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The SouthEast SAS® Users Group

SESUG 2005

Portsmouth, Virginia

13th Annual Conference

Renaissance Portsmouth Hotel & Waterfront Conference Center
Portsmouth, Virginia
October 23-25, 2005

Conference Program

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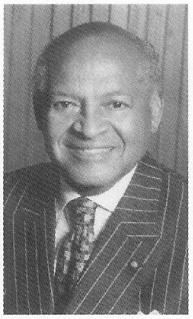
LETTER FROM THE MAYOR

CITY OF PORTSMOUTH, VIRGINIA
Established 1752
Office of the Mayor
(757) 393-8746 • Fax: (757) 393-5378

Dr. James W. Holley III
Mayor

October 1, 2005

Greetings:



It is indeed my honor and privilege as Mayor of the City of Portsmouth to extend a warm and cordial welcome to everyone at the SouthEast SAS Users Group (SESUG) at the Renaissance Hotel and Waterfront Conference Center on October 23rd – 25th, 2005.

I invite you to experience firsthand our historic downtown district highlighting our diverse collection of antique homes. Tour our five museums: the Children's Museum of Virginia, Naval Shipyard Museum, Lightship, Courthouse Galleries and the Virginia Sports Hall of Fame. To round off your stay, enjoy our wonderful quaint restaurants, antique, and specialty shops. For the last several years, Portsmouth has been enjoying a Renaissance that has added many new facilities and attractions.

It is my hope and earnest prayer that your conference will be an overwhelming success. May God continue to bless each of you with good health and happiness in your days ahead.

Sincerely,

Dr. James W. Holley III

Dr. James W. Holley III
Mayor

P.O. Box 820 • Portsmouth, VA 23705-0820

CONFERENCE INFORMATION & HIGHLIGHTS

REGISTRATION & INFORMATION AREA

Location: **Holley Ballroom Registration Area**
Time: Sunday 2:00-5:00 pm, Monday 7:00 am-5:00 pm, Tuesday 7:00 am-12:00 pm

Your ***first*** activity at SESUG 05 should be to pick up your registration materials (bag, Program, Proceedings, etc.). Registration staff will be on duty to answer your questions and distribute materials. **This is the place to go for information** such as: messages, lost and found, promotional items, registration materials, information about Portsmouth, and any last-minute changes to the schedule of events.

PREVIEW OF SESUG 05

Location**: Portsmouth Ballroom VII**
Time: Sunday 5:00 pm-6:00 pm

Get started on the right foot for SESUG 05. Presented by the SESUG 06 conference co-chairs, you will learn all you need to know to make your conference experience successful***. This is a great session for newcomers and return attendees alike.*** Conference planners have added new features as well as continuing with many others. We'll give you a quick tour of the many exciting events starting with the Opening Session right through the Closing Session which will be the kickoff for SESUG 06. One of the special features of a conference is the opportunity to network - and the Preview Session is the first such opportunity. So come to the SESUG 05 Preview Session to learn more about the conference itself, the conference leaders, and your fellow attendees. Questions about how things work at SESUG are also welcome.

OPENING SESSION & KEYNOTE ADDRESS

Location: **Portsmouth Ballroom IV**
Time: Sunday 8:00 pm-9:15 pm

The official start of the conference will be at the ***Opening Session*** on Sunday evening at the **Renaissance Portsmouth Hotel and Conference Center**. Conference planners will introduce some of the key conference planners and discuss some of the activities of the next 2 days.

We are honored to have **Vincent DelGobbo** of SAS Institute as our **Keynote Speaker.** He'll be kicking off SESUG 05 in style with his presentation ***"We're not in Kansas Anymore".***

A lot of things have changed in SAS over the last 29+ years. If you're like most people, you woke up one day and realized that you were living in a strange, new world. Come hear one SAS user's journey to Oz ... and back!

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

WELCOME RECEPTION

Location: **Portsmouth Ballroom V & Foyer & Terrace**
Time: Sunday 9:15 pm-11:00 pm

Network with your fellow SAS associates while you enjoy complimentary food and drinks. Relax and get reacquainted with folks you haven't seen since last year's SESUG. Guest Program participants are welcome, too.

