Iowa SAS® Users Group
The 12th One-Day Conference

Monday, May 13, 2019
Carver Conference and Learning Center
Corteva Agriscience
Agriculture Division of DowDuPont

Conference Co-Chairs
Simon Geletta and Scott A. Miller
Dear fellow SAS Users,

The next Iowa SAS Users Group conference will be held on May 13, 2019. Your fellow Iowa SAS users, colleagues and friends will come together to exchange ideas, experiences, best practices, and job/contract opportunities. Please bring along your business cards, not only for networking, but to facilitate our registration process.

We have two keynote presentations, four session tracks, and open time where you can share concepts, ideas and network with your fellow SAS users.

As in past years, SAS is a key sponsor for which we are eternally grateful. This year's opening keynote features Amy Peters from SAS. Her keynote, titled “The Indispensable SAS Programmer”, will discuss the many different ways that people use SAS and how you can prepare yourself to continue to be indispensable. I’m certain this topic will be of great interest to SAS users of all levels and experiences!

Teradata has also stepped forward as a major sponsor, and we thank them very much for their support! During our mid-day lunch keynote, we will hear from Ken Pikulik, Global Alliance Manager at Teradata. Ken's talk, titled “Financial Justification for Faster Analytics” will help you realize the value of your analytics investments and help you make the most of your limited time and resources. This will be a very interesting session you won’t want to miss.

During the day, choose from 4 concurrent presentation sessions with over 20 presentations that cover a wide range of topics and skill levels.

We’ll end the conference by holding a closing session where door-prizes (which include a laptop computer and much, much more) are given away while we wrap things up. You don’t want to miss the closing session!

Following the conference, we will have several instructor-led class sessions that will provide you with a chance to learn various SAS topics in a longer session with more opportunity to interact with the instructor. This year, we have reduced the price to only $100 per full day session – a tremendous value!

Your Co-Chairs,

Simon Geletta and Scott A. Miller
**Conference Information**

**Date:**
Monday, May 13, 2019

**Location:**
Carver Conference and Learning Center (See map and direction on next page)
Corteva Agriscience, Agriculture Division of DowDuPont.
7200 NW 62nd Ave.
Johnston, Iowa 50131

**Online Registration**
http://www.iowasasuser.org/Registration2019

**Registration Fee:**
- $60 for Early Registration by Friday May 3, 2019
- $90 for Late Registration after May 3, 2019 and onsite Registration

**SAS Class:**
See the “SAS Training Classes” page for details.

**Cancellation Policy:**
No refund but substitution is accepted with advance notice to dsm1day@gmail.com

**Schedule:**
Arrive early for breakfast and networking at 7:15 a.m. Check-in will start at 7:40 a.m. Opening Session/Keynote will begin promptly at 8:30 a.m. 4 concurrent sessions will start at 9:20 a.m. Lunch at 12:10 p.m. The lunchtime keynote will start at 12:30 p.m. The afternoon sessions will start at 1:30 p.m. The closing session will start at 4:30 p.m. and will conclude before 4:50 p.m. See Conference Schedule on next page for more details.

**Breakfast/Lunch:**
Breakfast and Lunch are provided to all attendees without extra charge. Coffee will be served through the day.

**Hotel:**
If you need to stay in a local hotel, you may call the following hotels for a reservation. Please mention that you are attending a meeting at Corteva Agriscience (formerly known as Pioneer) to get the special rate. It is up to the hotel to decide if you qualify for the discount rate.

1. Stoney Creek Inn, 5291 Stoney Creek Ct., Johnston  
(515) 334-9000  
$79/night  
(FREE Wireless Internet, Airport Shuttle, Breakfast)

2. Towneplace Suites, 8800 Northpark Dr., Johnston  
(515) 727-4066  
$87/night  
(FREE Wireless Internet, Breakfast)

3. Additional hotels with corporate discount: Fairfield Inn & Suites in Urbandale, Hilton Garden Inn Des Moines/Urbandale, Drury Inn in West Des Moines, Sheraton West Des Moines Hotel

**Questions:**
For answers, please contact: Scott A. Miller  
dsm1day@gmail.com  
(515) 344-4455
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 4 concurrent sessions throughout the day! We will have Invited Speakers including professional trainers and industry experts, as well as SAS Institute Speakers. Online Registration will start over one month before the conference.

Additionally, we will have post-conference SAS classes taught by SAS expert LeRoy Bessler, Ph.D. and Russ Lavery.

- Network with Fellow SAS® Users
- Learn from the SAS Pros
- Four Concurrent Sessions
- Over 20 Presentations!
- SAS Classes by Professional Trainers
- Lower Post-Conference Class Fees – New!!

Directions to Corteva Agriscience
Carver Conference and Learning Center

From I-80/35 take the Merle Hay Road exit #131. At the exit ramp, go north onto Merle Hay Road. Take Merle Hay Road north about 1 mile to Pioneer Parkway and turn west (left). Follow this divided boulevard all the way to its end at NW 62nd Avenue. Turn left to head west on NW 62nd Avenue. Continue to the main Corteva Agriscience entrance. Turn left onto the main driveway. Park in the designated spaces in front of the building or in the lot across the drive.
## Conference Schedule

