



**NEBSUG**  
Nebraska SAS®  
Users Group

# NEBRASKA SAS USERS GROUP 2013 ONE-DAY CONFERENCE

MAY 21, 2013

Scott Conference Center

6450 Pine St, Omaha NE 68106



**Conference Chair: Robin High** --- University of Nebraska Medical Center

**John Xu** --- 1ST Consulting LLC

Sponsors:



## Message from Co-Chairs

Dear Fellow SAS Users,

We are excited to announce that Nebraska SAS Users Group is restarting. As a starting point, we will have a full day conference on Tuesday, May 21 2013.

To make our conference a success, we have selected a team of invited speakers. Our keynote speaker, Kirk Lafler, will present *What's Hot, What's Not - Skills for SAS® Professionals* at the Opening Session. It will be followed by 2 concurrent sessions. In addition to Kirk, we have invited Peter Eberhardt and Andrew T. Kuligowski, 2 well-known SAS consultants and active member of SAS community. They will present a total 9 papers throughout the day. Furthermore, we have Kathleen Kiernan from SAS Institute, Chris Kirchberg from JMP, and your co-chair Robin High presenting 4 statistics papers.

Additionally, we have scheduled a lunch time volunteer meeting to discuss future Nebraska SAS Users group activities. You are invited to participate!

We have selected Scott Conference Center to host our 2013 conference. Scott Conference Center is the 2011, 212 winner of B2B Omaha Magazine's Best of B2B Award. We are confident that we have a great facility and catering services. Please note that there will be plenty of free on-site parking.

Looking forward to seeing you at SAS Conference!

Robin High & John Xu

NEBSUG 2013 Conference Co-chairs



Meet fellow SAS® users

Learn from the pro's

Scholarship for students

2 concurrent sessions with

13 presentations!

## Conference Information:

This one-day conference will provide an opportunity to enhance your SAS® skills and improve your understanding of the SAS® System. There will be 2 concurrent sessions throughout the day -- all for a registration fee of only \$99, with lunch included! Registration and Scholarship information are on the last 2 pages of this announcement.

**Date:** Tuesday, May 21, 2013

**Location:** Scott Conference Center (See map and direction on next page)  
6450 Pine St., Omaha NE 68106

**Registration Fee:** \$99 for Early Registration by Friday, May 10, 2013  
(Only \$29 for student early registration)  
\$139 for Late and On-site Registration after May 10, 2013

**Online Registration:** Registration is available online start Monday, March 25, 2013 at:  
<https://www.regonline.com/NEBSUG2013>

**Cancellation Policy:** Refund with a \$20 processing fee if requested by May 10, 2013. No refund after that. Substitution is accepted with advance notice. There is no charge for substitution.

**SAS Classes** 4 pre-conference SAS training classes are scheduled on 5/16/13 and 5/17/13. For details, see SAS Class Information Page in this announcement.

**Scholarship:** Students may apply scholarship for professional SAS training classes by completing the application form located at the end.

**Check in:** Start at 7:45 AM on May 21, 2013.

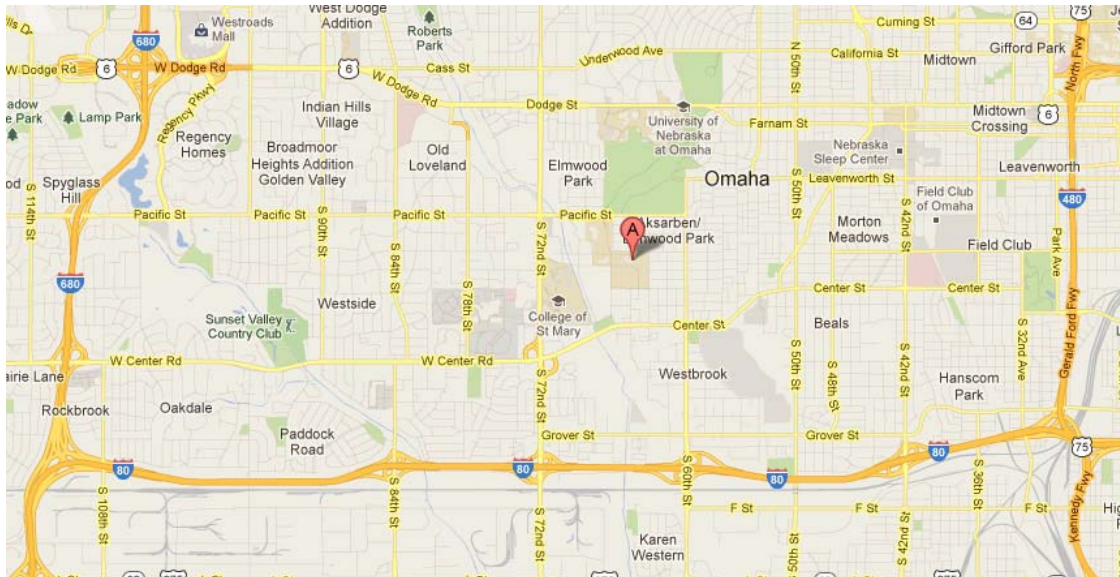
**Schedule:** The Opening Session/Keynote will begin at 8:15 AM. 2 concurrent sessions will start at 9:10 AM. Lunch served at noon. The afternoon sessions will start at 1:10 PM. The closing session will start at 4:10 PM and will conclude at 4:30 PM. Each presentation will last for 50 minutes.