SESUG Silent Auction for Hurricane Recovery

Location: **Holley Ballroom Registration Area**
Time: Monday 10:00 am-7:00 pm (will be outside Demo Room from 5:30 to 7:00 pm—Holley I-IV)

To assist with Katrina & Rita recovery, SESUG, SAS, and others have donated items for a silent auction to raise money for the hurricane recovery effort. All funds will go to the SAS Education Fund. A description of the SAS Education Fund is included below. SAS is matching the contributions to this fund for hurricane recovery efforts this fall and has recently agreed to match the Regional conferencees contributions to this account, too. ***So come by and help out the cause and get some great items!***

Tables will be set up with the items and available Monday next to the Registration Area. The tables will be moved to outside the Demo Room at 5:30 pm so they will be available during the SAS Reception. At 6:45 pm, during the SAS Reception in the Demo Room, the lucky winners will be announced. Please be prepared to pick up any items you have won at that time with cash, check, or credit card. Cash donations will also be gratefully accepted. The SAS Education Fund is a qualified charity for tax purposes and the value of your contribution over and above the value of the item received might be tax deductible. Please contact your accountant or tax preparer for more details.

Here are just some of the items already donated at the time of this printing and other items of various values are still coming in:

From SAS:

Three SUGI Registrations - approximate value = $595 each
Computer bag - approximate value = $25
Leather portfolio - approximate value = $37
Golf umbrella - approximate value = $24
Gym bag - approximate value = $33
Duffel bag - approximate value = $47
Backpack - approximate value = $25
Rolling backpack - approximate value = $35
Wine & cheese set - approximate value = $15
Black briefcase - approximate value = $18
Golf vest - approximate value = $38
Fleece jacket - approximate value = $35
Rain slicker - approximate value = $38

From others:

Two 2006 SESUG Registrations - approximate value = $400 each
Martha's Plantation Cookbook - approximate value = $25

The SAS Education Fund

SAS has established the SAS Education Fund, a permanent, non-profit charitable organization with both short-term and long-term missions. The fund's short-term mission is to provide relief efforts related to education in the areas affected by Hurricane Katrina and Rita. Such efforts may include rebuilding or re-equipping schools devastated by the storm.

The fund's long-term mission is to provide similar relief in the wake of any future calamities or pressing needs, whenever and wherever they occur.

Dining Out for Monday Lunch

Location: **Area Restaurants**
Time: Monday 12:00 pm-1:30 pm

The Renaissance Portsmouth Hotel is within walking distance of ***dozens*** of restaurants (fast food, fine dining, and everything in between). You cannot ask for a better selection to suit every taste and budget. For weekends especially, reservations are highly recommended for restaurants that take them.

If you want to try out an area restaurant and don't want to go alone, **join your SESUG colleagues for lunch on Monday**! See the Registration Area for restaurant locations. Venture out for Monday lunch since we don't want you to go too far on Sunday and Monday night for dinner.

SAS Reception

Location: **Holley Ballroom I-IV**
Time: Monday 5:30 pm-7:00 pm

Join SAS for a reception as we celebrate our users. Mingle and relax with other SESUG attendees and enjoy food, drinks, entertainment and giveaways. We are hoping that this gathering will provide everyone a chance to mingle with the SAS Institute staff and the SESUG 05 Sponsors in a relaxing, comfortable environment.

Visit the General Customer Support Booth to explore ways you can put the full range of SAS services and support to work for you. Come learn more about SAS Business Intelligence and how to bring the power of SAS to everyone in your organization. We can make sure you are getting the ultimate benefit from all of the resources available to you as a SAS customer. Get ideas for building awareness of the value of SAS within your organization and more.