<table>
<thead>
<tr>
<th>5/13</th>
<th>Session 1 – SAS Presents (Room C: Close to entrance)</th>
<th>Session 2 (Room B: Next to Auditorium)</th>
<th>Session 3 (Room A: Auditorium)</th>
<th>Session 4 (Room D)</th>
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<tbody>
<tr>
<td>7:40 – 8:30 a.m.</td>
<td>Check In &amp; Network -- Breakfast Sponsored by SAS</td>
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| 8:30 – 9:15 a.m. | Opening Session & Keynote Speech: The Indispensable SAS Programmer – What Does the Future Hold?  
Amy Peters, Product Manager, SAS | | | |
| 9:20 – 10:10 a.m. | Getting Started with Time Series Models  
Danny Modlin, SAS (3) | Oh the Places You’ll Go, with SQL!  
Kaeli Samson, UNMC (9) | Powerful SAS® Output Delivery with ODS HTML and ODS Excel: Part 1, ODS HTML  
LeRoy Bessler, Ph.D., BCR (16) | PROC Report  
Russ Lavery, (21) |
| 10:20 – 11:10 a.m. | SAS Studio: An Introduction  
Shannon Moore, SAS (4) | Connect to External Databases Including SQL Server, Oracle, and Teradata using SAS/Access  
Scott A. Miller, WF (10) | Powerful SAS® Output Delivery with ODS HTML and ODS Excel: Part 2, ODS Excel  
LeRoy Bessler, Ph.D., BCR (17) | |
| 11:20 a.m. – 12:10 p.m. | Getting Started with Bayesian Analytics  
Danny Modlin, SAS (5) | Unleash the Power of Dark Data with Teradata Vantage and SAS Viya  
Bob Matsey, Teradata (11) | An introduction to Web Services and JSON using SAS  
Delayne Stokke, WF (18) | |
| 12:10 – 1:30 p.m. | Lunch & More Sponsored by SAS | Lunchtime Keynote: Financial Justification for Faster Analytics  
Ken Pikulik, Global Alliance Manager, Teradata Corporation  
12:30 p.m. in main auditorium | | |
| 1:30 – 2:20 p.m. | What’s New in SAS 9.4  
Shannon Moore, SAS (6) | Centralized Macro Library  
LeRoy Bessler, Ph.D., BCR (19) | Working efficiently with relational database management systems (RDBMS) data sources  
Simon Gelatta, KDS (22) |
| 2:30 – 3:20 p.m. | The Future of SAS Enterprise Guide & SAS Studio  
Amy Peters, SAS (7) | Net Lift Modeling  
Russ Lavery (20) | The STYLEATTRS Statement versus the Attribute Data Set with SGPLOT: Visualizing Missing Numerical Data  
Robin High, UNMC (14) | |
| 3:20 – 3:40 p.m. | | | | Afternoon Break |
| 3:40 – 4:30 p.m. | Audit Proof: Using SAS to Proactively Mitigate Your Team’s Risk  
Mark Kline, WF (8) | Best Tips, Tricks, and Code Snippets from 25 Years Programming in SAS  
Jeff LaMar, WF (15) | Zero-Inflated and Zero-Truncated Count Data Models with NLMIXED  
Robin High, UNMC (13) | Semantics Preserving Sampling  
Hridesh Rajan, Ph.D., ISU (23) |
<p>| 4:30 – 4:50 p.m. | | | | Closing Session/Door Prize (Laptop computer, iPad, and More) |</p>
<table>
<thead>
<tr>
<th>Time</th>
<th>5/14/19 (Iowa Dept. of Edu.)</th>
<th>5/15/19 (Iowa Dept. of Edu.)</th>
<th>5/16/19 (Iowa Dept. of Edu.)</th>
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<tbody>
<tr>
<td>8:30 a.m. – 12 p.m.</td>
<td>Chart Smart: Create Communication-Effective Graphs with SAS ODS Graphics&lt;br&gt;LeRoy Bessler, Ph.D., BCR(C1)</td>
<td>An Animated guide: Knowing SQL internals makes coding easy&lt;br&gt;Russ Lavery (C2)</td>
<td>An Animated Guide: SAS Macros from beginner to advanced&lt;br&gt;Russ Lavery (C3)</td>
</tr>
<tr>
<td>12 – 1 p.m.</td>
<td>Lunch (we will provide)</td>
<td>Lunch (we will provide)</td>
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<tr>
<td>1 – 4:30 p.m.</td>
<td>Chart Smart: Create Communication-Effective Graphs with SAS ODS Graphics (continued)&lt;br&gt;LeRoy Bessler, Ph.D., BCR(C1)</td>
<td>An Animated guide: Knowing SQL internals makes coding easy (continued)&lt;br&gt;Russ Lavery (C2)</td>
<td>An Animated Guide: SAS Macros from beginner to advanced (continued)&lt;br&gt;Russ Lavery (C3)</td>
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Thanks to Our Sponsors

![Sponsors Logos]
The Indispensable SAS Programmer – What Does the Future Hold?

Amy Peters, Product Manager, SAS

ABSTRACT: It’s impossible to define a “typical SAS programmer” – seems like everyone uses SAS differently. The common theme is the pride in handling whatever is thrown your way. With all the buzz around open source languages, where do SAS programming skills fit? How can you equip yourself to continue to be indispensable?

Financial Justification for Faster Analytics

Ken Pikulik, Global Alliance Manager, Teradata

ABSTRACT: Explore ways to improve your organization’s analytics speed and calculate the value of those improvements to justify future analytics investments. Time is a finite resource. You can’t buy it, make more of it or save it for later use. The best you can do is be productive with the time you have. That’s what makes optimizing your analytic processes for speed so rewarding. It allows you to make better data-driven decisions, faster. This presentation will highlight ways to identify and overcome bottlenecks in the analytic process. It will also help you calculate the value to be gained from accelerating those processes and justify investment in faster analytics.
(3) Getting Started with Time Series Models

Danny Modlin, SAS

Getting Started With Time Series Models will introduce the basic features of time series variation, and the model components used to accommodate them. Participants will be introduced to three families of time series models. Comparisons and contrasts among these families will be discussed.

