

## BASUG Quarterly Meeting Announcement

Join us for a variety of Base SAS techniques. Some of them newer: like creating PowerPoint output, the Hash Object, and ODS Layout. And take a new look at some old friends: like the LAG function and SAS styles. Our presenters come from near and far: a local BASUG Member and a speaker from afar who we wouldn't otherwise get to hear.

*After the meeting, we will provide an informal light buffet lunch for all attendees. We hope you can stay for this opportunity to network and socialize with your fellow SAS users.*

<b>Topic</b>	<b>SAS Coding Techniques: New and old, from near and far.</b>
<b>When</b>	<b>Wednesday, March 22, 2017</b> 8:15AM – Noon
<b>Where</b>	Microsoft New England Research and Development Center (NERD) <sup>1</sup> One Memorial Drive Conference Center, First Floor Cambridge, MA 02142 857-453-6000 
<b>Directions</b>	Please visit the <a href="#">meeting site directions page</a>
<b>How to register</b>	Individual, on-line registration required. Please visit the <a href="#">event registration page</a>  NO WALK-INS!
<b>Payment</b>	\$10 – if paid on-line by Friday, March 10, 2017 \$15 – if paid on-line (by <b>NOON</b> Tuesday, March 21, 2017) \$20 – at-the-door (checks only– and pre-registration is required)
<b>Contact</b>	If you have question about the meeting, contact <a href="#">the meeting organizers</a> : Lori Goldman Brian Saper

### Agenda\*

8:15AM	Sign in and Continental Breakfast
8:45AM	Announcements
9:00AM	<a href="#"><u>Leads and Lags: Static and Dynamic Queues in the SAS® DATA STEP</u></a> <i>by Mark Keintz, Wharton Research Data Services</i>
9:50AM	Break
10:05AM	<a href="#"><u>Proc Report, the Graph Template Language, and ODS Layouts: Used in Unison to Create Dynamic, Customer-Ready PowerPoint</u></a> <i>by Amelia Stein, Curriculum Associates</i>
10:55AM	Break
11:10AM	<a href="#"><u>From Stocks to Flows: Using SAS® HASH objects for FIFO, LIFO, and other FO's</u></a> <i>by Mark Keintz, Wharton Research Data Services</i>
12:00	Networking Lunch

\*Note: Times (and sequence) are approximate and subject to change. Please re-visit the BASUG website ([www.basug.org](http://www.basug.org)) for updated information.

## Abstract and Speaker Biographies

### **Proc Report, the Graph Template Language, and ODS Layouts: Used in Unison to Create Dynamic, Customer-Ready PowerPoint**

*by Amelia Stein*

Twice a year, we create PowerPoint decks and supplemental tables for over 100 customers to present data on their system performance to help inform their decision-making. We use one SAS program to create PowerPoint slides that incorporate the corporate template and include dynamic-editable tables, charts, titles, footnotes, and embedded hyperlinks that open additional drill-down data tables in either PDF or Excel format. These additional data tables are saved in automatically created categorized folders.

In this SAS program we first employ SAS styles, ODS Layout, and ODS PowerPoint to format the slides and automate creation. Macros and X Command are also utilized to create categorized folders for organization. Finally, the Graph Template Language, Proc Report, and ODS PDF are utilized to create the customer-specific charts and tables for the main deck and the supplemental tables that are linked by hyperlinks on the corresponding slides of the PowerPoint. This program starts from the raw data source and the output is a complete customer deck that is ready for presentation.

In this paper we share examples of how to create a completely customized PowerPoint deck using SAS styles and ODS Layout. We also share tips and tricks that we have learned regarding what works and what does not in the ODS PowerPoint destination. In addition, we demonstrate the program flow to highlight each type of functionality required to create a multi-level custom report.

This paper is a collaboration of three colleagues who worked together at Curriculum Associates, an education technology company based in the greater Boston area. Today, Amelia Stein will do the honor of presenting this paper.



At her previous position, **Amelia Stein** was an assistant professor of mathematics at Broome Community College. Driven by her desire to use her math background and analytics skills in solving real-world problems, she joined Curriculum Associates in 2015. In her current role as a research analyst, she uses SAS daily to make sense of millions upon millions of rows of student performance data. Amelia has lived in the greater Boston area for over a year and likes everything New England has to offer. In her spare time, she enjoys a glass of homemade wine and does CrossFit, although not in that particular order.

### **Leads and Lags: Static and Dynamic Queues in the SAS® DATA STEP**

*by Mark Keintz*

From stock price histories to hospital stay records, analysis of time series data often requires use of lagged (and occasionally lead) values of one or more analysis variable. For the SAS® user, the central operational task is typically getting lagged (lead) values for each time point in the data set. While SAS has long provided a LAG function, it has no analogous “lead” function – an especially significant problem in the case of large data series. This paper will (1) review the lag function, in particular the powerful, but non-intuitive implications of its queue-oriented basis, (2) demonstrate efficient ways to generate leads with the same flexibility as the lag function, but without the common and expensive recourse to data re-sorting, and (3) show how to dynamically generate leads and lags through use of the hash object.

### **From Stocks to Flows: Using SAS® HASH objects for FIFO, LIFO, and other FO’s**

*by Mark Keintz*

Tracking gains or losses from the purchase and sale of diverse equity holdings depends in part on whether stocks sold are assumed to be from earliest lots acquired (a FIFO queue) or the latest lots acquired (LIFO). Other inventory tracking applications have a similar need for application of either FIFO or LIFO rules.

This presentation shows how a collection of simple ordered hash objects, in combination with a hash-of-hashes is a made-to-order technique for easy data-step implementation of FIFO, LIFO, and other less-likely rules (e.g. HIFO and LOFO).

**Mark Keintz** has been using SAS® since it was documented in one book. His interests are largely in development of applications for financial research and education, addressed in several presentations at SAS Global Forums and various regional SAS user groups. Mark's primary SAS expertise is in DATA step programming, Hash programming techniques, efficient use of large data sets, and macro programming.

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## **BASUG Contacts**

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- (1) The Microsoft New England Research & Development Center (NERD) is a research and software innovation campus located in the heart of Cambridge, Massachusetts. The NERD vertical campus spans two buildings with its primary presence and conference center located at One Memorial Drive and a recently renovated and expanded space located at One Cambridge Center. NERD is home to some of Microsoft's most strategic teams including Microsoft Research New England, Microsoft Application Virtualization (App-V), SharePoint Workspace, Microsoft Technical Computing, Microsoft Advertising, Microsoft Lync, Microsoft Office 365 and more. NERD has become a hub of activity for the local tech community and has hosted more than 500 events and welcomed more than 40,000 visitors during the past two years.