SAS Developer's Road Trip

Eight SAS R&D staff from the SAS world headquarters in Cary, NC will be experiencing SESUG for a day on Monday, October 24. This team is in addition to the 10 SAS staff previously scheduled to present at SESUG. Attending SESUG for a day will provide the opportunity for extra SAS R&D staff to mingle with SAS users, attend presentations, participate in Demo Room activities, and do ad hoc discussions with SESUG attendees. So - if you think you're seeing a lot of SAS staff at SESUG on Monday - you're right! **Don't be shy - the SAS R&D staff wants to hear about how you're using SAS and how they can continue to improve SAS software.**

SESUG After Dark

Location: **Portsmouth Ballroom V & Foyer & Terrace**
Time: Monday 8:00 pm-???
Shortly after the SAS Reception will be ***SESUG After Dark*** complete with DJ, food, and refreshments. ***So bring your dancing shoes and be ready to party!***

Paper Presentations

Location: **Various Conference Rooms**
Time: Monday 7:30 am-5:30 pm, Tuesday 7:30 am-12:00 pm

The most obvious and prevalent feature of the conference are the paper presentations. Papers are delivered in 50 or 20 minutes followed by time for questions and transition to the next speaker. Speakers usually request that questions be held until the end of the presentation. There are seven papers being presented simultaneously about different topics, or "sections." Feel free to switch sections as needed — **no advance signup is required**. Most papers are found in the Conference Proceedings. If a paper was not available, there will at least be an abstract, followed by contact information for the author should you want to follow up after the conference.

Refer to Conference Program pages 16-48 for a complete list of paper abstracts and author(s) biography(ies).

For a quick glimpse at what is going on when each day, see the **Schedule At A Glance** on pages 13-15.

Posters & Video Posters

Location: **Holley Ballroom V&VI**
Time: All Day Monday & Tuesday until Noon

Drop by the poster area to meet the Poster authors on Monday from 1:30-2:30 pm.
People with more visually oriented presentations sometimes opt for Posters. They are also printed in the Conference Proceedings. Refer to Conference Program pages 33-35 for a complete list of Poster abstracts.

HANDS-ON WORKSHOPS

Location: **Amphitheater**
Time: Monday 7:30 am-4:30 pm, Tuesday 8:30 am-11:30 am

SESUG 05 is proud to announce the availability of Hands-On Workshops. We will be offering seven sessions of 80 minutes each on Monday and Tuesday, taught by well-known experts in the SAS community. Due to a limited number of machines, admission to Hands-On Workshops will be on a first-come, first-served basis. We will have additional seats in the back of the room on a space-available basis; these seats will be made available on a first-come, first-served basis prior to each Workshop.

Refer to Conference Program page 28-30 for a complete list of workshop abstracts and times.

GRAND LUNCHEON & FEATURED SPEAKER

Location: **Portsmouth Ballroom V**
Time: Tuesday 12:00 pm-1:30 pm

We are pleased and proud to have Barrett Joyner help us close out SESUG 05 as our Featured Speaker! Barrett Joyner, Senior VP of Sales and Marketing, Mi-Co, also a giant in the SAS world, will address the conference on Tuesday during lunch, before the closing session, on ***" Principles of Project Management OR Keep Khaos Under Kontrol".***

Are you wondering why we selected Project Management for the luncheon topic? After all, only some SAS users are project managers. Wrong! All SAS users are project managers in some way. Project Management is the process of fulfilling the responsibility for the successful completion of a project. It involves managing the resources (including people and computers), time, money and scope of a project. Maybe your project doesn't have a multi-million dollar budget with hundreds of team members but getting accurate reports to your boss before her meeting still requires good project management skills. All SAS users are part of a project team at some level. Barrett will share an informative and entertaining look at project management based on the many things he has learned and experienced over the years.

Barrett Joyner is Senior VP of Sales and Marketing for Mi-Co (www.mi-corporation.com) where he focuses on driving the customer engagement strategies for this digital writing mobile data capture company (Tablet PCs and Handwriting Recognition on Forms). Barrett has over two decades of leadership and management experience in enterprise software companies, including 16 years at SAS, the world's largest privately held software company. Barrett's positions at SAS included management positions in sales, marketing and executive management. For 8 years Barrett served as VP of Sales and Marketing and 2 years served as President of SAS North America. He has also served as CEO of FullSeven Technologies and Executive Vice President at SciQuest. Barrett frequently speaks and consults on the executive's role in building productive and fully aligned work teams. He holds a BA in Political Science from the University of North Carolina, Chapel Hill. Barrett is extremely pleased with his life because his wife, Stephenie, says she still loves him and the kids, Matt and Kate, are still speaking to him. He's still deciding if being called the "Jeff Foxworthy of the SAS world" is a good thing.