**Lunch:** Lunch on site is included in your registration fee.

**Hotel:** Courtyard Omaha Aksarben Village  
1625 South 67th Street  
Omaha, NE 68106  
(402) 951-4300  
\* Only one block away. Ask for Scott Conference Center contract rate.  
You may use other nearby hotels.

**Direction:**  
From the South: From I-80 and 72nd Street  
Head North on 72nd Street  
(left if coming from the west; right if coming from the east)  
Turn Right on Pine Street for .6 Miles  
Continue past the lights on 67th Street  
Scott Conference Center is on Your Left

From the West From I-680 & Pacific Street, go East to 67th Street  
Turn Right on 67th Street  
Continue to Stoplight and Turn Left onto Pine Street  
Scott Conference Center is on Your Left



**Parking:** Parking in Lot 9 across from The Scott Conference Center is Complimentary

**Questions:** For an answer, just e-mail your question to Conference Chair:  
John Xu: [johnxu@1st-consulting.com](mailto:johnxu@1st-consulting.com) (515) 778-4093(c)

## Tentative Schedule [number in () is the index in abstract section]

Time	Session 1 (Center Room)	Session 2 (East Room)
7:45 AM – 8:15 AM	<b>Check In</b>	
8:15 AM – 9:00 AM	<b><i>What's Hot, What's Not – Skills for SAS® Professionals</i></b> Kirk Paul Lafler (1)	
9:10 AM – 10:00 AM	<b><i>Google® Search Tips and Techniques for SAS® and JMP® Users</i></b> Kirk Paul Lafler (2)	<b><i>An Introduction to Generalized Linear Mixed Models using SAS PROC GLIMMIX</i></b> Kathleen Kiernan (10)
10:10 AM – 11:00 AM	<b><i>Using INFILE and INPUT Statements to Introduce External Data into SAS® System</i></b> Andrew Kuligowski (9)	<b><i>The SAS® Hash Object: It's Time To .find() Your Way Around</i></b> Peter Eberhardt (6)
11:10 AM – 12:00 PM	<b><i>Top Ten SAS® Performance Tuning Techniques</i></b> Kirk Paul Lafler (3)	<b><i>Tips and Strategies for Mixed Modeling with SAS/STAT® Procedures</i></b> Kathleen Kiernan (11)
12:00 AM – 1:10 PM	<b>Lunch Break</b>  NEBSUG Volunteer Meeting John Xu & Robin High at 12:30 pm	
1:10 PM – 2:00 PM	<b><i>Why the Bell Tolls 108 times? Stepping Through Time with SAS®</i></b> Peter Eberhardt (4)	<b><i>Parsing Useful Data Out of Unusual Formats Using SAS®</i></b> Andrew Kuligowski (8)
2:10 PM – 3:00 PM	<b><i>The Building Blocks of SAS® Datasets – S-M-U (Set, Merge, and Update)</i></b> Andrew Kuligowski (7)	<b><i>Models for Ordinal Response Data</i></b> Robin High (12)
3:10 PM – 4:00 PM	<b><i>The Armchair Quarterback: Writing SAS® Code for the Perfect Pivot (Table, That Is)</i></b> Peter Eberhardt (5)	<b><i>Exploratory Data Analysis and Dynamic Graphics ----JMP</i></b> Chris Kirchberg (13)
4:10 PM – 4:30 PM	<b>Closing Session/ Door Prize Giveaway</b>	

### Pre-conference SAS Training Classes:

Taught by Kirk Lafler

5/16/13 Thursday AM	<b><i>PROC SQL Programming: The Basics and Beyond</i></b>
5/16/13 Thursday PM	<b><i>Output Delivery System: The Basics and Beyond</i></b>
5/17/13 Friday AM	<b><i>Building Reusable Tools with the SAS® Macro Language</i></b>
5/17/13 Friday PM	<b><i>Advanced SAS® Programming Techniques</i></b>

# Don't miss **MWSUG 24** next year, in Columbus, Ohio September 22-24, 2013



## **Practical Education for the Real World**

Sharpen your SAS<sup>®</sup> skills by attending presentations and demonstrations.  
Take away knowledge, insights, and ideas you can use back at the office.  
Get acquainted with the latest in technology.

