)

Two-way tables of non-negative (zero and positive numbers) are common. The data tables can be large, e.g. microarray data. There is a need to make simplify and make sense of these complex data sets particularly when using them to make predictions. Non-negative matrix factorization, NMF, can take advantage of correlations among predictors to create ordered sets of predictors; within the ordered sets, statistical testing can be done sequentially, removing the need for correction for multiple testing within the set. However, in the context of micro array analysis, we normally have to run NMF twice, at the observed level and 1/(observed level), to select separately the up- and down-regulated genes. We present Consensus NMF, a computational method for multi-block analysis modeled on Consensus PCA. We turn the one block analysis of micro array data into a two-block problem, where one block uses the observed gene expression levels and the second block uses (observed levels)-1; we then apply Consensus NMF to find, simultaneously, up- and down-regulated genes. This provides a unified approach to the two-sided testing of micro array data. Simulation results demonstrate that power can be substantially increased as compared to standard BH-corrected ANOVA. We also explicate NMF using a whisky taste data set. Computations for this work were done using a complex JMP script.

Biography
Dr. Young graduated from North Carolina State University, BS, MES and a PhD in Statistics and Genetics. He worked in the pharmaceutical industry on all phases of pre-clinical research, first at Eli Lilly and then at GlaxoSmithKline. He has authored or co-authored over 50 papers including six "best paper" awards, and a highly cited book, Resampling-Based Multiple Testing. He has two issued patents. He is interested in all aspects of applied statistics, with special interest in chemical and biological informatics. He conducts research in the area of data mining. He is the Assistant Director for Bioinformatics at the National Institute of Statistical Sciences and the CEO of Omicsoft Corporation. Dr. Young is a Fellow of the American Statistical Association and the American Association for the Advancement of Science. He is an adjunct professor of statistics at North Carolina State University, the University of Waterloo and the University of British Columbia where he co-directs thesis work.

J02 Chemical Informatics Using JMP (Tuesday, 02:00pm – 03:00pm, Indiana F)
Stanley Young, National Institute of Statistical Sciences (invited speaker)

Biologists and informatics scientists often wish to view molecules, manage chemical structure data sets, compute molecular properties and conduct statistical analysis of biological results and properties of molecules. For example, screening gives rise to structure-activity data sets and scientists would like to manipulate these data sets for drug discovery. Our idea is to link SAS JMP and its statistical analysis capability with PowerMV, a software system that allows molecular visualization, property computation, and other chemical informatics functions. One very useful capability is to render an attractive 2D drawing of a molecule starting from SMILES, a linear character string representation. Linear strings are a convenient in the JMP data spreadsheet and the strings can be sent to PowerMV for viewing. The benefit of linking JMP and PowerMV is that the non-chemical specialists, biologist and statistician, have access to a powerful working environment for dealing with chemical structures and biological results.

Biography
Refer to previous biography.

J06 Experimental Learning: Use of JMP Journal in Six Sigma Green and Black Belt Training
(Tuesday, 03:00pm – 03:30pm, Indiana F)
Amurthur Ramamurthy, Covance

Six Sigma methodologies have made considerable inroads as continuous improvement tools of choice initially in manufacturing and more recently in service and transactional environments. There is considerable global interest in training professionals on the use and application of Six Sigma tools.
It has long been realized that adult learning is at its best when participants are involved in relevant "hands-on" experiments. Six Sigma training has seen the use of classroom demonstrations ranging from the use of playing cards to simulations and the use of sophisticated experiments to illustrate concepts in factorial designs.
A consistent feedback from belts during training is the need for well-designed case studies, which span the body of knowledge, integrated with the application software such as JMP. This paper presents the features of the JMP journal to accomplish this requirement.
Using features available in the JMP journal, a case study that incorporates statistical tools akin to Six Sigma body of knowledge has been designed. This journal outlines experiments and the expected analysis at each phase. In addition support documentation and provided for reference. The JMP journal acts as a dynamic workbook throughout the course of training where the student records and stores data in addition to analyzing data, saving scripts and documenting presentations.

Biography
Ramamurthy was trained as an Electrochemist and spent time in R & D at Occidental petroleum developing catalytic cathodes for Chlor-Alkali operations. He moved to BASF Coatings as a Research Fellow investigating Corrosion beneath paint layers and Electrodeposition of polymeric films. Seven years later Ram moved to Ford Motor Company where he spent most of his time developing test methods to assess paint durability, mainly focused on paint Tribology. Towards the end of this tenure Ram got involved in Six Sigma first as a Black Belt and later as a Master Black Belt. After leaving Ford, Ram spent a year at AMAZON.COM as a Master Black Belt and now a senior Master Black Belt at Covance Central Laboratories in Indianapolis. He holds a Masters and Ph D in Chemistry and has one US patent and published over 30 peer-reviewed articles. He has been a featured speaker at the Gordon Conference. His passion includes innovative methods for teaching and predictive analytics in the Global Clinical data world.

J15 SIPOC and Recurssive Partitioning Analysis (Tuesday, 03:30pm – 04:00pm, Indiana F)
A.C. Ramamurthy, Covance

SIPOC a frequently used tool stands for Suppliers, Inputs, Process, Outputs and Customer. This tool is commonly used in the Define phase of Six Sigma to map the flow (at a high level) of the process relating Supplier/Inputs to Outputs/Customer. Listed uses of this tool include, identification of process boundaries (scoping) and gaps. In this work we describe a novel roadmap exploiting the gap identification capability of SIPOC and use it as a problem-solving precursor to the Statistical tools that follow in the Analyze phase of the Six Sigma Project. Analyze phase of a Six Sigma projects typically involves the use of brainstorming tools to list potential Key Process Input Variables, X's, and prioritize these inputs using an FMEA type of framework. This is followed by Statistical validations using one of many Hypothesis tests, linking potential X's to the response variable also referred to as the big Y. In this work we have used Recursive Partitioning (RP) a powerful data-mining tool to validate SIPOC outputs (Gaps). Transactional projects present an abundance of discrete independent variables (X's) and frequently discrete responses (Y's). A combination of SIPOC gap analysis coupled with the use of a general-purpose tool such as Recursive partitioning has brought about rapid closure of transactional Six Sigma projects.

Biography
Refer to previous biography.

HANDS-ON WORKSHOPS

HOW01 Data Step Internals: How It Really Works (Monday, 9:00am – 10:20am, Michigan)

Dana Rafiee, Destiny Corporation

This presentation will demonstrate the way the data step was designed and how it works as a utility for reading and writing data. We will discuss the program data vector, input buffers and understanding many of the standard techniques programmers are expected to know.

Biography

Dana Rafiee is an IT Principal, Sr. Systems Designer, and Sr. SAS Instructor for Destiny Corporation. He has over 20 years experience training individuals on all aspects of SAS Software including Version 9. He also consults in the areas of applications development and design in 4th Generation Languages, Operating Systems, Networking, and Communications. Dana has been a consultant, systems designer, and trainer on many applications development projects and implementations for several clients. He has worked with the latest technology available within SAS Version 9 and supported a large number of clients. His expertise brings together an understanding of system configurations, web-based delivery and optimization, efficient access to relational databases, and decision support tools.

HOW02 How Can I Merge Without Sorting? (Monday, 11:00am – 11:50am, Michigan)

Dana Rafiee, Destiny Corporation

Build your SAS tool kit with this workshop of different techniques for combining files without sorting. Topics include Merge, Format, Index, SQL, Macro, and Arrays.

HOW03 ODS Basics: Let's Understand How to Write ODS Code (Monday, 01:30pm – 02:20pm, Michigan)

Dana Rafiee, Destiny Corporation

The Output Delivery System has been available in SAS since Version 7. Isn't it time you understood how simple it is and why it can make your presentations better. We'll discuss how to take simple output and create PDFs, RTFs, HTML and more. We'll investigate the use of Styles and modifying that dreaded Template..