CLOSING SESSION

Location: **Portsmouth Ballroom V**
Time: Tuesday 1:30 pm-2:00 pm

We've saved the best for last. As SESUG 05 comes to a close on Tuesday afternoon during the Closing Session, the **SESUG 06 Chairs, Marje Fecht and Debbie Skinner,** will give us a preview of what to expect when we reconvene in **Atlanta, GA, October 8th to 10th** in 2006. PLUS, there will be **door prizes**, including great books and SAS paraphernalia from SAS Institute and a **free registration** to next year's conference. Most prizes require that the attendee be present at the Closing Session to win. ***You don't want to miss this!***

DON'T GO HUNGRY

Location: **Portsmouth and Holley Ballroom Foyers and SAS Demo Room (Holley Ballroom I-IV)**
Time: **Continental Breakfast—**Monday & Tuesday 7:00 am-8:00 am**—Portsmouth and Holley Ballroom Foyers**
Time: **Breaks--**Monday 9:30 -10:30 am and 3:00 -4:00 pm, Tuesday 9:30 -10:30 am -- **Holley Ballroom V&VI**

Plenty of food and drinks! To wake you up and get you started we will have a Continental Breakfast from 7:00 am-8:00 am on Monday and Tuesday in the **Portsmouth and Holley Ballroom Foyers ONLY**. Morning breaks from 9:30 am-10:30 am on Monday and Tuesday will be set up in the **Portsmouth and Holley Ballroom Foyers and SAS Demo Room**. The afternoon break from 3:00 pm-4:00 pm on Monday will also be set up in the **Portsmouth and Holley Ballroom Foyers and SAS Demo Room**. **Remember**—Beverages will be available all day Monday (7:00 am to 6:00 pm) and Tuesday (7:00 am to 12:00 pm) in the **Portsmouth and Holley Ballroom Foyers**.

WEEKEND WORKSHOPS

Location: **Washington, Madison, Jefferson**
Time: Sunday 8:00 am-5:00 pm

SESUG is pleased to offer extra-fee pre-conference training workshops before this year's conference. These sessions are given by **well-known SAS experts** selected by the SESUG conference leadership for their subject-matter knowledge and presentation skills, and provide a range of learning opportunities for SAS users at all experience levels. The discounted lodging rate at the hotel is available for attendees who want to arrive before the SESUG conference to attend these events.

Please note we have made changes this year to enable more attendees to take advantage of these in-depth workshops. We have **reduced the fees** and limited the workshops to Sunday only. Also new this year, we **will not cancel** a workshop except in the unlikely event the instructor is unable to attend the conference.

SAS DEMO ROOM AND SESUG SPONSORS

Location: **Holley Ballroom I-IV**
Time: Monday 9:00 am - 12:00 pm, 1:30 pm – 7:00 pm & Tuesday 9:00 am -12:00 pm

Be sure to visit the Demo Room, where you can:

- See demos of SAS software products.
- Register for valuable **giveaways**.
- Browse through new Institute documentation at the Publications Booth and order books at a special discount. The **Publications Booth** will be offering a **20% discount** on all SAS documentation ordered at SESUG 05 (certain restrictions apply).
- Stop by to meet **SAS developers** or ask questions of SAS service groups such as Publications, Technical Support, and Executive and User Events. **We welcome your feedback and input.**
- Visit the **General Customer Support** booth to explore ways to put the full range of SAS services and support to work for you. We can help you make sure you are getting the ultimate benefit from all of the services available to you as a SAS customer and that you are deriving maximum value from your SAS investment.
- Get ideas for building awareness of the value of SAS within your organization, assess the support needs of your SAS users, and more.
- **Meet with SESUG 2005 corporate sponsors**. Find out about their SAS related products and services.

