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Once You "Know" SAS® … How to Keep Learning It

Brenda Beaty, University of Colorado Denver, Denver, CO

ABSTRACT

The world of SAS® is an ever-expanding, ever-changing one. With each new release come new features and new capabilities. To keep up programming skills, SAS users need opportunities both to learn SAS and to keep learning SAS. This paper outlines various methods to acquire and update SAS knowledge, including users groups, Web resources, listservs and other opportunities.

INTRODUCTION

Since SAS was founded in 1976, the number of users and the size of the software have both mushroomed. In 1977, SAS had seven employees, whereas now almost 11,000 people work for SAS in over 400 offices worldwide. The software has grown accordingly, and therefore "learning SAS" is a continual process. Many opportunities exist for continuing SAS education, and I've compiled a few of them in this paper.

USERS GROUPS

LOCAL USERS GROUPS

There are 201 registered SAS Users Groups; 124 in-house, 68 local and nine special interest groups. Information on local Users Groups is available at: http://support.sas.com/usergroups/namerica/local.hsql.

REGIONAL USERS GROUPS

The US has six regional Users Groups: MWSUG, the MidWest SAS Users Group; NESUG, the NorthEast SAS Users Group; PNWSUG, the Pacific Northwest SAS Users Group; SCSUG, the South-Central SAS Users Group; SESUG, the SouthEast SAS Users Group; and WUSS, the Western Users of SAS Software. In addition, there are special interest Users Groups such PharmaSUG, the Pharmaceutical Industry SAS Users Group, which also holds annual conferences.

There are 19 Users Groups in Canada, six in Australia and New Zealand, as well as Users Groups in Japan, Korea, Singapore, and sites throughout Europe and Latin America.

SAS GLOBAL FORUM

SAS Global Forum is the new name given to the SAS Users Group International in 2007. The first SUGI occurred in 1976, the same year SAS incorporated and had 206 attendees. By contrast, the 2009 SAS Global Forum had over 3,300 attendees with almost a quarter of them being from outside the United States. The 2011 SAS Global Forum will be April 4-7 at Caesar's Palace in Las Vegas, Nevada. Information on both regional users group conferences and SAS Global Forum is available at: http://support.sas.com/community/events/.

WEB RESOURCES

SAS-L

There is an online group forum called SAS-L. SAS users can e-mail their questions or problems to the group and many gracious, smart people endeavor to help. I often search the archives of SAS-L as a first step in trying to find a solution to a problem, proving to myself time and time again that yes, someone has already encountered the problem I'm working on or has asked the same question I'm wondering about! The main Listserv server is at the University of Georgia, and it is also available to the Usenet newsgroup comp.soft-sys.sas. To subscribe to the mailing list or search or view the archives of past messages, visit SAS-L or Google Groups:

http://www.listserv.uga.edu/archives/sas-l.html

http://groups.google.com/group/comp.soft-sys.sas/topics

SAS-L started in 1986. You can access archives dating back to July, 1993 in Google groups, and archives since January of 1996 on the UGA Web site. Arthur Tabachneck's presentation at SGF 2009 cited over *325,000* SAS-L postings since 1986 and over 35,000 distinct email addresses. In 2008, there were over 28,500 posts, which gives an average of over 110 postings per business day; therefore, I recommend you use the 'digest' feature on the UGA Web site or read on Google groups at your leisure.

Here are a few tips on how to ask a question on SAS-L. Be sure to write a descriptive subject line, describing the

area of your problem, instead of the subject line: "Help!" There are many subject-area experts on SAS-L, and if your subject line includes one of people's specific areas of expertise, you are likely to catch their interest in helping you. Also, be sure to state what you've tried and where you've looked (e.g. SAS online documentation) for help in solving your problem. For DATA STEP issues, a brief example data set of what you have, and the data set that you want is an invaluable guide for those wishing to help with your problem. Also include your SAS code, if appropriate, and any ERRORS or WARNINGS from the log.