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HOW04 Let's Build the Whole Program in Enterprise Guide (Monday, 03:00pm – 03:50pm, Michigan)

Dana Rafiee, Destiny Corporation

SAS has offered many changes and options in software over the years. One of the key tools SAS offers on the desktop is Enterprise Guide. However, many people need an understanding of how it is best used. This workshop will show what it is designed to do.

HOW05 Macro Basics: Show Me How to Code Less (Tuesday, 9:00am – 10:20am, Michigan)

Dana Rafiee, Destiny Corporation

Get hands-on experience understanding how macros can be used and created in SAS software. We will use macro variables and macro statements such as Call Symput and Symget, %macro, %mend, and %let. Learn to write macros for existing code and make your programs simpler and more efficient.

HOW06 Tabulate Basics: Why My Brain Doesn't Work That Way (Tuesday, 11:00am – 11:50am, Michigan)

Dana Rafiee, Destiny Corporation

For so many years, people have struggled with Proc Tabulate. They usually don't get it or copy someone else's code and think there is some type of magic to this process. In this workshop, we will drink the Tabulate Kool-Aid. You will find creating cross-tabulations to be simple, fun and actually make sense.

HOW07 Advanced PROC REPORT: Compute Block Basics – Part II Practicum

(Tuesday, 01:30pm – 02:20pm, Michigan)

Art Carpenter, California Occidental Consultants

One of the unique features of the REPORT procedure is the Compute Block. Unlike most other SAS procedures, PROC REPORT has the ability to modify values within a column, to insert lines of text into the report, to create columns, and to control the content of a column. Through compute blocks it is possible to use a number of SAS language elements, many of which can otherwise only be used in the DATA step.
While powerful, the compute block can also be complex and potentially confusing. This tutorial introduces basic compute block concepts, statements, and usages. It discusses a few of the issues that tend to cause folks consternation when first learning how to use the compute block in PROC REPORT. This paper is being presented in conjunction with the Tutorial PROC REPORT: Compute Block Basics –Part I Tutorial. Consult that paper for additional details

Biography

Art Carpenter's publications list includes four books, and numerous papers and posters presented at SUGI, SAS Global Forum, and other user group conferences. Art has been using SAS® since 1976 and has served in various leadership positions in local, regional, national, and international user groups. He is a SAS Certified Advanced ProgrammerTM and through California Occidental Consultants he teaches SAS courses and provides contract SAS programming support nationwide.

HOW08 HOW version of Graphing Class: The Plot Thickens from PLOT to GPLOT

(Tuesday, 02:30pm – 03:30pm, Michigan)

Wendi Wright, CTB McGraw-Hill (Invited Speaker)

Starting with a SAS PLOT program, we will transfer this plot into PROC GPLOT and I will show you the many and varied ways you can improve the look of the plot using SAS GRAPH statements. We will make the plot really shine by customizing titles, footnotes, symbols, legends, axes and even the reference line. At each step, a hands-on example will be presented where the user will choose their own features such as symbol colors and placement of the legend. In the end, you will have built your own personalized graph using the Title, Footnote, Symbol, Legend, and Axis statements.

Biography

Wendi Wright is a Sr. Statistical Analyst at McGraw-Hill. She has been using SAS for over 20 years and writes custom analysis and reporting programs. She has enjoyed presenting in many SAS conferences and loves the teaching aspect of both the conferences and her job. She loves to read, paint, and quilt in her spare time and has been a Big Sister to a little girl (not so little anymore) for the last 14 years.

Virtual Learning Café

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Version 9 Changes and Enhancements
Macros in SAS Software
Programming II: Data Manipulation Using the Data Step
Programming III: Advanced Techniques
Graphing in SAS Software
Enterprise Guide: Querying and Reporting
Output Delivery System
SQL Processing with SAS Software
Report Writing

MWSUG 2007 has invited Destiny Corporation to return with their Virtual Learning Café. The Café offers conference attendees the ability to access over 400 SAS topics and lessons.

Since 1987, Destiny Corporation has provided SAS training services to government and commercial organizations. Destiny Corporation has taken our "instructor led" courses and converted them into a Virtual Learning Environment. Our Virtual courses feature a live instructor, cover the same topics as our onsite courses and are completely self-paced.

For more information about Destiny Corporation and these SAS courses, please visit www.vdestiny.com.

IN CONFERENCE TRAINING CLASSES

ICC1 Getting the Most from SAS Formats (Monday, 8:30am – 11:30pm, Florida)

Art Carpenter, CA Occidental Consultants

This half-day seminar shows you how to get the most from Formats in the SAS System. Starting at the basics, we will cover the essential role that Formats play when working with data stored in SAS data sets. We will then move to how INFORMATs are used when building SAS data sets from other data sources, how to work with SAS-supplied date and time formats, and how to create permanent SAS format libraries. Other topics to be discussed include MULTILABEL formats, the new ANYDATE INFORMAT in SAS 9 Software, using Formats when performing table look-ups, concatenated Format Libraries, creating Formats from Input Control Data Sets, and how to effectively use PICTURE Formats. This seminar is appropriate for all SAS Software users who want to learn more about the power and flexibility of SAS formats, and what they can do for you.

After completing this course the student will be able to:

- Use formats and informats to read data from flat files.
- Assign formats and informats to the DATA descriptor record.
- Use SAS supplied format libraries.
- Modify procedure output displays through the use of formats.
- Change the way procedures calculate and group information.
- Use formats to perform traffic lighting tasks.
- Specify and build user defined formats.
- Utilize and create PICTURE style formats.
- Make use of formats and informats new to SAS 9.
- Access and control format libraries and catalogs.
- Build and make use of MULITLABEL formats.

Biography

Art Carpenter's publications list includes four books, and numerous papers and posters presented at SUGI, SAS Global Forum, and other user group conferences. Art has been using SAS® since 1976 and has served in various leadership positions in local, regional, national, and international user groups. He is a SAS Certified Advanced ProgrammerTM and through California Occidental Consultants he teaches SAS courses and provides contract SAS programming support nationwide.

ICC2 Generating Reports With (ODS) Style(s) (Monday, 1:30pm – 4:00pm, Florida)

Ben Cochran, The Bedford Group

This course is intended for two groups of students : those who are brand new to the SAS System, and those who have been using the SAS System for a few years, but want to fill in the 'gaps' in their SAS report writing knowledge. Students who take this course will learn a lot about the SAS System and how to use specific procedures as well as the Output Delivery System (ODS) to generate a number of different kinds of reports. Course topics include:

- Introduction to Report Writing with the SAS System
  - Introduction to the Output Delivery System (ODS).
  - Using ODS styles to add color and enhance the format
  - Utility procedures, such as PROC SORT and PROC FORMAT, for enhancing reports
- Graphic Reports
  - An introduction to SAS/Graph is presented in this chapter
  - PROC GPLOT and PROC GCHART and how to get nice graphical reports quickly
- Summary Reports
  - An introduction to summarizing data
  - Using the Proc FREQ and Proc TABULATE procedure
  - Summary reports with the REPORT procedure
  - Adding Style to the Report procedure

Biography

After more than 11 years with SAS Institute in the Professional Services (as an Instructor) and Marketing Departments (as Marketing Manager for the SAS/EIS product), Ben Cochran left to start his own consulting and SAS Training business in the fall of 1996 – The Bedford Group. As an affiliate member of SAS Institute's Alliance Partner Program, Ben has been involved in many consulting projects over the last 12 years and has been teaching SAS courses since 1985.Ben has authored and presented several papers at SUGI and regional user groups on a variety of topics since 1988.