Sponsorship of the SESUG conference is extremely important and appreciated! Several companies offering products and services that complement the SAS System have decided to be a part of SESUG 05. Most of these have elected to have a booth in the SAS Demo Room. Please see pages 9&10 of this Conference Program for their ads and visit them in the Demo Room and **thank them for supporting SESUG 05.**

SAS Press Authors Share Their Expertise at SESUG 2005

Be on the lookout for the following SAS Press authors who will be presenting at SESUG 2005: **Art Carpenter, Lauren Haworth, Frederick Pratter, Patricia Cerrito, Carol Matthews,** and **Jonas Bilenas**.

Interested in becoming an author yourself? Please visit the SAS Press booth and introduce yourself to Acquisitions Editor **Donna Faircloth**. Donna looks forward to speaking with you about authoring opportunities and also welcomes your book topic suggestions. If you're unable to speak with Donna at the conference, please drop us a line at **saspress@sas.com.**

Olde Towne Tour

Location: **Meet at Information Desk**
Time: Monday 2:00 pm-5:00 pm

We've arranged a special treat for our SESUG guests on Monday, October 24th. At 2:00pm, delight in a personalized walking tour of Olde Towne Portsmouth. Your tour leader will be dressed in a period costume. Upon returning from the tour, you will be treated to tea and scones in a restored 1880's Victorian home. The tour is approximately one and a half hours. Because of the intimacy of the tour, a limited number of tickets are available so please check with the Information Desk if you are interested.

Conference Courtesies

In response to requests from attendees at other SAS conferences in previous years, SESUG 05 has been designated a **no smoking conference**. Please refrain from smoking in the foyer areas and meeting rooms. You may, of course, smoke in other areas of the hotel where smoking is permitted.

Please remember that you cannot record, tape, or photograph ANY portion of any presentation without the express permission of the presenter.

Finally, when you're listening to a paper; please, please remember that there are people all around you trying to listen and enjoy the presentation too. We ask that you turn off the ringers of all cell phones, beepers, and watch alarms; keep conversation low and to a minimum; and when you leave, please take your glass, cup, or plate with you.

THANKS!!

Ribbons

Some attendees have ribbons attached to their name badges. These indicate their type of participation.
The ribbons and their meanings are:

PURPLE	**SESUG Executive Council**: co-chairs of past & future conferences
ROYAL BLUE	**Section Chairs**: organizers of presentations and facilities
PINK	**Volunteers**: Session Coordinators, facilitators of presentations in at least one session per Section, and supporters in other activities like Registration
RED	**Speakers**: presenters of Invited (50 min.), Contributed (20 min.), or Coders' Corner (10 min.) papers, or of posters
SEA BLUE	**SAS Institute participants**: Invited presenters & "Demo" area support staff
BLACK	**Vendors and Exhibitors**
GOLD	**Guests**

The Conference Planners and SESUG Executive Council members have been intimately involved with the planning of the conference. If you have any questions or comments about SESUG 05, look for the people with the Purple ribbons and talk with them! **Your input is essential to the continued success of the conference**.

POSITION REFERRALS

We have made available a way for employers and job-seekers to connect at SESUG. At the Registration Desk, you will find books where you can post your resume or a fact sheet for prospective employers; and employers can post positions that are available. Remember, SESUG will not endorse people, positions, or companies in any way.

PROMOTIONAL ACTIVITY

Sales literature or product descriptions of a sales nature ***may not*** be displayed on bulletin boards or other public areas at the conference unless permission is received from the conference planning teams. Some papers and poster presentations deal with a vendor's products or services. We have emphasized to these presenters that they should not discuss pricing or other sales-related issues in the presentation. **SESUG does not support or endorse the direct marketing efforts,** such as hospitality suites, of any vendor**.** See the **SESUG Guidelines** on page 55.

SPONSORS

On the following pages are the ads of the sponsors of SESUG. Their support of SESUG and this conference is greatly appreciated. Many of them have booths in the SAS Demo Room, so please stop by and thank them for helping make this conference such a success.

Silver Sponsor

ASG INC.
Attentive. Honest. Certain.

Bronze Sponsors

CENTER FOR HEALTH PROGRAM DEVELOPMENT AND MANAGEMENT

SMITH HANLEY CONSULTING GROUP LLC

American Statistical Association

sas

AMERICAN STATISTICAL ASSOCIATION FOUNDED 1839

CONFERENCE SCHEDULE

Here is the SESUG 05 general schedule. Please visit the Registration & Information Area if you have questions. The Registration & Information Desk will be closed for lunch from 12:00-1:00 pm Monday and Tuesday.