(4) SAS Studio: An Introduction

Shannon Moore, SAS

This session introduces SAS Studio, a development application for SAS that you access through your web browser. With SAS Studio, you can access your data files, libraries and existing programs, and you can write new programs. You can also use the predefined tasks in SAS Studio to generate SAS code.

(5) Getting Started with Bayesian Analytics

Danny Modlin, SAS

Getting Started With Bayesian Analysis will give a brief introduction to Bayesian statistics and its analysis within SAS. Participants will learn the difference between Bayesian and frequentist approaches to statistics and be introduced to PROC MCMC.

(6) What’s New in SAS 9.4

Shannon Moore, SAS

Explore selected changes and enhancements in SAS 9.4, including a discussion of changes to common procedures.

(7) The Future of SAS Enterprise Guide & SAS Studio

Amy Peters, SAS

These two interfaces share a common future. The ultimate goal is for you to be able to easily move between them - choosing SAS Enterprise Guide when you need the power of a desktop app and SAS Studio when you need the flexibility of a browser-based app. Both interfaces are undergoing major revisions. Come to see designs and prototypes then share your feedback and help SAS drive the direction of these products.
(8) Audit Proof: Using SAS to Proactively Mitigate Your Team’s Risk

Mark Kline, Wells Fargo

Monitoring and preventing Risk within your team’s processes and products is essential to excellent customer service, data accuracy, automated process stability, confidential data security, and insulating your code within a constantly changing data environment. You and your team should be the 1st ones to catch risk issues before they happen and before your business partners and customers notice them. This presentation will provide 3 examples of how SAS can audit your automation processes, immediately assess impacts of upcoming data environment changes, and monitor recurring population risks with a risk points notification tool.

(9) Oh the Places You’ll Go, with SQL!

Kaeli Samson, University of Nebraska Medical Center

There are many uses for PROC SQL outside of interfacing with a database directly. This talk will introduce and go over the basics of PROC SQL, and will give specific examples of how it can be used in data verification, summarization, and joins. Attendees will leave with the knowledge and skills to immediately incorporate SQL into their own work.

(10) Connect to External Databases Including SQL Server, Oracle, and Teradata using SAS/Access

Scott A. Miller, Wells Fargo

This presentation will discuss connecting SAS to an external relational database. This discussion will compare using a libname statement to pass-through SQL and cover some of the pros and cons to each approach. Along the way, we will introduce the differences between vendors, including Microsoft SQL Server, Oracle, and Teradata, and discuss how this will impact your work. This presentation won’t get into the depths of configuring a connection, but we will touch upon it. Finally, some useful optimization techniques to improve performance will be shared.

(11) Unleash the Power of Dark Data with Teradata Vantage™ and SAS® Viya®

Bob Matsey, Teradata

The majority of data within an organization is “dark”, not exposed to the light of day. There are typically multiple reasons for this data to be, which can include the sheer volume of it, the format it is in, or even that people within the organization are unaware of its existence. However, this data might contain valuable insights into the business. By using Teradata’s Data Lab to provide Agile analytic capabilities in a self-service environment, DBAs spend less time loading and setting up data marts and enable business users to harness the combined power of SAS® Viya® and the Teradata Vantage™. We can expose and load many different data types to allow the business to discover its most valuable resource (data) to the fullest extent.
(12) Centralized Macro Library

Daniel Walderbach, Wells Fargo

This session explains the uses of a centralized macro library and how to utilize a shared SAS autoexec for use on cross discipline development teams. Topics will include how to setup a common autoexec for standardizing common code usage, use of “options mautosourcesasautos();”, error handling macro for connecting to a RDMS sources, and automated use of a bulk-load utility when loading data into an RDMS.

(13) Zero-Inflated and Zero-Truncated Count Data Models with NLMIXED

Robin High, University of Nebraska Medical Center

SAS®/STAT and SAS/ETS software have several procedures for working with count data based on the Poisson distribution or the negative binomial distribution with a quadratic variance function (NB-2). Count data may either have an excess number of zeros (inflation) or the situation where zero is not an outcome (truncation). Zero-inflated Poisson and negative binomial models are available with the COUNTREG, GENMOD, and FMM procedures. The FMM procedure also provides options for the zero-truncated Poisson and negative binomial distributions. Other types of count data models such as the restricted and unrestricted generalized Poisson, negative binomial with a linear variance function (NB-1), and Poisson-Inverse Gaussian (P-IG) distributions are also distributions for count data models and likewise may contain zero-inflation or be subject to zero-truncation. Programming statements entered into the NLMIXED procedure in SAS/STAT can model zero-inflated and zero-truncated count data with all these distributions, and as a result may improve model fit which can be examined with the Vuong test or by comparing various fit statistics.

(14) The STYLEATTRS Statement versus the Attribute Data Set with SGPLOT: Visualizing Missing Numerical Data

Robin High, University of Nebraska Medical Center

The SGPLOT procedure makes many types of graphs. The appearance of these graphs without a group variable is usually easy to modify with options placed within the various plotting statements. However, when a group variable with two or more levels exists, the default choices for colors, line types, fill patterns, or symbols to differentiate the group levels are stored in an external template which can be hard to find and tedious to edit. The STYLEATTRS statement makes modifications of several attributes much easier to apply. However, restrictions on the statement’s use require choices of these attributes to be accessed through an external attribute data set. This talk will compare these two methods to apply user-defined attributes for various types of graphs without modifying the templates.