ICC3 PROC SQL Programming: The Basics and Beyond (Tuesday, 8:30am – 11:30am, Florida)
Kirk Paul Lafler, Software Intelligence Corporation, Spring Valley, CA

This course expands your PROC SQL programming skills using numerous examples and techniques of this powerful database language. Topics include strategies for creating and using virtual tables known as views, using case expressions to perform conditional logic and reclassification of data values, database design concepts including basic normalization rules, examples of implementing table integrity constraints, accessing information contained in read-only dictionary tables, interfacing PROC SQL with the Macro facility to create macro variables and macro variable lists, rules associated with index creation and usage, undocumented and hard-to-find PROC SQL features for debugging and performance purposes, complex queries using inner and outer join constructs including set operators, and performance tuning strategies.

Biography
Kirk Paul Lafler is consultant and founder of Software Intelligence Corporation and has been programming in SAS since 1979. As a SAS Certified Professional and SAS Institute Alliance Member (1996 – 2002), Kirk provides IT consulting services and training to SAS users around the world. Kirk has written four books including PROC SQL: Beyond the Basics Using SAS *(SAS Institute. 2004), and more than two hundred peer-reviewed articles in professional journals and SAS User Group proceedings. He has also been an Invited speaker at more than two hundred SAS user group conferences and meetings at the International, Regional and Local level. His popular SAS Tips column, "Kirk's Korner of Quick and Simple Tips", appears regularly in the BASAS, HASUG, SANDS, SAS, SESUG, and WUSS Newsletters and Web sites.*

ICC4 An Introduction to the Analysis of Survival Data Using the SAS® System
(Tuesday, 1:00pm – 4:00pm, Florida)
Michael G. Wilson

This course discusses survival analysis concepts with an emphasis on health care problems. During this In-Conference Course, we will introduce statistical methods for the survival analysis. That is, the analysis of studies where the primary outcome is time-to-event. The principal goal of this course, however, is to illustrate the implementation of these methods using SAS®. Specifically, we will use methods for estimating survival time (Kaplan-Meier), comparing survival between subgroups (log-rank test), and modeling survival curves (Cox proportional hazards regression). Emphasis will be placed on the concepts of how time is measured (e.g., time since entry, attained age, and calendar time), right censoring, competing risks when comparing subgroups, and assessing the assumption of proportional hazards when modeling. Learn:

- What are "survival data"?
- Why we need special methods?
- How to produce Kaplan-Meier Estimates
- How to compare "Survival Curves"
- How to fit the Proportional Hazards Model
- How to incorporate covariates and prognostic factors
- Assess important assumptions about censoring and the fit of your model

Who should attend?
Intermediate-level biostatistical programmers, statistical analysts, epidemiologists, and social scientists that have a basic understanding of hypothesis testing.

Biography
Michael studied Biostatistics at Western Michigan University in Kalamazoo, where he received his Master's degree. He worked for Eli Lilly and Company for 12 years before becoming an Independent Biostatistical Consultant for large pharmaceutical, animal health and medical device corporations. Michael is an adjunct faculty member at Indiana University's School of Medicine in the Department of Clinical Pharmacology, where he consults with medical fellows on their research projects. He has also taught the graduate-level Research Design and Statistics course to PharmD students at Butler University in Indianapolis. Over the past several years, Michael has been invited to teach "Statistics to Non-statisticians" workshops internal to large pharmaceutical corporations and in commercial external courses. Michael is a PADI-certified, Rescue SCUBA diver.

SAS Presentations

SAS01 Find Out What You're Missing: Programming with SAS® Enterprise Guide

(Monday, 8:00am – 9:00am, Indiana C-D)

Mike Porter, SAS Institute

Due to the large amount of data typically involved, data mining analyses exacerbate some common modeling problems and create a fair number of new In this paper, you can read about the productivity gains that you can enjoy when you add SAS® Enterprise Guide® to your SAS programming toolbox. You will see how to perform old tasks in a new way as well as how to accomplish some tasks that would have been very difficult—if not impossible—without the benefit of an integrated tool like SAS Enterprise Guide. Topics in this paper include:

- Working with projects and the process flow
- Getting the most from SAS tasks
- Flexing your power with project prompts
- Conditionally running portions of your project
- Noting a few things that you cannot do

Biography

Mike Porter was born and raised in Indiana. After spending his youth in the rural farming communities found in the southern section of the state, he later attended and Graduated from the University of Evansville with a Bachelors degree in Computer Science. Upon graduation, he spent several years working in Washington D.C. in Intelligence, Department of Energy and other Department of Defense agencies. Mike joined SAS when his wife was stationed in North Carolina and serving as an attorney in the Air Force. He is a Systems Developer in his 12th year at SAS. His first role was developing the SAS System Viewer but then moved to the Enterprise Guide development team over 10 years ago. Mike has worked and contributed to the development of every release of Enterprise Guide and the most recent versions of the SAS Add-in for Microsoft Office. As a developer, Mike's primary areas of responsibility have been Custom Tasks, Process Flow, and most recently the Query Builder.

SAS02 Getting Started with ODS Statistical Graphics in SAS® 9.2

(Monday, 9:00am – 10:00am, Indiana C-D)

*R*obert *Rodriguez, SAS Institute*

ODS Statistical Graphics (or ODS Graphics for short) is major new functionality for creating statistical graphics that is available in a number of SAS software products, including SAS/STAT®, SAS/ETS®, SAS/QC®, and SAS/GRAPH®. With the production release of ODS Graphics in SAS 9.2, over sixty statistical procedures have been modified to use this functionality, and they now produce graphs as automatically as they produce tables. In addition, new procedures in SAS/GRAPH use this functionality to produce plots for exploratory data analysis and for customized statistical displays.

SAS/GRAPH is required for ODS Graphics functionality in SAS 9.2. This paper presents the essential information you need to get started with ODS Graphics in SAS 9.2. ODS Graphics is an extension of ODS (the Output Delivery System), which manages procedure output and lets you display it in a variety of destinations, such as HTML and RTF. Consequently, many familiar features of ODS for tabular output apply equally to graphs. For statistical procedures that support ODS Graphics, you invoke this functionality with the ods graphics on statement. Graphs and tables created by these procedures are then integrated in your ODS output destination. ODS Graphics produces graphs in standard image file formats, and the consistent appearance and individual layout of these graphs are controlled by ODS styles and templates, respectively.
Since the default templates for procedure graphs are provided by SAS, you do not need to know the details of templates to create statistical graphics. However, with some understanding of the underlying Graph Template Language, you can modify the default templates to make changes to graphs that are permanently in effect each time you run the procedure.

Alternatively, to facilitate making immediate changes to a particular graph, SAS 9.2 introduces the ODS Graphics Editor, a point-and-click interface with which you can customize titles, annotate points, and make other enhancements.

Biography

Bob Rodriguez joined SAS in 1983 and is currently a director in SAS R&D with responsibility for the development of statistical software, including SAS/STAT and SAS/QC. He received his Ph.D. in statistics in 1977 from the University of North Carolina. Bob is active in the American Statistical Association, where he serves as vice president.

SAS06 Tips and Tricks for Creating Multi-Sheet Microsoft Excel Workbooks - the Easy Way with SAS®

(Monday, 10:00am – 11:30am, l**ndiana C-D**)

Vince DelGobbo, SAS Institute

Transferring SAS® data and analytical results between SAS and Microsoft Excel can be difficult, especially when SAS is not installed on a Windows platform. This paper discusses using the new XML support in Base SAS®-9 software to create multi-sheet Microsoft Excel workbooks (versions 2002 and later). You will learn step-by-step techniques for quickly and easily creating attractive multi-sheet Excel workbooks that contain your SAS output, and also tips and tricks for working with the ExcelXP ODS tagset. Most importantly, the techniques that are presented in this paper can be used regardless of the platform on which SAS software is installed. You can even use them on a mainframe! The use of SAS server technology is also discussed. Although the title is similar to previous papers by this author, this paper contains new and revised material not previously presented.