## **Learn from the Best**

Meet, watch, and listen to the superstars of SAS<sup>®</sup>.  
Discuss the latest software enhancements with SAS<sup>®</sup> software developers.  
Attend hands-on workshops led by SAS<sup>®</sup> experts.

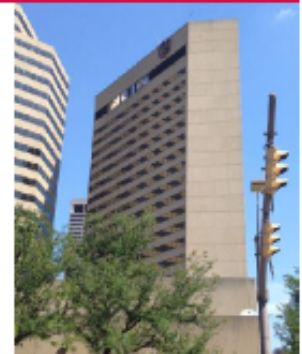
## **Network with Other SAS<sup>®</sup> Users**

Connect with and learn from other SAS<sup>®</sup> and JMP users like yourself.  
Make new contacts with peers in your industry.  
Discover how they are using SAS<sup>®</sup> or JMP to solve their business challenges.

## **Sheraton Columbus Hotel at Capital Square**

**75 East State Street, Columbus, Ohio 43215**

Conveniently located across the street from the Ohio Statehouse, we're close to all the downtown attractions. The Theatre and Arena Districts are within walking distance, as is the German Village neighborhood. And Ohio State University is just 3 miles to the north.



Columbus, Ohio  
Sept 22-24, 2013

## **Conference Co-chairs:**

George J. Hurley  
The Hershey Company  
ghurley@hersheys.com

Matthew Karafa  
Cleveland Clinic  
karafam@ccf.org

**The Buckeye State is nuts about SAS<sup>®</sup>!**



# Presentation Abstracts

**Keynote Speaker: Kirk Paul Lafler**

Software Intelligence Corporation

## **What's Hot, What's Not - Skills for SAS® Professionals**

**ABSTRACT:** As a new generation of SAS® user emerges, current and prior generations of users have an extensive array of procedures, programming tools, approaches and techniques to choose from. This presentation identifies and explores the areas that are hot and not-so-hot in the world of the professional SAS user. Topics include Enterprise Guide, PROC SQL, JMP, PROC REPORT, Macro Language, ODS, DATA step programming techniques such as arrays and hashing, sasCommunity.org®, LexJansen.com, JMP®, and Output Delivery System (ODS).

### **(2) Google® Search Tips and Techniques for SAS® and JMP® Users**

Kirk Paul Lafler - Software Intelligence Corporation

**ABSTRACT:** Google (www.google.com) is the worlds most popular and widely-used search engine. As the premier search tool on the Internet today, SAS® and JMP® users frequently need to identify and locate SAS and JMP content wherever and in whatever form it resides. This paper provides insights into how Google works and illustrates numerous search tips and techniques for finding articles of interest, reference works, information tools, directories, PDFs, images, current news stories, user groups, and more to get search results quickly and easily.

### **(3) Top Ten SAS® Performance Tuning Techniques**

Kirk Paul Lafler - Software Intelligence Corporation

**ABSTRACT:** The Base-SAS® software provides users with many choices for accessing, manipulating, analyzing, and processing data and results. Partly due to the power offered by the SAS software and the size of data sources, many application developers and end-users are in need of guidelines for more efficient use. This presentation highlights my personal top ten list of performance tuning techniques for SAS users to apply in their applications. Attendees learn DATA and PROC step language statements and options that can help conserve CPU, I/O, data storage, and memory resources while accomplishing tasks involving processing, sorting, grouping, joining (merging), and summarizing data.

### **(4) Why the Bell Tolls 108 times?**

Peter Eberhardt, Fernwood Consulting Group Inc, Toronto, ON, Canada

**ABSTRACT:** For many SAS® programmers, new or even advanced, the use of SAS date and datetime variables is often very confusing. This paper addresses the problems that the most of programmers have. It starts by looking at the basic underlying difference between the data representation and the

visual representation of date, datetime and time variables. From there it discusses how to change data representations into visual representations through the use of SAS formats. Since date manipulation is core to many business process, paper also discusses date arithmetic first by demonstrating the use of simple arithmetic to increment dates; then by moving on to SAS functions which create, extract and manipulate SAS date and datetime variables. Finally, paper demonstrates the use of the %sysfunc macro function and the %let statement to present date, datetime and time variables. This paper is introductory and focuses on new SAS programmers, however, some advanced topics also covered.