(15) Best Tips, Tricks, and Code Snippets from 25 Years Programming in SAS

Jeff LaMar, Wells Fargo

In this presentation, Jeff will cover SAS tips, tricks and tidbits that he has learned over the last 25 years performing analytics for American Greetings, Citicards, H&R Block and Wells Fargo. Don’t be afraid, there will be NO deep discussions on heteroscedasticity or multi-collinearity challenges. The presentation is designed to cover the most practical SAS learnings gleaned through years of experience. The presentation will cover areas such as the “best tips and secrets” on PC SAS and Enterprise Guide. It will also cover extremely useful code snippets Jeff has used over and over in his different positions. The objective is for everyone to walk away with at least one idea/tidbit/code snippet that they can implement immediately in their current role.
(16) Powerful SAS® Output Delivery with ODS HTML and ODS Excel: Part 1, ODS HTML
LeRoy Bessler, Ph.D., Bessler Consulting and Research

Whether you deliver a report on the external web or the company intranet, HTML is THE language/format for you. With the huge benefit of hyperlinkability, you can link anything to anything: links between different tabular and/or graphic views of the data; or for a graph a link to a spreadsheet of all its input; or for a graph element for summarized data a link to a spreadsheet of the summarized data. A spreadsheet can contain a link back to the HTML graph. HTML deployment of a graph offers an extra advantage. Hovering the mouse can temporarily display precise numbers on graphs. For static delivery for all of the numbers, link to a spreadsheet or an HTML table, or simply package the graph and table on the same web page. In addition, HTML can be used to format a richer email, or to display animated graphs. The paper also includes displaying images in a HTML report, and presents guidelines for communication-effective web design. No prior knowledge is assumed. After presenting design guidelines, the focus is eighteen examples for which code is provided.

(17) Powerful SAS® Output Delivery with ODS HTML and ODS Excel: Part 2, ODS Excel
LeRoy Bessler, Ph.D., Bessler Consulting and Research

A common destination for results prepared with SAS® is often an Excel workbook. Everyone already has Excel and knows how to use it, to reformat or further explore their results however they wish. ODS Excel enables a SAS programmer to create highly formatted reports, tabular or graphic, or a combination of both, that can be opened and used with Excel. You can turn on customization/formatting features in SAS that would be possible manually inside Excel, to deliver an already finished product to the viewer of the report. The ODS Excel capability does not require Excel to be installed on the machine that creates ODS Excel output. You can use ODS EXCEL running SAS on MVS, UNIX, Linux, or Windows. This paper assumes no prior knowledge of the topic. ODS Excel output requires Microsoft Excel 2010 or later.

(18) An introduction to Web Services and JSON using SAS
Delayne Stokke, Wells Fargo

Web services are increasingly being used to provide secure, controlled access to data. JSON (JavaScript Object Notation) is widely used to exchange data between different platforms and is often the format used by web services. SAS analysts may be asked to work with data from a web service, and if so it will be helpful to have some understanding of both Web Services and the JSON format. This introduction will show 3 different ways to access and use JSON data returned from a web service.

1) Use PROC HTTP to access web service and return JSON data, then use the JSON engine to parse the JSON and create a SAS dataset.

2) Use PROC HTTP to access web service and return JSON data, then use a DATA step to parse the JSON and create a SAS dataset.

3) Use PROC DS2 to access web service using an HTTP package, return JSON data and then parse the data using a JSON package within PROC DS2.

LeRoy Bessler, Ph.D., Bessler Consulting and Research

Applications designed and built with Software Intelligence (SI) are robust, made of reusable parts, and easy and quick to extend or maintain. With dynamically auto-customizing code, such “living” applications go beyond change tolerance to change amenability, and further—to change implementation. They cope with ever-changing user or management preferences, run-dates, data dates, and data content. Common types of changes in report/graph content, format, and function are handled without reprogramming. If business rules do not change, an SI application can have eternal life.

Whether you are a new or experienced SAS programmer, or an analytically oriented user who does not think of herself or himself as a programmer at all, this paper—which assumes no advanced SAS knowledge—shows you how to apply principles of Software-Intelligent Application Development, which are really programming-language-independent, to make your use of SAS software safe, simple, and speedy.

One of the tools for SI implementation with SAS software is SAS Macro Language. For users with no SAS Macro Language experience, the standup presentation includes a brief, but sufficient, introduction.

Besides explaining the few, but powerful, principles of Software-Intelligent application development, the paper provides you with some widely applicable practical examples that you can put to use back at work.

(20) Net Lift Modeling

Russ Lavery, Organization Name

John Wanamaker a Philadelphia native and a pioneer in marketing, once commented “I know half of my marketing dollars are wasted but I don’t know which half” and net lift modeling attempts to address that issue.

The context is of a considering the role out of a new marketing manipulation (coupon, voucher, tv ad etc.). The problem addressed by net lift modeling is that most implementations of a logistic regression identify people who are likely to buy and, importantly, does not identify people who are likely to buy without your proposed marketing manipulation.

Net lift modeling help you identify for groups of potential customers: people who would buy without getting your marketing manipulation (a potential money-saving), people who need your marketing manipulation in order to buy, people who will not buy even if they get your marketing manipulation, and people who are less likely to buy after getting your marketing manipulation.