SEARCHABLE LISTING OF USERS GROUP PAPERS
http://www.lexjansen.com/

A gentleman by the name of Lex Jansen has done the SAS world a huge favor by putting together this Web site: www.lexjansen.com. This site allows you to search over 10,000 SAS papers presented at SAS Users Group Conferences. You can search by author, title or keywords. Almost half of these papers come from SUGI/SAS Global Forum (almost 4,200 papers), with the rest coming from PharmaSUG, NESUG, SESUG, PhUSE, WUSS, MWSUG, PNWSUG, SCSUG, and CDISC forum.

SASCOMMUNITY.ORG
http://www.sascommunity.org/wiki/Main_Page

SASCommunity.org is a Wiki-based Web site established in 2006 for SAS users around the world to collaborate and communicate. Because it is Wiki-based, anyone can edit almost any page. This means that users can add or change forums (sort of like chat rooms or bulletin boards), blogs, home pages, collaborate with other users, and many other things. The site is accessible without creating a User name or logging in, although you have to do both in order to edit pages. Features include Blogger's Corner, Events, Forums, Geographies, Opportunity Registry, Presentations, Provider's Registry, Quick Links, SAS Books, Sasopedia, Talk to Us, and Users Groups. Some recently added features on SASCommunity.org include a Tip of the Day Feature, the ability to include your LinkedIn profile, YouTube videos, and Twitter feeds, and a new Employment Opportunities page.

http://www.sconsig.com/
The SAS® Consultant Special Interest Group (CONSIG) site has links to various Web sites for SAS support, Training and Education, Documentation or Books, Newsletters and Articles, SAS related products/services, Tips and Techniques, Career and employment opportunities, a list of SAS consultants, a list of SAS resumes, a list of companies using SAS, SAS bulletin boards and chat rooms, SAS Users Groups, and other SAS Web sites.

http://sodapop.pop.psu.edu/
Stands for Simple Online Data Archive for POPulation studies. SodaPop comes from the Population Research Institute at Pennsylvania State University. It holds the PRI's data archive, has resources for many large secondary data sets, including MEPS, SEER, and NHANES, among others. You can also search across collections for variables, and extract for download an analysis-ready subset of a data collection in SAS format. Note that not all data on this site are available to the public.

http://www.sasprofessionals.net/
One more platform to consider is the SAS Professionals Social Community: Started out of SAS UK, but truly global now and almost like a SAS specific Facebook with a focus on more technically oriented questions. Over 2100 members have signed up and some of the key experts from within SAS are also participating. You can get in contact with the organizers from the site pages, if you have any questions regarding it.

SUPPORT.SAS.COM/COMMUNITY
http://support.sas.com/community/

The 'Community' page at Support.SAS.Com includes pages dedicated to Users Groups, Events, E-newsletters, User Experience, Author with SAS, RSS & Blogs, and Discussion Forums. I'll talk about each of these briefly.

The 'Users Groups' page includes information on SAS Users Groups worldwide and a way to find a Users Group in your area.

The 'Events' page has information on upcoming conferences, events and Webcasts. There is a link to upcoming and on-demand Webcasts on this page as well.

On the 'E-newsletters' page, you may view the archives or subscribe to any or all of the following E-newsletters:
- SAS Tech Report: Comprehensive publication for SAS software users, system administrators, and IT staff. Monthly news items cover areas important to all customers: technical support, training, publications,

certification, events and more.
- SAS Statistics and Operations Research News: This quarterly newsletter informs statisticians and OR specialists, econometricians and data analysts about SAS software news and highlights specific to their interests.
- SAS Training Report: Monthly news about the latest training opportunities, conferences and seminars in North America.
- SAS Publishing News: Monthly information about new books and online documentation from SAS Publishing.
- SAS Global Certification News: Quarterly news, events, and special offers for the SAS certified professional.
- SAS Business Report: Monthly business news for decision makers and executives.

The 'User Experience' page provides users with an opportunity to get involved in the user interface (UI) design of SAS products. The site provides information about user-centered design activities and a way for users to sign-up to participate in those activities.

The 'Author with SAS' page features information on the SAS Press publishing program, authors, and books. Additionally, you can find archived interviews with selected authors discussing their books and projects, as well as archived Webcasts from various SAS Press authors.