Biography

Vince DelGobbo is a Senior Systems Developer in the Web Tools group at SAS. This group is responsible for the SAS/IntrNet Application Dispatcher and SAS Stored Processes. He has worked on the HTML Formatting Tools, the SAS Design-Time Controls and the ExcelXP ODS tagset, and is developing new Web and server-based technologies, as well as integrating SAS output with Microsoft Office. Vince has been a SAS Software user since 1982, and joined SAS in 1992.

SAS04 You Want ME to use SAS® Enterprise Guide® ??
(Tuesday, 8:00am – 9:00am, Indiana C-D)
Vince DelGobbo, SAS Institute

Starting with SAS® 9, one copy of SAS Enterprise Guide is included with each PC SAS license. At some sites, desktop PC SAS licenses are being replaced with a single server-based SAS license and desktop versions of Enterprise Guide. This presentation will introduce you to the Enterprise Guide product, and provide you with some good reasons why you should consider using it.

Biography
Refer to previous biography.

SAS05 A Sampler of What's New in Base SAS® 9.2 (Monday, 9:00am – 10:00am, Indiana C-D)
Jason Secosky, SAS Institute

Coding with SAS is easier than ever with SAS 9.2. This paper highlights the top new features and performance improvements in DATA step, PROC SQL, and PROC SORT. Included are writing functions with DATA step syntax, improved performance when accessing an external database from PROC SQL, more intuitive and culturally acceptable sorting with PROC SORT, and several "Top 10" SASware Ballot items.

Biography
Jason Secosky is a Principal Software Developer at SAS and is responsible for extending and maintaining the DATA step language as well as the new multi-threaded TSPL Table Server language. He has been at SAS since 1997. Prior to working at SAS, Jason received a B.S. in Computer Engineering from the University of California, San Diego and a M.S. in Computer Science from the University of Washington..

SAS03 SAS® Stat Studio: A Programming Environment for High-End Data Analysts
(Monday, 10:00am – 11:00am, Indiana C-D)
*R*obert *Rodriguez, SAS Institute*

SAS Stat Studio 3.1 is new statistical software in SAS 9.2 that is designed to meet the needs of high-end data analysts— innovative problem solvers who are familiar with SAS/STAT® and SAS/IML® but need more versatility to try out new methods. Stat Studio provides a rich programming language, called IMLPlus, that blends an interactive matrix language (IML) with the ability to call SAS procedures as functions and to create customized dynamic graphics. For standard tasks, Stat Studio provides the same interactive graphics and statistical capabilities available in SAS/INSIGHT®, and so it serves as a programmable successor to SAS/INSIGHT.
With Stat Studio, you can build on your familiarity with SAS/STAT or SAS/IML to write programs that explore data, fit models, and relate the results to the data with linked graphics. You can programmatically add legends, curves, maps, or other custom features to plots. You can write interactive analyses that respond to your input to analyze only selected subsets of the data. You can move seamlessly between programming and interactive analysis.
A previous paper (Wicklin and Rowe, 2007) introduced Stat Studio and presented examples of the point-and-click interface. This paper focuses on programming aspects of Stat Studio; the goal is to demonstrate techniques that are straightforward in Stat Studio but might be difficult to implement in other software. Not all programming statements are described in detail in this paper; for more information see the Stat Studio documentation. The main ideas in this paper are illustrated by using meteorological data.

Biography
Refer to previous biography.

SAS07 New SAS® Performance Optimizations to Enhance Your SAS® Client and Solution - Access to the Database (Monday, 11:00am – 12:00pm, Indiana C-D)
Mike Whitcher, SAS Institute

The SQL procedure has been used for years as the way many SAS clients and solutions query for their data. Examine the new SQL performance optimizations that have been added to this bellwether procedure, optimizations designed to greatly expand query pass-through capability to databases and shorten your SAS client and solution query response times. Also, see the new SQL enhancements for use with SAS data sets. Whether you use SAS® Web Report Studio, SAS® Marketing Automation or other SAS clients or solutions, or still submit your SQL queries in batch, you owe it to yourself to see how you can make them run faster.

Biography
Mike Whitcher is a Senior Developer with 21 years experience working at SAS Institute. A graduate from North Carolina State University, Mike has spent most of his career at SAS in computer language development (e.g. C compilers, DATA step, and SAS macro facility). More recently, Mike holds a patent for his work on the Business Intelligence Platform. Mike now spends his time developing PROC SQL, and he is interested in learning how you use SQL.

SAS08 Half-Day Seminar: An Introduction to Mixed Models for Pharmaceutical Applications
(Monday, 1:30pm – 4:00pm, Indiana C-D)
Catherine Truxillo, SAS Institute

This class features lecture and demonstrations of mixed model concepts using the MIXED procedure in SAS for several types of analyses common to pharmaceutical and clinical trial research. In addition to basic concepts in mixed model methodology, students will learn to apply mixed models for crossed classification (n-way) designs, nested classification designs, and crossover designs. A combination of lecture and live demonstration format enhance the learning experience.

The recommended audience for this course has a firm understanding of linear models, such as ANOVA and regression. Familiarity with mixed models theory is helpful but is not required.

Intended audience: Researchers, statisticians and data analysts who want to learn some basic concepts and techniques for analysis of models with fixed and random effects.

Biography
Catherine Truxillo has been a Statistical Training Specialist with SAS for 8 years. She holds a doctorate from The University of Texas at Austin and has worked with SAS software for 16 years. Catherine has written over 15 courses and teaches a variety of advanced statistical topics for SAS including linear and generalized linear mixed models, multivariate statistics, structural equation modeling, cluster analysis, statistical process control, design and analysis of experiments, multiple imputation methods, IML, and IMLPlus programming. She spends as much time in the classroom as possible, and enjoys learning how her students use SAS to solve their everyday problems at work.

SAS09 Introduction to Bayesian Analysis Using SAS® Software (Tuesday, 1:00pm – 3:00pm, Indiana C-D)
Fang Chen, SAS Institute

Bayesian methods have become increasingly popular in recent years in a number of different disciplines. This tutorial provides an introduction to Bayesian methods with applications in the areas of the generalized linear model and survival analysis. The first part of the course provides an overview of Bayesian methodology, including motivation and Bayesian inference, as well as computational methods and convergence diagnostics relevant to the SAS implementation. The second part of the course discusses applications using new capabilities in SAS/STAT software in the GENMOD, LIFEREG and PHREG procedures which are based on Gibbs sampling. Examples will include methods such as linear regression, logistic regression, Poisson regression, Cox regression, parametric survival models, and the piecewise exponential model. Note that these enhanced procedures are available as downloads for the 9.1.3 release of SAS software.

A master's level knowledge of statistics is assumed as well as experience with generalized linear models and survival analysis. Previous exposure to Bayesian methods is useful but not required.

Biography
Dr. Fang Chen is a Senior Research Statistician at SAS Institute Inc. Among his responsibilities are development of Bayesian analysis software and MCMC procedure. Prior to joining SAS Institute, he received his graduate degree from the department of statistics at Carnegie Mellon University.

STATISTICS AND DATA ANALYSIS

S01 Long-Term Value Modeling in the Automobile Industry (Tuesday, 8:00am – 8:30am, Indiana A-B)

Cathy Hackett, Ford Motor Company
Bruce Lund, Ford Motor Company

Businesses often classify their customer base in terms of the customers' predicted long-term value (LTV). LTV may influence marketing strategies, particularly CRM and concern resolution. This paper describes an approach to LTV calculations in the automobile industry. The emphasis of this presentation is on one aspect of LTV which is the choice of "next new-vehicle segment". SAS code related to "next-segment" predictive modeling is outlined. The implementation of this predictive model within a SAS scoring platform is presented.