Net lift model suggests that you should spend money to contact people who need your marketing manipulation in order to buy and helps you identify that group.
(21) PROC Report

Russ Lavery, Organization Name

PROC Report is a powerful big data tool because PROC Report reads the source data set only one time and performs all other calculations on a hidden internal file - greatly reducing run time. If the data being fed into PROC Report is in the proper structure, using PROC Report can save hundreds of lines of SAS code as well as run time.

PROC Report combines the convenience of a Proc Print with the power of the Data Step and can produce complete, complex and colorfully traffic-lighted reports in one procedure call. This mini-seminar concentrates on the internal processes of product report – how calculations are done. Understanding internal processes are required in order to calculate nested percentages and totals that are often required for complicated reports. Creating colorful and highly nested reports, using PROC Report, has been covered in many SUG papers but this topic, calculations, has not.

This talk (slides and an accompanying audio) was burned onto a CD and was glued onto the back cover of Art Carpenter’s excellent book on PROC Report. If you have a hard-cover copy of that book, you already have this mini-seminar. Since that book is now being sold as a soft cover, The CD can no longer be purchased but the talk can now be presented at SUGs.

(22) Working efficiently with relational database management systems (RDBMS) data sources

Simon Gelatta, Knowledge Delivery Services

Frequently, SAS has to use data that are stored in external data sources such as RDBMS. Structured Query Language (SQL) is a the standard language used to interacting with data in tables and/or views that are stored in RDBMS. PROC SQL is the SQL implementation within the SAS System. To enhance efficiency of working with external RDBMS, SAS has been doing a good job of continual improvement of its implementation of the SQL language. To take advantage of the improvements is increasingly requiring database programmers and analysts to update not only their Proc SQL skills but also RDBMS specific SQL implementations – including the procedural extensions that each RDBMS implements. In this hands-on workshop we will learn/experience the specific details of implementing SQL efficiencies while working with external RDBMS. The examples used in the workshop are based on working with Microsoft’s “SQL Server” RDBMS. Although we use SAS Enterprise Guide as a client, we will mostly take the programming approach rather than relying on the Enterprise Guide GUI. Come prepared to look Microsoft SQL Server under the hood, and write a lot of SAS code!

(23) Semantics Preserving Sampling

Hridesh Rajan, Ph.D., Iowa State University

In this talk, we will motivate semantics preserving sampling using three use cases: visualization of large-scale data, sending large-scale data over limited bandwidth channels, and processing data generated by high throughput sensors. Visualization of large-scale data for exploratory data analysis is a challenge—the data size quickly exceeds the capabilities of existing visualization tools. Sending large-scale data over limited bandwidth channels can be prohibitive—data transfer becomes a bottleneck. Data generated by high throughput sensors can overwhelm storage capabilities—to fit generated data within the available capacity some data is dropped or the sensor is turned on periodically. Typically, sampling strategies are used for data reduction to overcome these hurdles. While sampling schemes have been designed to preserve certain statistical properties of the population, important peaks and anomalous behaviors are lost. We will discuss semantics preserving sampling using trend line data as an example, and describe its advantages compared to traditional data reduction techniques. This is joint work with my Ph.D. students Shibbir Ahmed and Md. Johirul Islam.
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 dsm1day@gmail.com with subject line: IASUG Volunteer. Thanks!

Name______________________________________________________________________________________________________

Phone______________________________________________________________________________________________________

Email_______________________________________________________________________________________________________

Please rank the volunteer work you would like to participate:

☐ **Conference Promotor**

   Promote the conference in your company by forwarding announcement to co-workers and coordinating the group registration.

☐ **Registration Coordinator**

   Need to come early at 7:15 am on the day of the 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.

☐ **Conference Support**

   Provide general support to attendees. For example, Assist Hands-On Workshop set up and close down, help at lunch time.

We will have a few free registrations for volunteers, please contact us at dsm1day@gmail.com.
**Biographies**

**Danny Modlin** is an analytic training consultant at SAS where he has been since 2011. Danny teaches 9 different statistics classes for SAS. He has used SAS since 2004. Danny has a Bachelors of Mathematics with Teacher Licensure from Elon College, a Masters of Mathematics from the University of North Carolina at Wilmington, and a Masters of Statistics from North Carolina State University.

**Shannon Moore** has been with SAS since 1997 and is a charter member of the SAS’ Customer Success organization. His areas of emphasis include Enterprise Business Intelligence, Office Analytics, Visual Analytics, and ODS Statistical Graphics. He is the recipient of a SAS Americas Sales Innovation Award and is a SAS Certified Visual Business Analyst. He has experience in many industries including Health and Life Sciences, Financial Services and Government. Shannon graduated from the University of Colorado, Boulder.

**Amy Peters** hired as a SAS instructor in 1987, Amy Peters taught classes and developed courses before taking responsibility for course development and then managing SAS Education’s Customer Service Department. She's now in product management at SAS, responsible for SAS programmer enablement which includes SAS Studio, SAS Enterprise Guide, and the SAS University Edition.

**Ken Pikulik** provides a unique perspective on analytics with a broad range of experience working with big data solutions. He currently works for Teradata to facilitate the collaboration of analytic solutions with across different technology platforms, including SAS. His two-decades of experience with data driven and Cloud applications includes work with solutions for the Internet of Things, Analytics, Supply Chain, Security and more. He is a graduate of the University of Wisconsin – Stevens Point.