## **(5) The Armchair Quarterback: Writing SAS® Code for the Perfect Pivot (Table, That Is)**

Peter Eberhardt, Fernwood Consulting Group Inc, Toronto, ON, Canada

**ABSTRACT:** "Can I have that in Excel?" This is a request that makes many of us shudder. Now your boss has discovered Excel pivot tables. Unfortunately, he has not discovered how to make them. So you get to extract the data, massage the data, put the data into Excel, and then spend hours rebuilding pivot tables every time the corporate data are refreshed. In this workshop, you learn to be the armchair quarterback and build pivot tables without leaving the comfort of your SAS® environment. In this workshop, you learn the basics of Excel pivot tables and, through a series of exercises, you learn how to augment basic pivot tables first in Excel, and then using SAS. No prior knowledge of Excel pivot tables is required.

## **(6) The SAS® Hash Object: It's Time To .find() Your Way Around**

Peter Eberhardt, Fernwood Consulting Group Inc, Toronto, ON, Canada

**ABSTRACT:** "This is the way I have always done it and it works fine for me." Have you heard yourself or others say this when someone suggests a new technique to help solve a problem? Most of us have a set of tricks and techniques from which we draw when starting a new project. Over time we might overlook newer techniques because our old toolkit works just fine. Sometimes we actively avoid new techniques because our initial foray leaves us daunted by the steep learning curve to mastery. For me, the PRX functions and the SAS® hash object fell into this category.

In this workshop, we address possible objections to learning to use the SAS hash object. We start with the fundamentals of the setting up the hash object and work through a variety of practical examples to help you master this powerful technique.

## **(7) The Building Blocks of SAS® Datasets - S-M-U (Set, Merge, and Update)**

Andrew T. Kuligowski

**ABSTRACT:** S-M-U. Some people will see these three letters and immediately think of the abbreviation for a private university and associated football team in Texas. Others might treat them as a three-letter word, and recall a whimsical cartoon character created by Al Capp many years ago. However, in the world of the SAS® user, these three letters represent the building blocks for processing SAS datasets through the SAS DATA step. S, M, and U are first letters in the words SET, MERGE, and UPDATE - the 3 commands used to introduce SAS data into a DATA step.

This presentation will discuss the syntax for the SET, MERGE, and UPDATE commands. It will compare and contrast these 3 commands. Finally, it will provide appropriate uses for each command, along with basic examples that will illustrate the main points of the presentation.



## **(8) Parsing Useful Data Out of Unusual Formats Using SAS®**

Andrew T. Kuligowski

**ABSTRACT:** Most "Introduction to Programming" courses will include a section on reading external data; the first assumption they make will be that the data are stored in some sort of documented and consistent format. Fortunately, in the "real world", a lot of the data we deal with has the same basic assumption of occurring in a documented, consistent format - a lot of it, but not all of it.

This presentation will address some techniques that can be used when we are not dealing with cleanly formatted data, when the data we want is in a less-than-ideal format, perhaps intermingled or seemingly buried with unnecessary clutter. It will discuss the principles of using SAS® to parse a file to extract useful data from a normally unusable source. This will be accomplished by citing examples of unusual data sources and the SAS Code used to parse it

## **(9) Using INFILE and INPUT Statements to Introduce External Data into the SAS® System**

Andrew T. Kuligowski

**ABSTRACT:** The SAS® System has numerous capabilities to store, analyze, report, and present data. However, those features are useless unless that data is stored in, or can be accessed by, the SAS System. This presentation is designed to review the INFILE and INPUT statements. It has been set up as a series of examples, each building on the other, rather than a mere recitation of the options as documented in the manual. These examples will include various data sources, including DATALINES, sequential files, and CSV files.

## **(10) An Introduction to Generalized Linear Mixed Models using SAS® PROC GLIMMIX**

Kathleen Kiernan, SAS Institute

**ABSTRACT:** This talk describes using the GLIMMIX procedure for fitting models to non-normal or normal data with correlations or nonconstant variability. PROC GLIMMIX extends the SAS mixed model tools in a number of ways. For example, it

- models data from non-Gaussian distributions
- implements low-rank smoothing based on mixed models
- provides new features for LS-means comparisons and display
- enables you to use SAS programming statements to compute model effects, or to define link and variance functions
- fits models to multivariate data in which observations do not all have the same distribution or link

Applications of the GLIMMIX procedure include estimating trends in disease rates, modeling counts or proportions over time in a clinical trial, predicting probability of occurrence in time series and spatial data, and joint modeling of correlated binary and continuous data.