Biography
Cathy Hackett received a BS in management with an IT concentration from Kaplan University in 2006. In 1984, she joined R.L. Polk & Company where she worked as a programmer/analyst 17 years with responsibilities for direct marketing prospect list development. In 2001, she joined Trillium Teamologies, Inc. of Royal Oak, Michigan where she works as an on-site consultant at Ford Motor Company. During this time she was a prinicipal developer of Ford's database marketing scoring system, called ASAP (automated scoring and assignment process). Recently, Cathy joined Ford's database marketing Analytics Team where she is responsible for campaign evaluations, strategic studies, and model development. She has programmed in SAS for roughly 14 years – beginning with SAS 6.08.
Bruce Lund received a PhD in mathematics from Stanford University in 1972. After graduate school Bruce taught mathematics and statistics at the University of New Brunswick in Canada. In 1979, he joined Ford Motor Company where he worked for 22 years; he worked on applications of database marketing and on the development of the Ford customer database. In 2002 he became the manager of database marketing at Marketing Associates LLC, a Detroit-based Marketing and Technology company. Major clients of Marketing Associates are Ford and DuPont. Five years later Bruce retired from Marketing Associates to become an independent database marketing consultant – with Marketing Associates as his primary client. He has programmed in SAS for roughly 25 years – beginning with SAS 5.28.

S02 Survival Methods for Correlated Time-to-Event Data (Tuesday, 8:30am – 9:00am, Indiana A-B)

James Bena, Cleveland Clinic

The use of product-limit (Kaplan-Meier) estimation and Cox proportional hazards modeling is common when measuring time-to-event data, especially in the presence of censoring. Presenting results from both methods provides the magnitude of loss within the levels of a given variable, and a relative measure of failure risk between the levels. However, since both above methods assume independence of the observations, correlated measurements require adjustment to avoid underestimation of the variance, and overestimation of the statistical significance.

In this paper, we focus on the case of clustered results, where a single observed unit may have several unique observations. The variances of Kaplan-Meier estimates from PROC LIFETEST are adjusted for the clustering using Taylor-series approximation. The standard errors of estimated hazard ratios from Cox proportional hazards models fit using PROC TPHREG are altered using the sandwich estimator, effectively fitting a marginal model. Application of these methods are described using a medical example, assessing the quality of stents implanted in patients with vascular disease.

A SAS macro is described that performs both of these adjusted analyses, and then creates a table using the Kaplan-Meier survival estimates at specified time points and hazard ratios from the marginal Cox proportional hazards model.

Biography
Jim Bena is a lead biostatistician in the Department of Quantitative Health Sciences at the Cleveland Clinic. He serves as a biostatistics consultant for several clinical departments as well as the Cleveland Translational Science Collaborative. Jim has been at the Cleveland Clinic for 5 years after beginning his career at the National Institute for Occupational Safety and Health.

S03 The Difference Between Predictive Modeling and Regression (Tuesday, 9:00am – 9:30am, Indiana A-B)

Patricia Cerrito, University of Louisville

Predictive modeling includes regression, both logistic and linear, depending upon the type of outcome variable. However, as the datasets are generally too large for a p-value to have meaning, predictive modeling uses other measures of model fit. Generally, too, there are enough observations so that the data can be partitioned into two or more datasets. The first subset is used to define (or train) the model. The second subset can be used in an iterative process to improve the model. The third subset is used to test the model for accuracy.

The definition of “best” model needs to be considered as well. In a regression model, the “best” model is one that satisfies the criteria of uniform minimum variance unbiased estimator. In other words, it is only “best” in the class of unbiased estimators. As soon as the class of estimators is expanded, “best” no longer exists, and we must define the criteria that we will use to determine a “best” fit. There are several criteria to consider. For a binary outcome variable, we can use the misclassification rate. However, especially in medicine, misclassification can have different costs. A false positive error is not as costly as a false negative error if the outcome involves the diagnosis of a terminal disease. We will discuss the similarities and differences between the types of modeling.

Biography
Patricia Cerrito, PhD has over 15 years of experience in working with complex databases related to healthcare. She has developed techniques to preprocess the data using SAS. Dr. Cerrito has one text, Introduction to Data Mining with Enterprise Miner and she has just completed a book draft on data mining healthcare databases. Moreover, she has developed instruction books for students who need to do their own preprocessing of the data.

S04 The Over-Reliance on the Central Limit Theorem (Tuesday, 9:30am – 10:00am, Indiana A-B)

Patricia Cerrito, University of Louisville

The objective is to demonstrate the theoretical and practical implication of the central limit theorem. The theorem states that as n approaches infinity, the distribution of the sample mean approaches normality with mean equal to the population mean and variance equal to the population variance divided by n. However, as n approaches infinity, the variance of the mean approaches zero. In practice, the population variance is unknown, and so the sample variance is used to estimate the population distribution. In that case, we assume the format of a t-distribution, which requires the assumption that the population is itself normally distributed. In this presentation, we use data visualization to show some problems that can occur when assuming that n is sufficiently large to assume that the sample mean is normally distributed. In particular, we use PROC SURVEYSELECT to sample data from non-normal distributions to compare the distribution of the sample mean to that of the population mean

Biography
Refer to previous biography.

S05 Imputation of Categorical Missing Data: A comparison of Multivariate Normal and Multinomial Methods

(Tuesday, 10:00am – 10:30am, Indiana A-B)

Finch Holmes, Ball State University

Missing data are a common problem for data analysts in a variety of fields. Researchers have demonstrated that ignoring data points with missing data (listwise or pairwise deletion) can result in biased parameter estimates as well as a reduction in power for hypothesis testing. A number of methods have been developed for imputing values for missing data, some of which have been subsequently shown to be less than optimal (e.g., mean substitution, hot deck imputation). On the other hand, more sophisticated methods for imputing missing values have demonstrated their utility with continuous data. Perhaps foremost among these imputation methods is Multiple Imputation based on data augmentation, which can be carried out using PROC MI in SAS. While this methodology, which is based on the normal distribution, has proven to be very effective for dealing with missing data in the case of continuous variables, there remain questions about how useful it is when the variables in question are categorical in nature. Prior research has found that when this multiple imputation method is used with dichotomous or polytomous data and the results are rounded to fit within the confines of the existing data structure, resulting estimates of proportions are biased. This bias is largely not present when these values are not rounded. A method for imputing missing categorical data responses has been developed and is based on the multinomial distribution. However, the computational burden for this approach is such that it can be difficult to use for a large number of variables. Nonetheless, because it is based upon a true categorical data distribution, it may be superior to the normal based approach when dealing with missing data for dichotomous or polytomous variables. To this point, very little research in the way of direct comparison of the effectiveness of the normal and multinomial approaches to imputing missing categorical data has been published. The current simulation study made such a direct comparison of the estimates of proportions for dichotomous data with missing responses when the normal (with and without rounding) and multinomial based imputation methods were used. The goal of the research was to compare the quality of these proportion estimates for the normal based approach (as carried out by SAS PROC MI), which theoretically is not appropriate, to those based on data imputed using the theoretically more appropriate multinomial distribution (as carried out using functions in the R software program). A variety of missing data structures, sample sizes and population proportion values were studied.

Biography
Holmes Finch is an associate professor of statistics in the Department of Educational Psychology at Ball State University. He has been a SAS user for 20 years, and served as a statistical consultant for 13 year, where he helped clients solve research problems, often with the help of SAS. He now enjoys helping students learn statistics with the help of SAS. In his free time, he runs, swims and cooks for his wife.

S06 A Comparison between correlated ROC Curves Using SAS and DBM MRMC - A Case Study in Image Comparison

(Tuesday, 10:30am – 11:00am, Indiana A-B)

Dachao Liu, Northwestern University

Receiver Operating Characteristic (ROC) analysis is often used in evaluation of a diagnostic test, related to decision making in cost/benefit analysis or medical practice. ROC curves in the diagnosis of multi-reader multi-case setting are correlated. There are ways to compare these correlated ROC curves. In this case study, we have 3 LCD imaging machines or display configurations, and 12 readers. Each reader read 180 cases with 60 being cancer case and 120 normal benign cases. As a case study, this paper will discuss how the data was processed in SAS and how the comparison of ROC curves was made in both SAS and DBM MRMC.