**Bob Matsey** is a Senior Analytic Consultant with Teradata, concentrating on in-database processing and advanced analytic capabilities. Before that, he worked for 5 years at SAS as a Senior Architect, specializing on integrating SAS with Teradata. With over 25 years total experience, he is skilled in databases, IT strategy, data warehousing, and data management. He has an MBA focused in Business Administration from McColl School of Business, Queens University.
**Biographies**

**LeRoy Bessler, Ph.D.** is a SAS consultant, author, and trainer. A SAS user since 1978 and Data Visualization enthusiast since 1981, he has presented at conferences in the USA, Canada, and Europe, on communication-effective information delivery (using graphs, tables, spreadsheets, web pages, maps, or color), SAS to Excel, tools for SAS server administrators, users, and managers, and software-intelligent application development for reliability, reusability, extendability, and maintainability. Dr. Bessler enjoys SAS programming and supporting SAS users, servers, software, and data. SAS software is his tool for data analysis and information delivery, and to build Strong Smart Systems™ and provide Visual Data Insights™ for the enterprise.

**Lizhi Feng** is a biostatistician at Corteva Agriscience since 2001. He has been a SAS user from 1996 as a graduate student. He holds a Master of Science in Statistics and Ph.D. in Plant Genetics and Breeding from North Carolina State University, the birth place of the SAS.

**Simon Geletta** is an associate professor in the Master of Public Health (MPH) program at Des Moines University in Des Moines, Iowa, where he teaches courses in healthcare research and statistics, community research methods and geographic information systems for healthcare professionals. Dr. Geletta is also the founder of Knowledge Delivery Services, LLC - a systems consulting and service business and a Silver Partner member of the SAS Alliance Network.

**Robin High** has been a biostatistician at the University of Nebraska Medical Center in Omaha, NE since 2008. His prior experience includes statistical consulting with a civil engineering firm in Austin, TX, researchers at Oregon State University, and for nearly 15 years assisted graduate students and faculty at The University of Oregon. He has over 25 years’ experience with the SAS System.

**Mark Kline** is an Analytic Manager with the Corporate Risk division of Wells Fargo, where he has worked in data & analytics for the past 15 years. He has spent the past 7 years supporting the Home Lending Testing & Validation teams using a SAS-driven model for data retrieval, validation, sampling methodology, automation and reporting, and proactive risk monitoring. Mark has his BA in Business Administration, majoring in Information Systems, from Drake University in Des Moines, IA. In his “free” time he leads a weekly youth ministry of 70+ elementary kids, serves as an elder at his church, and is a leader with Trail Life USA.
**Biographies**

**Jeff LaMar** started using SAS in 1993 as an Operations Research Analyst for American Greetings. In 2000, Jeff migrated to the financial industry and has worked for Citicards, H&R block, and Wells Fargo. Jeff is currently working as a SAS Risk Analyst with the Wells Fargo Wealth and Investment Risk Analytics team where he focuses on financial crimes and surveillance. He holds B.S. and M.S. degrees in Industrial Engineering from Iowa State University.

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**Russ Lavery** is a frequent and multiple award-winning presenter at SAS user groups. He has been a technical reviewer on five books on SAS and statistical topics. He has over 25 years of experience using SAS and is still studying. Russ is a contractor and lives outside Philadelphia, PA, where he occasionally teaches as an adjunct in the Drexel University analytic program and dances frequently.

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**Scott A. Miller** is a Credit Risk Analytics professional at Wells Fargo. He has a BA in Computer Science from Simpson College and is SAS Advanced Certified. In his spare time, he is fascinated with solving puzzles using computer programs.

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**Elaine Notis** is a Senior Applications Developer at Corteva Agriscience with 20 years of SAS experience. She uses SAS as a development tool for the various groups that she supports. As a member of the SAS Support Team, she helps to support approximately 300 global SAS users at Corteva.
Biographies

Hridesh Rajan, Ph.D., is the Kingland professor in the Department of Computer Science at Iowa State University, where he has been since August 2005. He has held visiting positions at the University of Bristol, Harvard University, and the University of Texas, Austin. He serves as the Professor-In-Charge of the Iowa State University Data Science program. He is also a professor in the software engineering program, information assurance program, and the human-computer interaction program at the university. Prof. Rajan earned his Ph.D. in Computer Science from the University of Virginia in August 2005. Since then he has been recognized by the US National Science Foundation (NSF) with a CAREER award in 2009, by the Iowa State University College of LAS with an Early Achievement in Research Award in 2010, a Big-12 Fellowship in 2012, a ACM Senior Membership in 2014, an exemplary mentor for Junior Faculty award in 2017, a Kingland Endowed Professorship in 2017, an ACM Distinguished Membership in 2017, and a US-UK Fulbright Scholarship in 2018. He is an associate editor of the IEEE TSE journal, and the ACM SIGSOFT SE notes. He was inducted into Sigma Xi in 2017, the Scientific Research Honor Society. Prof. Rajan specializes in Data Science, Cyberinfrastructure for Big Data, and Specification and Verification of Data-intensive software.

Kaeli Samson is currently a Statistician at the University of Nebraska Medical Center in Omaha, NE. She has a Master of Arts in Psychobiology from the University of Nebraska Omaha and a Master of Public Health in Biostatistics from the University of Nebraska Medical Center. She is certified in both Base and Advanced SAS, and is currently working on a graduate certificate in Geographic Information Science from the University of Nebraska Omaha.

Delayne Stokke has been a SAS programmer and analyst since 1986. He has presented papers at local, regional and international users group meetings, and has been co-chair of the Midwest SAS Users Group annual meeting on two occasions (2003 and 2007). Delayne is a Certified Advanced Programmer for SAS9. He works for Wells Fargo in West Des Moines, IA, where he provides support and consultative services to SAS users.