This talk describes generalized linear mixed models and how to use the GLIMMIX procedure for estimation, inference, and prediction. The talk will focus on these areas:

- What is PROC GLIMMIX and how do I get access to the procedure?

- What does the procedure do and how does it compare to PROC MIXED?
- What are the new features in PROC GLIMMIX?
- Are there any pitfalls in using PROC GLIMMIX?

## (11) Tips and Strategies for Mixed Modeling with SAS/STAT® Procedures

Kathleen Kiernan, SAS Institute

**ABSTRACT:** Inherently, mixed modeling with SAS/STAT procedures, such as GLIMMIX, MIXED, and NLMIXED, is computationally intensive. Therefore, considerable memory and CPU time can be required. As a result, the default algorithms in these procedures might fail to converge for some data sets and models. This paper provides recommendations for circumventing memory problems and reducing execution times for your mixed modeling analyses. This paper also shows how the new HPMIXED procedure can be beneficial for certain situations, as with large sparse mixed models. Lastly, the discussion focuses on the best way to interpret and address common notes, warnings, and error messages that can occur with mixed models.

## (12) Models for Ordinal Response Data

Robin High, University of Nebraska Medical Center

**ABSTRACT:** The various types of computations available with response data having ordered categories with SAS procedures are not well known. In addition to PROCs LOGISTIC, GLIMMIX, GENMOD, several types of ordinal models can be evaluated through programming statements entered into PROC NLMIXED including the partial proportional odds, continuation ratio, adjacent logit, and stereotype models. The process requires no restructuring of the input data set, as may be required with SAS procedures that can produce a few of these models. The development of these types of ordinal models and their interpretation depends on the coding of the response and explanatory data. Implementation of these models assumes a background with general linear models and categorical data analysis including maximum likelihood equations and computing odds ratios with binary data.

## (13) Exploratory Data Analysis and Dynamic Graphics

Chris Kirchberg, JMP

**ABSTRACT:** JMP is the perfect tool for exploring data. Whether you are searching for relationships, patterns or outliers, learn how to look at your data to gain critical insights. This topic walks through a case study showing the basics of analysis using JMP. It covers dynamic linking, visual analytics, Fit Model and the Profiler.

## Speaker & Organizer Biographies



his field.

For over 20 years, **Peter Eberhardt** has been providing consulting services to organizations both large and small, with a major emphasis on effective use of SAS® software in ad-hoc and analytical systems. With an M.A. in economics, Peter brings an analytical approach to all his assignments. As a SAS Certified Advanced Programmer and a SAS Alliance Partner, Peter is current in the latest SAS software - SAS v9. A regular speaker at SUGI and regional SAS User Group meetings, he is recognized as an expert in



**Robin High, MBA, MA**, has been a Statistical Coordinator at the University of Nebraska Medical Center in Omaha, NE since 2008. His prior experience includes statistical consulting with civil engineering firms in Austin, Tx, researchers at Oregon State University, and for nearly 15 years assisted graduate students and faculty at The University of Oregon. His areas of expertise include linear and generalized linear mixed models, survival analysis, design of experiments, and graphical interpretation of data. He has over 25 years' experience with the SAS System.



**Kirk Paul Lafler**, is consultant and founder of Software Intelligence Corporation and has been programming in SAS since 1979. He is a SAS Certified Professional and provider of IT consulting services and training to SAS users around the world. As an author of five books including PROC SQL: Beyond the Basics Using SAS, 2nd Edition (SAS Institute. 2013) and PROC SQL: Beyond the Basics Using SAS (SAS Institute. 2004), he has written more than five hundred papers and articles, been an Invited speaker at three hundred-plus SAS International, regional, special-interest, local, and in-house user group conferences/meetings, and is the recipient of 22 "Best" contributed paper, hands-on workshop (HOW), and poster awards. His popular SAS Tips column, "Kirk's Korner of Quick and Simple Tips", appears regularly in several SAS User Group newsletters and Web sites, and his fun-filled SASword Puzzles are featured in SAScommunity.org and many SAS Newsletters.



**Kathleen Kiernan, M.S. Statistics**, Senior Statistician in Technical Support Division at SAS Institute, has over 20 years' experience using the SAS System. She works closely with customers using SAS and JMP in the following areas: Design of experiments, Linear and Nonlinear regression, Linear, Mixed, Generalized Mixed and Nonlinear Mixed models, Power, and Genetics.