Biography
Mr. Liu has worked as a statistical analyst and programmer after earned Master degree of Statistics. He has been using SAS for more than ten years. Dachao contributed and presented a paper entitled 'How to Use Summary Statistics as Raw Data to Do Basic Statistical Analysis' at MWSUG 2006 conference in Detroit and another paper "Fitting Your Data into the FREQ Procedure and More' at MWSUG 2007 conference in Des Moine and NESUG 2008. He likes doing the presentations at MWSUG, and as a hobby he also exercises to keep fit.

S07 Use of System Function in Creating Macro for Survival Analysis

(Tuesday, 11:00am – 11:30am, Indiana A-B)

Jagannath Ghosh

In this paper, we will show the use of some system functions and will write a macro which will automatically find the variables, create new variables according to study specific requirement. Basically we will be creating two variables (for simplicity) which will show overall survival time and time to disease progression for one particular study and then we will be using survival analysis based on these two variables and censoring information. Please note that the study data will be fake data, however, it will convey the real world example how the survival analysis is performed for various studies. The purpose of writing this paper is to show the power and usefulness of SAS in clinical research (basically studies which requires death and survival information, such as cancer and HIV).

Biography

PHARMACEUTICAL APPLICATION

P01 One-Step Change from Baseline Calculations, and Other DOWLoop Tricks
(Monday, 8:00am – 8:30am, Indiana A-B)
Nancy Brucken, i3 Statprobe

Change from baseline is a common measure of safety and/or efficacy in clinical trials. The traditional way of calculating changes from baseline in a vertically-structured dataset requires multiple DATA steps, and thus several passes through the data. This paper demonstrates how change from baseline calculations can be performed with a single pass through the data, through use of the Dorfman-Whitlock DO- (DOW-) Loop. It also looks at how the DOW-Loop can be implemented to transpose multiple variables onto a single record per BY statement in one pass through the input dataset, thus by-passing one limitation of PROC TRANSPOSE.

Biography
Nancy Brucken has been a SAS user for over 20 years, and has worked in the pharmaceutical industry for 16 years. She holds a bachelor's degree in math and computer science from Marietta College, a master's degree in statistics from the University of Michigan, and is a frequent presenter at regional and local SAS user group conferences.

P02 Inverse Prediction Using SAS Software: A Clinical Application (Monday, 8:30am – 9:00am, Indiana A-B)
Christine Allmer, Mayo Clinic

An important application of regression methodology is in the area of prediction. Oftentimes investigators are interested in predicting a value of a response variable (Y) based on the known value of the predictor variable (X). However, sometimes there is a need to predict a value of the predictor variable (X) based on the known value of the response variable (Y). In such situations, it is improper to simply switch the roles of the response and predictor variables to get the desired predictions i.e., regress X on Y. A method that accounts for the underlying assumptions while estimating or predicting X from known Y is known as inverse prediction. This approach will be illustrated using the PROC CORR, PROC REG, and PROC GPLOT procedures in SAS®. The calculations for the 95% confidence limits for a predicted X from a known Y will also be presented. The macro and its application will be demonstrated using data from clinical / laboratory studies.

Keywords: Inverse Prediction, Regression, CORR, REG, GPLOT

Biography
Cristine Allmer earned a Bachelor of Science degree in statistics with a minor in biology from North Dakota State University in 1996. She has worked for the last 12 years as a statistical programmer analyst in the Mayo Clinic Cancer Center Statistics department. Cristine is an experienced SAS programmer. Her experience includes: data manipulation, statistical analysis, SAS GRAPH, survival analysis, and clinical trials set-up and conduct.

P03 Global Clinical Data Classification: A Discrement Analysis (Monday, 9:00am – 9:30am, Indiana A-B)
A.C. Ramamurthy, Covance

The variation in data across geographies and over time has not been well documented. The data set to appropriately make this analysis requires consistent global methods and consistent global calibration, which is difficult to document. Covance Central Laboratories operates with a single global method and with consistent global method calibration.
Global population data sets were analyzed using Discriminant Analysis to document the differences in the clinical trial populations around the world. Analysis performed using Average of Normals (AON), 99 and 95 % non -parametric truncated data show minimal geographical differences.

Biography
Refer to previous biography.

P04 A Multivariate Ranking Procedure to Assess Treatment Effects (Monday, 9:30am – 10:00am, Indiana A-B)
Alan Y Chiang, Eli Lilly and Company
Grace Li, Eli Lilly and Company
Ying Ding, University of Michigan
Ming-Dauh Wang, Eli Lilly and Company

In early phase clinical studies, it is often difficult to assess the effects of a set of biomarker variables and/or clinical endpoints when the individual variables do not appear to have statistically significant effects. To address this situation, we propose a method of U-scores applied to subsets of multivariate data. A SAS® macro is developed and we illustrate the usefulness of this approach through simulations, considering various combinations of correlations and underlying distributions, and compare its statistical power with the existing tests: Hotelling's T^2 and nonparametric rank-sum tests. Finally we apply this approach in a Phase I clinical study to help assess the treatment effects of an investigational drug on rheumatoid arthritis.

Biography
Alan is Principal Research Scientist and musculoskeletal and cardiovascular lead for Phase 1 and Phase 2 clinical trials at Eli Lilly. He is an active SAS user and has contributed to SAS publications. He was an invited speaker at several international and local conferences, including joint statistics meetings, safety pharmacology society meeting and midwest biopharmaceutical statistics workshop. Alan received his doctoral degree in statistics from University of Wisconsin at Madison in 1999.

P05 Data Mining and Analysis to Lung Disease Data (Monday, 10:00am – 10:30am, Indiana A-B)
Guoxin Tang, University of Louisville (Student Scholar)

Objective: To examine the relationship between patient outcomes and conditions of the patients undergoing different treatments for lung disease.

Method: SAS Enterprise Guide was used to obtain Lung disease data from the NIS (National Inpatient Sample) by using CATX and RXMATCH statements. We first concatenate all 15 columns of diagnosis codes into one text string using the CATX statement. The RXMATCH looks for the initial code of '162' that finds all patients with a diagnosis of lung disease. The ICD 9 code of 162 means malignant neoplasm of trachea, bronchus, and lung. Kernel Density Estimation was used to examine the lung disease by Age, Length of Stay and Total Charges, which show the relationships among these outcomes by using data visualization. Then we use SAS Text Miner to investigate relationships in co-morbid diagnoses. To investigate, we used SAS Text Miner to define clusters of diagnoses. Then we can inspect the results by defining a severity measure using text analysis.
Results: After filtering by lung disease, there were more than 8000 observations in the data. The examination reveals that there was certainly a relationship between lung disease and Age, Length of Stay and Total Charge. Patients with lung diseases increase inpatient events starting at age 35, accelerating at age 42, and decreasing at 74. They have a higher probability of a stay of 4 days which indicating that there was a higher probability of higher cost.
Conclusion: By using the Kernel Density Estimation and Text Miner, we obtained the statistical information about the Age, Length of Stay and Total Charges for patients with lung diseases. Cluster analysis also gave us five diagnose clusters with ranking of severity by severity measure.

P06 Mastectomy versus Lumpectomy in Breast Cancer Treatment (Monday, 10:30am – 11:00am, Indiana A-B)

Beatrice Ugiliweneza, University of Louisville (Student Scholar)

Objective: To extract information and analyze the cost of mastectomy and lumpectomy as breast cancer treatments using SAS.
Methods: The data used are from the National Inpatient Sample (NIS). It contains a stratified sample of all hospital patient visits from 37 participating states. First, we extract breast cancer cases among all the data and then focus on those treated by mastectomy and lumpectomy. Then, data analysis techniques are used to examine and compare these two major surgical treatments. We used linear models in SAS/STAT to examine the data, and also PROC GPLOT methods.
Results: For the data used, the study shows that the cost of mastectomy treatment is lower than the cost of lumpectomy treatment. Moreover, the analysis shows that mastectomy is more used than lumpectomy.
Conclusion: SAS is a good tool for statistical data analysis, data mining and data visualization. Further study will include claims data to investigate longitudinal patient outcomes.