On the 'RSS & Blogs' page, you can sign up for RSS feeds on your favorite SAS topics. For those of you like me, who haven't used RSS much, RSS stands for Really Simple Syndication. It is a notification system used to alert individuals when new content is available on a Web site. To read or subscribe to an RSS feed, you must use an RSS feed reader or a browser with an RSS reader built in (Internet Explorer 7, Firefox and Safari all have built-in feed readers). You can get feeds for SAS Notes, SAS Samples and customer success stories, among others.

The Blogs on this page allow you to hear from SAS personnel, in their own words. SAS Blogs Home is located at: http://blogs.sas.com/, and includes such catchy titles as "A Shot in the Arm" (health and life sciences), "BI and the Chicken Pot Pie," "bLog-Normal Distribution" (analytic lessons, etc.), "The SAS Dummy - A SAS blog for the rest of us", and "The Text Frontier - Text Mining, Voice Mining & Unstructured Data Analysis."

On this page, you may also subscribe to two listservs from SAS Technical support SNOTES-L and TSNEWS-L. SNOTES-L distributes information about the availability of SAS Notes on the Customer Support Center Web site, and TSNEWS-L distributes technical information including problem correction notifications, announcements about Institute hours/closings, and information on existing and new maintenance levels.

Finally, on the 'Discussion Forums' page, you will find online resource for peer-to-peer information exchange on specific topics. SAS employees occasionally drop into a forum with an informational post or help for a difficult question. The Forums include SAS Procedures, SAS Statistical Procedures, SAS Macro Facility, Data Step and SAS Language Elements, ODS and Base Reporting, SAS/GRAPH and ODS Graphics, SAS Stored Processes, SAS Enterprise Guide, Integration with Microsoft® Office, JMP Software, SAS Forecasting, SAS and Clinical Trials, SAS in Health Care Related Fields, SAS Data Mining and Text Mining, Mathematical Optimization and Operations Research with SAS, and SAS and Assistive Technology.

UCLA WEBSITES

The UCLA websites have proven to be useful as well. They contain a wealth of information on SAS usage, as well as statistical resources.

http://www.ats.ucla.edu/stat/ - Statistical computing homepage with programming examples and statistics resources.

http://www.ats.ucla.edu/stat/sas/default.htm - Resources to help you learn and use SAS, including a SAS starter kit, classes and seminars, learning modules, and Frequently Asked Questions.

http://www.ats.ucla.edu/stat/seminars/ - List of online seminars and classes offered for SAS, including regression, logistic regression, repeated measures, survival analysis, multilevel modeling, using arrays, introduction to macros, ODS, and graphics.

http://delicious.com/statcomp - UCLA ATS (Academic Technology Services) Statistical Consulting Group's bookmarks. This page has a list of websites that the UCLA group has bookmarked, with topics such as multilevel modeling, power analysis, survey data and R. This page has over 500 bookmarked pages, all tagged with keywords.

OTHER

GIVE A TALK AT A LOCAL OR REGIONAL USERS GROUP OR AT SAS GLOBAL FORUM
Don't laugh till you try it…..I've learned something new every single time I've done this!

SAS PRESS
SAS Institute has its own book publishing arm, known as SAS Press. There are many, many books written by SAS users on most any topic. For the beginner, I highly recommend: Delwiche, Lora D. and Slaughter, Susan J. 2008. *The Little SAS® Book: A Primer, Fourth Edition.* Cary, NC: SAS Institute Inc.

CONCLUSION
There are always new things to learn and ever-evolving ways to improve your knowledge of SAS.

REFERENCES
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SAS: Corporate http://www.sas.com/corporate/

SAS Support: http://support.sas.com

SAS Support Community: http://support.sas.com/community/

SASCommunity.org: http://www.sascommunity.org/wiki/Main_Page

SAS-L: http://www.listserv.uga.edu/archives/sas-l.html

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CONTACT INFORMATION
Your comments and questions are valued and encouraged. Contact the author at:
      Brenda Beaty, MSPH
      Colorado Health Outcomes Program
      University of Colorado Denver
      Mail Stop F443
      PO Box 6508
      Aurora, CO 80045-0508
      Work Phone: (303) 724-1076
      Fax: (303) 724-1839
      E-mail: Brenda.Beaty@ucdenver.edu

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