**Chris Kirchberg**, is a Systems Engineer for the JMP business division of SAS. Kirchberg has more than 10 years of experience in bioinformatics, proteomics and genomics. Before joining SAS, Kirchberg was a field application scientist for Ingenuity Systems where he worked across the academia and pharmaceutical and biotechnology companies exploring biological pathways related to data. He supported and taught software applications related to microarray data analysis, data integration, proteomic data analysis, and protein identification while working at InforMax and Rosetta Biosoftware. Kirchberg has a MS in biochemistry from Colorado State University where he researched structure-function relationships of proteins. He continued this work at University of Colorado at Boulder in Dr. Robert Poyton's laboratory, studying cytochrome c oxidase assembly, transcriptional cross-talk between the mitochondrial genome and the nuclear genome, and oxidative stress in yeast. At the same time, Chris was also an adjunct professor at Metropolitan State College of Denver where he taught human biology to non-majors.



**Andrew T. Kuligowski** has been a SAS user for well over 25 years, and is currently a Sr. Software Developer for FCCI Insurance Group in Sarasota, Florida. He has augmented his professional coding experiences in the insurance, media, and petrochemical fields by speaking at various SAS conferences and user group meetings. Andrew was conference co-chair for SESUG'97 in Jacksonville, Florida and Tennessee SAS Users Day in Knoxville, Tennessee, and is chairing SAS Global Forum 2012 in Orlando, Florida. In his spare time, Andrew can also be found volunteering at the Florida Aquarium in Tampa.



**John Xu** is the Director of Consulting of 1ST Consulting LLC, a West Des Moines based consulting company specialized in SAS related services. He has over 20 years of SAS experience in Financial, Insurance, Marketing, Government, Education, and Pharmaceutical industries. John had served on MidWest SAS Users Group board for 10 years. He is currently coordinating the activities of Iowa SAS Users Group.



**NEBSUG**  
**Nebraska SAS®**  
**Users Group**

***You are invited!***

**Join Us at  
12:30 pm for  
NEBSUG  
Volunteer Meeting**

# SAS Training Classes

- **Date and Course Title**

5/16/13 (Thursday AM)      **PROC SQL Programming: The Basics and Beyond**  
5/16/13 (Thursday PM)      **Output Delivery System: The Basics and Beyond**  
5/17/13 (Friday AM)        **Building Reusable Tools with the SAS® Macro Language**  
5/17/13 (Friday AM)        **Advanced SAS® Programming Techniques**

- **Instructor**

Kirk Lafler, Professional SAS trainer and keynote speaker of this conference.

- **Registration fee**

\$179 per course for early registration  
\* Add \$20 per course for late registration after Friday, May 10, 2013

- **Registration link**

Online registration is preferred. You may use the link below:

<https://www.regonline.com/NEBSUG2013>

You may also complete the registration form in this announcement and mail it with a check. We accept both business and personal checks.

- **Course Format**

Each course is scheduled for ½ day. The course is mostly lecture and demonstrations.

- **Course Schedule**

**Morning class:**                      08:30 am - 12:00 am

**Afternoon class:**                    01:00 pm - 4:30 pm

- **Location**    Room 3011, College of Public Health, 519 South 40th Plaza Circle, Omaha, NE 68198-4355

- **Direction and Parking**

From I-80 head North at the 42nd Street exit for 2.2 miles; turn Right (East) on Dewey Ave (first stop-light past the pedestrian bridge over 42nd St. at UNMC); After 2 blocks, turn Right (South) on 40th St. for 1/2 block; to enter the CoPH building (Harold M. and Beverly Maurer Center for Public Health) and parking lot turn left at the circle turn-around.

Room 3011 is on the top floor in the north wing (next to the 40th street entrance).

- **Map**

<http://www.unmc.edu/wwwdocs/unmccampusmap.pdf>



**Class supply**

Lecture note, notepad, pen, etc. are provided. You may bring your own computer with SAS although it is not required.

• **Special Offer I**

50% discount to full time students and individuals who are in between jobs (subject to availability, approval and verification).

• **Special Offer II**

Some Scholarship available for full time students. The award winner will receive a total of 90% off regular price. The winner will only pay \$18 for a course.

• **Cancellation Policy**

No refund will be provided but substitution is accepted with advance notice. Please email you cancellation notice to [johnxu@1st-consulting.com](mailto:johnxu@1st-consulting.com).

• **Notice**

Part of training registration fee from these SAS classes will be used for the One-day SAS conference. Thanks for your support!

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# Volunteer Signup Form

This conference is made possible by volunteers like you. If you would like to help, please complete the form below and email it to John Xu at [johnxu@1st-consulting.com](mailto:johnxu@1st-consulting.com) with subject line: NEBSUG Volunteer. Thanks!

Name \_\_\_\_\_

Phone \_\_\_\_\_

Email \_\_\_\_\_

Please rank the volunteer work you would like to participate:

( ) Registration Coordinator.