Refresh yourself **– Beverages will be available all during the day in the Portsmouth and Holley Foyers!**

Sunday, October 23rd, 2005

8:00 am - 12:00 noon	**Workshop**: Patricia Cerrito's *"Choosing the Right Model: From PROC ANOVA to PROC GLIMMIX"*	**Madison**
8:00 am - 12:00 noon	**Workshop**: Frederick Pratter's *"Introduction to Visual Basic for Applications"*	**Jefferson**
8:00 am - 12:00 noon	**Workshop**: Mal Foley's *"Combining Datasets-Tips and Traps for Merge, Set and Join"*	**Washington**
1:00 pm - 5:00 pm	**Workshop**: Jonas Bilenas's *"Making Sense of PROC TABULATE"*	**Madison**
1:00 pm - 5:00 pm	**Workshop**: Frederick Pratter's *"XML for SAS Programmers"*	**Jefferson**
1:00 pm - 5:00 pm	**Workshop**: Sandy McNeill's *"V9 for V8 People: Exploring the SAS9 Enhancements"*	**Washington**
2:00 pm – 5:00 pm	**Conference Registration & Information Area**	**Holley Ballroom Registration Area**
4:00 pm – 5:00 pm	**Presenters & Volunteers Meeting**	**Portsmouth I-III**
5:00 pm – 6:00 pm	**Preview of SESUG 05**	**Portsmouth VII**
8:00 pm – 9:15 pm	**Opening Session and Keynote Address: Vincent DelGobbo, *"We're not in Kansas Anymore"***	**Portsmouth IV**
9:15 pm – 11:00 pm	**Welcome Reception**	**Portsmouth V**

Monday, October 24th, 2005

7:00 am – 6:00 pm	**Conference Registration & Information Area** (closed for lunch from 12 -1 pm)	**Holley Ballroom Registration Area**
7:00 am – 8:00 am	**Continental Breakfast**	**Portsmouth & Holley Foyers**
7:30 am – 12:00 pm	**Concurrent Sessions**	
	Application Development	**Madison**
	Data Presentation	**Washington**
	ETL	**Lee**
	Hands-On Workshops	**Amphitheater**
	Intro to SAS	**Portsmouth IV**
	Posters	**Holley V&VI**
	Serendipity	**Portsmouth I-III**
	Statistics and Data Analysis	**Jefferson**
	Tutorials	**Portsmouth VI-VIII**
9:00 am – 7:00 pm	**SAS Demo Room (closed during Lunch Break)**	**Holley I-IV**
9:30 am – 10:30 am	**Morning Break**	**Holley I-IV**
12:00 pm – 1:30 pm	**Lunch Break (on your own)**	
1:30 pm – 5:30 pm	**Concurrent Sessions**	
	Application Development	**Madison**
	Coders' Corner	**Washington**
	ETL	**Lee**
	Hands-On Workshops	**Amphitheater**
	Intro to SAS	**Portsmouth IV**
	Posters	**Holley V&VI**
	Serendipity	**Portsmouth I-III**
	Statistics and Data Analysis	**Jefferson**
	Tutorials	**Portsmouth VI-VIII**
3:00 pm – 4:00 pm	**Afternoon Break**	**Holley I-IV**
5:30 pm – 7:00 pm	**SAS Reception**	**Holley I-IV**
8:00 pm – ???	**SESUG After Hours**	**Portsmouth V**

Refresh yourself **– Beverages will be available all during the day in the Portsmouth and Holley Foyers!**

CONFERENCE SCHEDULE

Here is the SESUG 05 general schedule. Please visit the Registration & Information Area if you have questions. The Registration & Information Desk will be closed after 12:00 pm on Tuesday.