Daniel Walderbach is a business analyst specializing in SAS automation for Wells Fargo. He has a BA in Technology Education with a minor in Computer Information Systems from the University of Northern Iowa. He has 9+ years of experience utilizing SAS to produce and automate reports for various business units and companies.
Xiaoping Wang, Ph.D. is an Administrative Consultant at the Iowa Department of Education. She has more than 20 years of SAS experience on data reporting and education research. Prior to work for the state, Xiaoping was a consultant in Medical Education, in the University of Iowa. Xiaoping has received her Ph.D. in Educational Psychology Measurement and Statistics from the University of Iowa.

Thomas White is a Credit Risk Analytics Consultant at Wells Fargo. He has over 10 years of experience using SAS for various ETL, analysis, and reporting responsibilities within consumer lending, compensation, and marketing. He has a BA in Accounting from the University of Northern Iowa and is pursuing a MS in Business Analytics from the University of Iowa.

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 25 years of SAS experience in Financial, Insurance, Marketing, Government, Education, and Pharmaceutical industries. John is Vice President of MidWest SAS Users Group. He is currently leading the activities of Iowa SAS Users Group and also supporting Nebraska SAS Users Group.

The 2019 annual MidWest SAS Users Group conference will be held September 29 through October 1, 2019, at the Hyatt Regency Chicago. For more details please visit www.mwsug.org.
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SAS Training Classes

Date and Course title

5/14/19  (Tue 8:30 a.m. to 4:30 p.m.)(C1)  Chart Smart: Create Communication-Effective Graphs with SAS ODS Graphics
5/15/19  (Wed 8:30 a.m. to 4:30 p.m.)(C2)  An Animated Guide: Knowing SQL internals makes coding easy
5/16/19  (Thur 8:30 a.m. to 4:30 p.m.)(C3)  An Animated Guide: SAS Macros from beginner to advanced

Registration fee

•  $100 per full-day class

Location

Room B50 (Tue, Wed)
Room B100 (Thur)
Grimes State Building
400 E. 14 Street Iowa Dept of Education
Des Moines, Iowa 50319

Direction and Parking

•  Get on I-235 when you enter Des Moines
•  Get off on the East 14th St. exit
•  Take East 14th St. South two blocks
•  The Grimes State Building is on the SW Corner of East 14th St. & Grand Ave. Parking is nearby.

Class supply

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

Cancellation Policy

No refund will be provided but substitution is accepted with advance notice. Please email your substitution notice to dsm1day@gmail.com

Notice

Proceeds from these SAS classes will be used for the One-day SAS conference. Thanks for your support!

Additional Local SAS Classes

Contact John Xu at johnxu@1st-consulting.com or (515) 778-4093, if you are interested in other SAS training classes.
(C1) Chart Smart: Create Communication -Effective Graphs with SAS® ODS Graphics

Tuesday, 5/14/2019, 8:30 a.m. – 4:30 p.m.
Instructor: LeRoy Bessler, Ph.D., Bessler Consulting and Research

Learn how to create graphs, charts, and plots that are quickly, easily, and unambiguously interpreted, for correct understanding and reliable inference. This full-day course requiring no prior experience includes:

- Graphic design best practices (which apply to any software)
- Controlling software features for optimal results—converting the challenge of options to The Best Choice Right From The Start
- Scatter plots, line plots, regression plots, needle plots, bar charts, waterfall charts, pie charts, donut charts, histograms, heat maps, etc.
- Display of related charts/plots in an array or matrix for easy comparison
- Creation of images for insertion or paste-in to other applications/documents
- Packaging images directly in popular destinations, such as Excel, PDF, Word, and PowerPoint
- Creation of web graphs (HTML) with mouseover text and hot links to other information and/or between different graphic views
- Use of color to communicate, not to decorate
- Use of attribute maps

For anyone needing to show distribution of a measure of interest based on geographic unit area (e.g., by state or county) in a map, SAS/GRAPH PROC GMAP will be introduced as an extra.

Students receive tip sheets, course materials, and ready-to-adapt example code as hardcopy, digital files, and zip files.

(C2) An Animated guide: Knowing SQL internals makes coding easy

Wednesday, 5/15/19, 8:30 a.m. – 4:30 p.m.
Instructor: Russ Lavery

PROC SQL is very a powerful tool for querying data and is so versatile that it should be the entry point for learning SAS. If you know PROC SQL, you can use it in place of many other SAS procedures. It often allows you to “get the job done in SAS” without knowing all of SAS. It is the Swiss army knife of procedures and should be understood by every programmer and statistician.

In addition to PROC SQL being important in SAS, learning SQL is the key to learning other software and is an important career skill. SQL is the basis for Queries in M.S. Access, Oracle, Business Objects, and many other packages.

SQL has been difficult to learn because SQL has been a “black box”. The historical teaching method has been to have the student run dozens of SQL queries until s/he recognizes a pattern – but it has been impossible to explain why results come out as they do. This seminar shows a graphical model of previously undocumented PROC SQL internal processes and makes PROC SQL easy to learn.
The major deliverable of this seminar is the graphical representation of the SQL process and we use that graphical model to develop rules for describing, and predicting, the SQL process. These descriptive rules translate directly into coding rules and allow a programmer to quickly code PROC SQL queries. This seminar starts as if you know nothing and progresses to advanced topics.