Need to come early at 7:15 am on May 18 to conference site to set up registration table and check attendees in.

( ) Session Coordinator.

Direct attendees to the proper conference room. Handle out paper if available. Remind speaker about time left. Introduce speaker if asked by Section Chair. Minimum of half day in a session.

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# Course Descriptions

## **PROC SQL Programming: The Basics and Beyond**

**Thursday AM, May 16, 2013**

This course teaches SAS users core concepts and features about accessing data stored in relational database tables. Attendees learn how to use PROC SQL to access data stored in relational tables; accomplish essential programming tasks including retrieving, subsetting, ordering, and grouping data; construct logic scenarios with case expressions; create new tables; construct "virtual" tables known as views; define, access and manipulate data; understand the difference between DATA step merges and joins; create complex queries using inner and outer join constructs as well as with set operators; produce "quality" looking output using PROC SQL options and Output Delivery System (ODS); use summary (statistical) functions to aggregate data; interface PROC SQL with the macro facility to create single-value and multi-value (list) macro variables; understand index rules and strategies; and apply performance tuning techniques.

## **Output Delivery System: The Basics and Beyond**

**Thursday PM, May 16, 2013**

This course explores the various techniques associated with output formatting and delivery using the Output Delivery System (ODS). Numerous examples will be presented to command mastery of ODS capabilities while providing a better understanding of ODS statements and options to deliver output anyway that is needed. Topics include SAS-supplied Formatting statements and options; selecting output objects with Selection or Exclusion Lists; formatting Output as RTF, PDF, MS-Excel®, and HTML; using the Escape character to enhance output formats; exploring ODS statements and options; implementing scrollable tables in HTML output with static column headers; enabling/disabling borders; generating HTML hyperlinks in RTF output; adding images to RTF output; removing gridlines and shading in RTF output; creating a printable table of contents in PDF output; sending output to Microsoft Office; constructing drill-down applications with the DATA step, ODS, and SAS/GRAPH software; and techniques on creating thumbnail charts.

## **Building Reusable Tools with the SAS(R) Macro Language**

**Friday AM, May 17, 2013**

The SAS® Macro Language is a powerful feature for extending the capabilities of the SAS System. This course presents a collection of techniques for constructing reusable and effective macros tools. Attendees learn how to build functional macros that process statements containing SAS code; learn basic design principles in the development of reusable macro tools; create macros containing keyword and positional parameters; utilize defensive programming techniques; build a library of macro utilities; interface the macro language with the SQL procedure; and develop efficient and portable macro language code.

## **Advanced SAS(R) Programming Techniques**

**Friday PM, May 17, 2013**

SAS users who have acquired basic skills presented in a SAS Software Basics course and want to expand their knowledge in the DATA step as a programming language will want to attend this Advanced SAS Programming Techniques course. Attendees learn complex programming topics and techniques in the areas of data access, data manipulation, data management, data presentation, and more. Topics include DATA step programming techniques including reading and writing from and to MS-Excel spreadsheets; creating and using user-defined formats; coding and using arrays, loops, and ranges; performing lookup operations with DATA step hash objects; using operators and modifiers to search data; reshaping columns and rows of data with the TRANSPOSE procedure and DATA step approaches; techniques on controlling and improving I/O, CPU and memory operations; specialized ODS techniques for improved output; drill-down techniques; and testing and debugging techniques.

# SAS Conference Registration Form

(NEBSUG One-day Conference. 5/21/13)

(Online registration is preferred, please use <https://www.regonline.com/NEBSUG2013>)

Please make checks payable to **MWSUG SAS Users Group**. And mail it to:

John Xu - NEBSUG SAS meeting Registration

4652 Valley View Ln

West Des Moines, IA, 50265

Email: [dsm1day@yahoo.com](mailto:dsm1day@yahoo.com)

Phone: (515) 778-4093

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**NEBRASKA SAS® USERS GROUP**  
**THE 2013 OMAHA ONE-DAY CONFERENCE REGISTRATION \***  
**Tuesday, May 21, 2013**

Name: \_\_\_\_\_

Company: \_\_\_\_\_

Title: \_\_\_\_\_

Address: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ ZIP: \_\_\_\_\_

E-mail (required): \_\_\_\_\_ Phone: \_\_\_\_\_

Amount enclosed: \_\_\_\_\_

\*\*\*\*\*  
**Registration Fee:** \$99 per person for Early Registration by Friday, May 6, 2013

\$139 per person for Late Registration after May 6, 2013

\$29 per person for Student Registration by Friday, May 10, 2013

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\* A confirmation e-mail will be sent within 3 days.