Refresh yourself **– Beverages will be available all during the day in the Portsmouth and Holley Foyers!**

Tuesday, October 25th, 2005

7:00 am – 12:00 pm	**Conference Registration & Information Area**	**Holley Ballroom Registration Area**
7:00 am – 8:00 am	**Continental Breakfast**	**Portsmouth & Holley Foyers**
7:30 am – 12:00 pm	**Concurrent Sessions**	
	Data Presentation	**Washington**
	Hands-On Workshops	**Amphitheater**
	Posters	**Holley V&VI**
	Serendipity	**Portsmouth I-III & IV**
	Tutorials	**Portsmouth VI-VIII**
9:00 am – 12:00 pm	**SAS Demo Room**	**Holley I-IV**
9:30 am – 10:30 am	**Morning Break**	**Holley I-IV**
12:00 pm – 1:30 pm	**Grand Luncheon and Featured Speaker: Barrett Joyner, *"Principles of Project Management OR Keep Khaos Under Kontrol"***	**Portsmouth V**
1:30 pm – 2:00 pm	**Closing Session**	**Portsmouth V**

Refresh yourself **– Beverages will be available all during the day in the Portsmouth and Holley Foyers!**

SCHEDULE AT A GLANCE

Monday Morning Schedule

7:00-8:00 AM, Continental Breakfast in the Portsmouth and Holley Foyers.
Registration & Information Area in the Portsmouth Ballroom Registration Area; Open 7:00 AM to 5:30 PM.
(Closed for Lunch from 12:00 to 1:00 PM)

Refresh yourself **– Beverages will be available all during the day in the Portsmouth and Holley Foyers!**

Section (Room)	7:30	8:00	8:30	9:00	9:30	10:00	10:30	11:00	11:30
Applications Development (Madison)		**Using MS-ACCESS® Metadata to Drive Automated SAS® Data Processing** *Weeks* **I** AD08	**Systematic SAS® Development, A Disciplined Approach** *Davison* **All** AD04	**Everyone Trying to Update at the Same Time? Let's Try the Source Control Manager! (SAS/AF Development Tool)** *Altmayer* **All** AD01		**Developing Custom Data-Driven Reporting and OLAP Applications with Java** *Leslie* AD06		**The Birth of an Information Delivery Portal at Briggs & Stratton** *Weise* **A** AD03	
Data Presentation (Washington)		**Beyond the Basics with ODS HTML and Cascading Style Sheets** *Ensor* DP06		**ODS LAYOUT Is Like An Onion** *Mays* **I** DP03		**Tip and Tricks: Using SAS/Graph Effectively** *Massengill* DP01		**A Gentle Introduction to the Powerful REPORT Procedure** *Cochran* **B** DP04	
ETL (Lee)				**A Quick Tour of SAS® ETL Studio to Build a Data Mart** *Rossland & Richardson* **I** ET06		**Using SAS Enterprise ETL Server to Build a Data Warehouse: Focus on Student Enrollment Data** *Collado & Borden* **I** ET03		**The SQL Optimizer Project: _Method_ and _Tree_ in SAS® 9.1** *Lavery* **IA** ET02	
Hands On Workshop (Amphitheater)	**How SAS Thinks** *Howard* **All** HW01			**Five Ways to Create Macro Variables: A Short Introduction to the Macro Language** *Carpenter* **B** HW03			**SAS with Style: Creating Your Own ODS Style Template for RTF Output** *Haworth* **I** HW04		
Intro to SAS (Portsmouth IV)		**The DATA Step: Where Your Input Matters** *Eberhardt* **B** IN01		**Formats, Informats and How to Program with Them** *Whitlock* **B** IN02		**A Tour of the SAS Reporting Toolbox** *DiIorio* **B** IN03		**Preemptive DATA Cleaning: Techniques** *Foley* **B** IN05	
Posters & Video Posters (Holly V&VI)	**A Snazzy Graph Featuring Five Variables, Axis Breaks, and Good Resolution.** *Baker&Baker* PS01 **Emailing a SAS® Report to Excel** *Claytor* PS04 **Using SAS® to Process Repeated Measures Data** *Gareleck & Fain* PS05 **Renaming SAS® Variables** *Go* PS06 **Robustness in Meta-analysis: A Macro for Computing Point Estimates and Confidence Intervals for Standardized Mean Differences and Cliff's Delta** *Hogarty, Kromrey, Ferron,, Hess, Hines* PS07					**The BEST. Message in the SASLOG®** *Kuligowski* PS09 **An Animated Guide©: The Data Step Debugger** *Lavery* PS10 **Knowledge Needed to work in Pharma** *Matthews* PS11 **Using SAS/GRAPH® GMAP to Enhance a Diabetes Wellness Campaign** *Okerson* PS13 **SAS® Certification - Is It For You?** *Rai* PS14 **Macro Architecture in Pictures** *Tabladillo* PS16 **Mapping an Exclusive Regular Expression Strategy** *Tabladillo* PS17 **Funky Formats** *Torres* PS18			
Statistics & Data Analysis (Jefferson)		**The Missing Link: Data Analysis with Missing Information** *DePuy* SA03		**Data Mining Methods to Examine Thousands of Possibilities in Categorical Data** *Cerrito* SA02		**Using Proc GENMOD for loglinear Smoothing** *Moses & von Davier* SA06		**A Guided Tour of SAS/QC for Statistical Novices** *Rodriquez* SA10	
Serendipity (Portsmouth I-III)		**Use a SAS Database Search Engine Instead of Writing a Program** *Yeh&Verrill* SE11	**Producing a Nonrefereed Professional Publication for SESUG or SUGI** *d'Almada* SE07	**So You Want to Be A Manager: A Discussion on Issues to Consider Before Making a Career Move** *Haworth, Noga, Kuligowski* SE12		**Creating Stored Processes in Enterprise Guide** *Granger* SE18		**HIRE Power: Interviewing and Assessing SAS Talent** *Howard* SE13	
Tutorials (Portsmouth VI-VIII)	**Missing Values: Everything You Ever Wanted to Know** *Foley* **BI** TU06	**The Power of PROC FORMAT** *Bilenas* **BI** TU01		**Proc SQL Tips and Techniques - How to get the most out of your queries** *McGowan* TU09		**Proc Transpose or How to Turn It Around** *Stuelpner* **BI** TU12		**ODS to Excel Case Study** *Ensor* **A** TU14	