- The graphical model of SQL Queries
- Presenting data
- The graphical model of SQL sub-Queries
- Non-correlated sub-queries
- SQL Joins
- SQL as an environment
- Integrity constraints
- SQL options
- Indexes and the where clause
- Displaying Query Results
- Summarizing data
- Correlated sub-queries
- SQL joins vs Data step Joins
- SQL joins vs Data step Joins
- Multiple SQL joins and the pivot table
- The EXCEPT operator
- The UNION operator
- The INTERSECT operator
- The OUTER UNION operator
- Creating views with the SQL procedure
- Dictionary tables
- SQL Performance
- The SQL optimizer and the where clause

There are no in-seminar computer exercises and laptops will not be needed. However, there will be interactive group exercises during the seminar, to aid in understanding and increase retention of the presented material.

Take Aways to help your review after the seminar:
- A booklet describing all examples in the seminar (Think: a seminar transcript, all code, and selected slides). If you register before April 25, it will be in color and easier to read.

(C3) An Animated Guide: SAS Macros from beginner to advanced

Thursday, 5/16/19, 8:30 a.m. – 4:30 p.m.
Instructor: Russ Lavery

The seminar leader, Russ Lavery, has given these presentations both internationally (Europe and Asia) and state-side at such institutions as Harvard, UPenn, Rutgers and Philadelphia University and this seminar has been selected for an “Extra-Free seminar” at several conferences.

Audience for this seminar: This will NOT teach “basic SAS” and is NOT for people with less than 3 months (preferably people have 6 months) of SAS experience. Experienced programmers will see a graphical model of SAS that greatly simplifies thinking about macros. This graphically presented paradigm will help experienced programmers explain their macros to junior programmers and is very valuable. It is expected that this full-day seminar will reduce, by 200 man-hours, the time for a new comer needed to learn macros.
Overview of SAS Macro Seminar

This seminar was developed to help students transition from doing analysis in SAS, as a student, to doing analysis in SAS as a working professional. While students often spend 90% of their time in statistical procedures, working SAS professionals spend 90% of their time in the data step and the macro language. Macros are used in almost every SAS corporate/consulting environment.

Learning the SAS macro language is often a time consuming, and stressful part of transitioning into the working world. Macros are used to make SAS code simpler and easier to maintain. Additionally, macros are used to automate processes and make processes/programs “production”. Without knowledge of SAS macros, a new employee cannot maintain, or sometimes even read, legacy SAS code (legacy code is code written by the last person who last had your job or by the person who sits in the next cube). Not being able to read code is a very unpleasant situation, with severe career implications.

For a high level summary, the seminar will cover:

The SAS supervisor      Tokenization                The Macro Catalog        The Macro Symbol Table  
• % let and &            Evaluating the &&&      Call Symput&Symget    Call Execute  
• Using macros to automate a process (two common ways to make a program),
• Using macros to create data driven programs
• Important “Take Aways” from the seminar are:
  • 1000+ lines of SAS macro examples (all the examples in Seminar)
  • Sample Code for how to perform 4 common Macro tasks. This can be used as “starter code” when on a job as well as a “self-test on Macro” concepts.

Below is a detailed list of topics covered in the macro seminar

Four essential skills in 6 examples

Skill 1) wrap code in a macro and call it with different parameters

Skill 2) Automate jobs (have your program write your program)
  a) automate using a % do loop and the &&state&i
  b) automate using SQL and the %scan loop

Skill 3) Conditionally executing code with a %if

Skill 4) Making “macro code snippets” (macro’s that generate part of a SAS statement)

Components of the SAS system

Tokenization and the 4 types of tokens

The three compiles/executes that happen when running a macro program

The Macro Symbol Table and the Macro Catalog

Moving tokens into and out of the Macro Symbol Table and the Macro Catalog

Evaluating multiple ampersands (&StateNo&&StateNo&&&StateNo&&&&StateNo)
The effect of single vs double quotes

Global vs local variables

Rules that are applied to tokens as they flow into the Macro Catalog

Rules that are applied to tokens as they flow out of the Macro Catalog

Call Symput Basics

Symget Basics

An example of Call Symput and Symget

Call Execute: automating a series of reports with Call Execute and a ‘driver” file

The rules for the parameters in: Call Symput, Symget and Call Execute.

Single vs double quotes in Call Execute parameters.

There are no in-seminar computer exercises and laptops will not be needed. However, there will be group exercises during the seminar, to aid in understanding and increase retention of the presented material. Groups will be formed at 8:30 AM. Please be on time so that you do not disrupt the others in the class.

Take Aways to help your review after the seminar:

- A booklet describing all examples in the seminar (Think : a seminar transcript, all code and selected slides)
- SAS add-in providing context sensitive help (for SAS enhanced editor)
- Example code showing common Macro tasks - to modify and then use at your job
Iowa SAS® Users Group

Iowa SAS Users Group is a local users group organized to:

- Facilitate communications with SAS Institute, Inc., and among users of SAS® in Iowa
- Instruct members how to better use SAS® programming tools
- Keep members informed about new SAS® versions and products
- Inform and educate the public about the value and benefit of SAS® software.

The Iowa SAS Users Group organizes the Annual One Day Conference every year. We also occasionally schedule additional mid-year meetings as topics arise.

We have had 11 One-Day Conferences with attendance range from 125 to 340 at Corteva Agriscience’s Carver Conference and Learning Center. The one-day conference is typically scheduled in May or June.

Iowa SAS® Users Group maintains a web site at:

The meeting information is posted on the web site. The web site has a local SAS® news section and a local SAS® jobs section. Job postings are free although in-kind donations are welcome.

We also invite you to join our LinkedIn Group at:
https://www.linkedin.com/groups/12173714/

If you would like more details, please send an email to dsm1day@gmail.com.

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