\* For multiple registrations, you may (1) submit one registration form per attendee, or (2) submit one registration form for the contact person, plus a list of additional attendees' name, e-mail address, and phone number.

\* We can take only company check and personal check. Sorry we do not take credit card.

\* An invoice is available upon request.



# SAS Class Registration Form

NEBRASKA SAS<sup>®</sup> USERS GROUP, THE 2013 ONE-DAY CONFERENCE

(Online registration is preferred, please use <https://www.regonline.com/NEBSUG2013>)

**Enrollment Requirements:** See course description.

**Please mark the SAS Classes to attend:**

- ( ) \$179 \* **PROC SQL Programming: The Basics and Beyond** (5/16/13 Thursday AM)
- ( ) \$179 \* **Output Delivery System: The Basics and Beyond** (5/16/13 Thursday PM)
- ( ) \$179 \* **Building Reusable Tools with the SAS<sup>®</sup> Macro Language** (5/17/13 Friday AM)
- ( ) \$179 \* **Advanced SAS<sup>®</sup> Programming Techniques** (5/17/13 Friday PM)

\* Add \$20 for late registration after Friday, May 10, 2013  
You may also include the conference registration fee of \$179 per person.

\_\_\_\_\_ <= **Total Fee**

The registration fee includes lecture notes, class supply, lunch for full-day classes, and refreshment for breaks.

Special Discount: 50% off for full time students and individuals who are between jobs.

\*\*\*\*\*

Name: \_\_\_\_\_

Company: \_\_\_\_\_ Title: \_\_\_\_\_

Address: \_\_\_\_\_

City/State/ZIP: \_\_\_\_\_

E-mail: \_\_\_\_\_ Phone: (\_\_\_\_\_) \_\_\_\_\_ - \_\_\_\_\_

You may e-mail the completed registration form to: [johnxu@1st-consulting.com](mailto:johnxu@1st-consulting.com). Please make the check payable to

Midwest SAS Users Group and mail it with a copy of your registration form to:

John Xu  
(Nebraska SAS Conference)  
4652 Valley View Lane  
West Des Moines, IA 50309

Email:  
[johnxu@1st-consulting.com](mailto:johnxu@1st-consulting.com)

Payment prior to the class is required. We accept both company and personal Check. Credit card is accepted for online registration only. A confirmation e-mail will be sent to you within 48 hours.

## Registration Cancellation Policy

Nebraska SAS Users Group reserves the right to cancel the class at any time and for any reason with a full refund.

Attendee may not cancel class registration but can provide a substitution with advance notice. Please email your change notice to [johnxu@1st-consulting.com](mailto:johnxu@1st-consulting.com).

## Question?

For any question, please contact John Xu by email at [johnxu@1st-consulting.com](mailto:johnxu@1st-consulting.com) or by phone at 515-778-4093.

**\* YOU WILL RECEIVE AN EMAIL CLASS REMINDER A FEW DAYS BEFORE THE STARTING DATE WITH MORE DETAILS. \***

# Scholarship Application Form

Nebraska SAS® Users Group will provide scholarship to selected students to attend the SAS training classes at 90% off the regular cost. Full time college students and people in between job may apply.

Please complete the form below. You may want to attach a resume, especially if you are not a student. Please send your application, plus the completed conference and class registration form by e-mail to John Xu at [johnxu@1st-consulting.com](mailto:johnxu@1st-consulting.com). If you have any question, please contact John Xu as well.

Name: \_\_\_\_\_ E-mail: \_\_\_\_\_

College: \_\_\_\_\_ Major: \_\_\_\_\_

I would like to attend SAS® conference: (Yes/No) \_\_\_\_\_

Rank the SAS class desired: PROC SQL Programming \_\_\_\_\_ Output Delivery System \_\_\_\_\_

SAS® Macro Language \_\_\_\_\_ Advanced SAS® \_\_\_\_\_

Please answer the following questions. Your answers will be used in the selection.

- How long have you been using SAS® software? \_\_\_\_\_
- Where did you first learn SAS®? \_\_\_\_\_
- Why do you think it is important to know SAS®? \_\_\_\_\_

\_\_\_\_\_

- What are your future plans for using SAS®? \_\_\_\_\_

\_\_\_\_\_

- Your current status: Junior \_\_\_\_\_ Senior \_\_\_\_\_ M.S. \_\_\_\_\_ Ph. D. \_\_\_\_\_ Other \_\_\_\_\_

Please tell us anything that will help us award you the scholarship:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_


\_\_\_\_\_

\_\_\_\_\_

The deadline for application is 5/3/12. You will be notified by e-mail by 5/6/13.

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