P07 Blinding Sponsors or Open Label Studies: Challenges and Solutions

(Monday, 11:00am – 11:30am, Indiana A-B)

Zhengping Ma, Eli Lilly and Company
Jenny Zhou, Eli Lilly and Company

Although double blinding (blind treating physicians and patients) is the optimal approach to minimize the bias in clinical research, it's not always feasible to conduct double blind studies. For open label studies, it's often desirable to blind the study sponsors to reduce potential bias and increase credibility of trial results. However, open label studies usually create some challenges to blind sponsors. In this paper, we go over various types of CRF data that could unblind sponsors and then propose some methods to scramble the data in order to blind sponsors. We implement the proposed methods with three SAS macros and also provide a real example for illustration.

In some therapeutic areas, although desirable, it can be difficult, sometimes even not feasible or ethical, to conduct a double blind trial. To minimize potential bias due to knowing treatment level aggregate data while trial is ongoing, it is important to blind/scramble the database during the course of trial, especially if the trial is for the purpose of registration. We begin this paper by introducing various kinds of data collected on the CRF that can unblind, continue with a proposal of several methods that can be used separately, or combined, to blind the CRF data, and implement these methods with three SAS macros. In addition, we will demonstrate with examples of how these macros can be used to serve the blinding purpose in a clinical trial.

Biography
Zhengping received PhD from Purdue university in 2004 and have worked at Eli Lilly as a statistical analyst supporting Neuroscience. Prior to joining Lilly, He worked as a system analyst at the Seurat Company from 1999 to 2002.
Ms. Zhou received her master's degree from Virginia Tech in 2003. She currently works at Eli Lilly as a statistical analyst supporting the oncology product development. Prior to joining Lilly, She worked as an analysis programmer at PRA International and as a statistical consultant at MedFocus.

P08 Confidence Interval Calculation for Binomial Proportions (Monday, 11:30am – 12:00pm, Indiana A-B)

Keith Dunnigan, Statking Consultaing, Inc.

Some of the most common and first learned calculations in statistics involve estimating proportions and calculating confidence intervals. The Wald method, which is easy to calculate and common to most statistics textbooks, has significant issues for a large range of n and p. The Wald method will be presented and contrasted to the Wilson Score method and exact Clopper Pearson method. SAS code will be presented for calculating confidence intervals by each of the three methods. In addition, SAS code for sample size calculation by the Wald and Wilson Score methods will be given. Finally illustrative examples will be presented.

Biography
Keith Dunnigan works as a Statistician at Statking Consulting in St. Louis Missouri where he is primarily involved in research and development for pharmaceutical and medical device clients. His past background has involved Statistical and SAS Consulting in pharmaceutical science, medical devices, medicine, psychology, economics, engineering, and marketing research work applied in industry, government, and academia.

TUTORIALS & SOLUTIONS

T04 SAS® Tips, Tricks and Techniques Views (Monday, 9:00am – 10:00am, Indiana G)

Kirk Paul Lafler, Software Intelligence Corporation, Spring Valley, CA (Invited speaker)

The base-SAS® System offers users the power of a comprehensive DATA step programming language, an assortment of powerful PROCs, a macro language that extends the capabilities of the SAS System, and user-friendly interfaces including the SAS Display Manager. This presentation highlights numerous SAS tips, tricks and techniques using a collection of proven code examples related to effectively using the SAS Display Manager and its many features; process DATA step statements to handle subroutines and code libraries; deliver output in a variety of formats; construct reusable code; troubleshoot and debug code; and an assortment of other topics.
This paper illustrates several tips, tricks and techniques related to the usage of the Base-SAS software. We will examine a variety of topics including SAS System options, DATA step programming techniques, logic conditions, output delivery and ODS, macro programming, and an assortment of other techniques.

Biography
Kirk Paul Lafler is consultant and founder of Software Intelligence Corporation and has been programming in SAS since 1979. As a SAS Certified Professional and SAS Institute Alliance Member (1996 – 2002), Kirk provides IT consulting services and training to SAS users around the world. Kirk has written four books including PROC SQL: Beyond the Basics Using SAS *(SAS Institute. 2004), and more than two hundred peer-reviewed articles in professional journals and SAS User Group proceedings. He has also been an Invited speaker at more than two hundred SAS user group conferences and meetings at the International, Regional and Local level. His popular SAS Tips column, "Kirk's Korner of Quick and Simple Tips", appears regularly in the BASAS, HASUG, SANDS, SAS, SESUG, and WUSS Newsletters and Web sites.*

T03 PROC REPORT: Compute Block Basics – Part I (Monday, 2:00pm – 3:00pm, Indiana G)

Art Carpenter, California Occidental Consultants (Invited Speaker)

One of the unique features of the REPORT procedure is the Compute Block. Unlike most other SAS procedures, PROC REPORT has the ability to modify values within a column, to insert lines of text into the report, to create columns, and to control the content of a column. Through compute blocks it is possible to use a number of SAS language elements, many of which can otherwise only be used in the DATA step. While powerful, the compute block can also be complex and potentially confusing. This tutorial introduces basic compute block concepts, statements, and usages. It discusses a few of the issues that tend to cause folks consternation when first learning how to use the compute block in PROC REPORT.
This paper is being presented in conjunction with the Hands-on Workshop PROC REPORT: Compute Block Basics – Part II Practicum.

Biography
Art Carpenter's publications list includes four books, and numerous papers and posters presented at SUGI, SAS Global Forum, and other user group conferences. Art has been using SAS® since 1976 and has served in various leadership positions in local, regional, national, and international user groups. He is a SAS Certified Advanced ProgrammerTM and through California Occidental Consultants he teaches SAS courses and provides contract SAS programming support nationwide.

T01 Advanced PROC REPORT: Getting Your Tables Connected Using Links (3:00pm – 4:00pm, Indiana G)

Art Carpenter, California Occidental Consultants (Invited Speaker)

Gone are the days of strictly paper reports. Increasingly we are being asked to render our tables and reports using a variety of electronic file types that can be browsed and read using our computers. Besides the cost savings associated with the purchase of paper, paperless reports also minimize the costs associated with the printing and distribution of the reports. Another, often overlooked and potentially more important, side benefit of the paperless report is the increased availability of linked graphs, reports and tables. Navigation of the paper report is dependent on the table of contents, a strong index, and visual aids such as captions and footnotes; however in paperless reports we can easily jump from one table to its supporting and dependent tables with the click of a mouse. Easily that is if we have created the necessary links. Within PROC REPORT and with the help of the Output Delivery System, there are a number of techniques that we can use to build and maintain these links. Individually these techniques are not complicated, however we do need to be aware of the syntax, alternative approaches, and issues associated with the automation of the process that coordinates the links between tables.

Biography
Refer to previous biography.

T07 Using Direct Standardization SAS® Macro for a Valid Comparison in Observational Studies Process (Monday, 2:00pm – 2:30pm, Indiana A-B)

Daojun Mo, Eli Lilly and Company

Observational studies are usually imbalanced in the factors associated with the outcome measures. Simply presenting the descriptive results or the P values from an unadjusted between-group comparison could lead to a biased conclusion. Direct standardization is one of the methods for binary data that reveal the valid association between comparison groups. Direct standardization is often implemented in a spreadsheet by copying and pasting the data. This becomes tedious in a study that explores multiple outcome measures. We thus developed a SAS® macro that is adaptable to many types of observational studies which consider binary outcome measures. Examples are given to demonstrate the concept of direct standardization, and how to use the macro.

Biography
Daojun Mo is currently working with Lilly as a statistician. He got his MD (medical degree) in 1991 from Tongji Medical School, China and his MSc in Biostatistics from McGill University in 1999, Canada. He previously presented a topic in 2001 MWSUG - How to appropriately plot Kaplan-Meier curves in different clinical trial scenarios by using a SAS macro. This time he is presenting a method of direct standardization for a valid comparison in observational trials by using another SAS macro.

T02 Exploring Efficient Ways to Collapse Variables (Monday, 2:30pm – 3:00pm, Indiana A-B)
Yubo Gao, University of Iowa Hospitals and Clinics

There are many situations where we would want to find the frequency distributions of discrete results. Usually, more than one method is available in SAS. With today's computer technology, data files under a million records are not a problem. But if the data file is much larger than that, such as those present in major credit card/retailers companies and university/hospitals, efficient methods should be sought in order to reduce resource utilization, such as time expended. Based on a frequency distribution question posted at the SAS-L community, this paper first reviewed the methods suggested by the SAS-L subscribers, and then proposed two other methods. Next, a performance comparison among these methods in terms of CPU time usage was made by solving an expanded example, the comparison showed that the ratios of CPU time usage between the slowest method and the fastest one is 12, and the result may serve as a benchmark when solving similar problems.

Biography
Yubo Gao studied Industrial Engineering at Auburn University in Alabama, where he received his PhD degree. He worked for Hebei Institute of Technology of China as an associate professor for several years, where his major responsibilities were to teach and do research about optimization/statistics courses/projects. Now he is a Database Administrator in the Orthopaedic Surgery Department of University of Iowa Hospitals and Clinics, where he is doing statistical analyses for various projects using SAS.

T06 Reduced Error Logistic Regression: Completely Automated Reduced Error Data Mining in SAS
(Monday, 3:00pm – 3:30pm, Indiana A-B)
Daniel Rice, Rice Analytics

Reduced Error Logistic Regression (RELR) is a new 100% automated machine learning method that is fully implemented in SAS software and was featured at the SAS M2007 Conference. RELR "is not your grandfather's logistic regression", as it can reduce error significantly compared to other predictive modeling methods. RELR's automation arises because it has no arbitrary or validation-sample parameters and it reduces error automatically. RELR's error reduction results from symmetrical constraints consistent with Extreme Value properties of the Logit error. These constraints also lead to a prior ordering of the importance of variables, so the vast majority of variables are excluded to avoid dimensional curse. Hence, RELR can solve very high dimensional problems quite efficiently. RELR allows higher order polynomial terms and interactions to whatever order specified, but can give very parsimonious solutions with reasonable stability. This paper introduces RELR by comparing it to another machine learning method based upon logistic regression: Penalized Logistic Regression (PLR). Results from difficult predictive modeling problems will then be presented to show that RELR can yield significantly better fit accuracy and less overfitting compared to Penalized Logistic Regression, Support Vector Machines, Decision Trees, Partial Least Squares, Neural Networks, and Forward-Select Logistic Regression. It will be seen that RELR's advantage is most apparent in abundant error problems such as those with smaller sample segments and/or large number of correlated variables.

Biography
Daniel M. Rice, Ph.D. is the President of Rice Analytics, a SAS Alliance Partner firm that specializes in Reduced Error Logistic Regression - a new form of regression that is associated with reduced error. Since 1986, Dr. Rice has been providing advanced statistical consulting to improve business outcomes for industry leading Fortune 100 companies in biomedical imaging, health, financial, media, information technology, consumer packaged goods and marketing applications. Dan has a Ph.D. in Experimental Psychology from the University of New Hampshire and Postdoctoral training in Applied Statistics at the University of California-Irvine. Dan has previously been a professor at the University of California-Irvine and the University of Southern California and has academic publications in the areas of cognitive psychology, cognitive neuroscience, psychometrics and statistics. He is a previous recipient of an Individual National Research Service Award from the National Institutes of Health.

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Monday Casino Night

The MWSUG Casino will include all of the games played in Las Vegas – Craps, Blackjack, Roulette, 3-Card Poker & Money Wheel. In addition -- for you avid Poker players – we will also have a Texas Hold'em Poker area. Each of the various casino games will be played using all Las Vegas rules (with true Las Vegas payouts). And even better than Las Vegas:

- You won't use your own cash to play.
- You don't have to be experienced with the casino games.
- You will automatically be entered to win our Grand Prize (just by attending).
- You can increase your chances to win our Prizes by winning at the tables.

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EXHIBIT AND DEMO ROOM

Be sure to visit the popular Exhibit and Demo Room in the Indiana E on the first floor. Hours are Monday from 9:00 a.m. to noon and 1:00 to 6:00 p.m. and Tuesday from 9:00 a.m. to noon. SAS and JMP staff will be on hand to discuss and demonstrate the latest software and services available. Stop by the demo stations to meet developers, demos of solutions, or to ask questions about various software solutions. Talk with representatives from SAS and JMP service areas such as Publications, Certification and Training, Education, Alliance Partners, Technical Support, and Executive and User Events. While visiting the Demo Room, be sure to register for valuable giveaways.

In addition, the Publications booth in the Demo Area will offer a 20% discount on all SAS documentation ordered at MWSUG 19. Stop by the booth to browse the latest in SAS documentation.

SAS USER APPRECIATION RECEPTION

Join us on Monday afternoon from 4:00 to 6:00 pm in the SAS Demo and Exhibit room for a SAS User Appreciation Reception. Enjoy complimentary food and beverages while you visit with conference attendees and SAS staff.

USEFUL CONFERENCE INFORMATION

Speakers and Volunteers meeting:
All the speakers and volunteers are welcome to attend the meeting. It will be held on Sunday from 4:00 to 4:30 pm in the Marriott 3 room on the 2nd floor.

First timers meeting:
All may attend this special welcome to first-time attendees. It will be held on Sunday from 4:30 to 5:00 pm in the Marriott 3 room on the 2nd floor. Bring all of your questions.

Opening Session on Marriott 5, 7-8pm on Sunday:
Listen for special announcements and hear Stuart Nisbet, our Keynote speaker from SAS R&D. Following the opening session is a reception and mixer in Marriott 1-4. You'll find 2 drink tickets for this event in your conference bag – good for your choice of beer, wine, soft drinks or water. Plenty of food will be available!

Continental Breakfast will be served on both Monday and Tuesday morning beginning at 7:30 am.

Monday Luncheon:
Monday lunch is included in your conference registration. Join us with a special keynote presentation by SAS co-founder, John Sall. His presentation tile is "Putting JMP and SAS Together".

Monday Dinner and Casino Night: Dinner is included in your conference registration and will be held in Indiana F & G. Following the dinner, there will be a band for your entertainment as well as Las Vegas style Casino tables to test your computing skills in beating the odds.

Tuesday Lunch:
Tuesday lunch is included in your conference registration. You may choose to sit with "Birds of a Feather" at a designated BOF table to enjoy a lively discussion around a specific topic.

Closing Session: Come bid farewell to your colleagues at the closing ceremonies on Tuesday at 4 pm at Indiana G. Listen to final announcements and be eligible for prizes, and meet next year's Conference Committee.

Emergency Messages during the Conference: If you need to be reached, have your contact call Indianapolis Marriott Downtown and leave a message. Be sure that the caller identifies you as an MWSUG conference attendee. An MWSUG contact will be paged and every attempt will be made to find you.

Job Openings / **Positions Wanted:** There will be a 3-ring binder available for job openings or position wanted announcements. This notebook will be available near the registration desk. The announcements must be in an 8.5 x 11 plastic sleeve that can be placed in the notebook. Business cards or flyers may be included provided they are in an 8.5 x 11 plastic sleeve. There is no charge for placing announcements in the notebook. We reserve the right to remove announcements placed elsewhere at the conference.

Thanks for attending this year's conference!
See You Next Year in Cleveland, October 11-13, 2009.
Conference Co-chairs: George Hurley, Matt Karafa