Level Indicator: **B** – Beginning **I** – Intermediate **A** – Advanced

Lunch on your own. See the Information Area for list of local restaurants.

Monday Afternoon Schedule

Registration & Information Area in the Portsmouth Ballroom Registration Area; Open 7:00 AM to 5:30 PM.
***Refresh yourself* – Beverages will be available all during the day in the Portsmouth and Holley Foyers!**

Section (Room)	1:30	2:00	2:30	3:00	3:30	4:00	4:30	5:00
Applications Development (Madison)	**Once Again on Efficiency and Base SAS®** *Stojanovic* **I** AD05	**Ways to Store Macro Source Codes and How to Retrieve Them** *Stojanovic & Hollis* **A** AD07	**SAS® Macro Design Patterns** *Tabladillo* **I** AD10		**So, Your Data are in Excel!** *Heaton* **I** AD02		**Managing a Many to Many Merge using Formats, Direct Access, and Implied Hashing on Datasets Exceeding One Million Observations** *Asiala&Gober* **IA** AD09	
Coders' Corner (Washington)	**1:30-1:50--Creating Zillions of Labels (and Other Documents) the Easy Way with ODS and Microsoft Word** *DelGobbo* **BI** CC05 **2:00-2:10--What Do You Mean You Don't Have SAS!!!?? How to use SAS Data Step to Create Cluster Scoring Code That is Transferrable to a non-SAS Environment** *Hartley* **I** CC07 **2:10-2:20--The Functionality of Arithmetic SAS Functions for the CRO User** *d'Almada & Graham* CC04 **2:30-2:50--SAS® Dating Tips - A Beginner's Guide to SAS Dates** *Larsen* **B** CC08 **3:00-3:10--The Invisible Character Alt255-Hidden Dragon, Removing and Aligning Text in SAS Output** *Tsykalov&Yeh* **I** CC10 **3:10-3:20--Question: How do I find out what that _TYPE_ value is from my PROC MEANS? Answer: the FINDTYPE Macro!** *Bruns* **B** CC02 **3:30-3:40--Do Which? Loop, Until or While? -- A Review Of Data Step And Macro Algorithms** *Fehd* **I** CC06 **3:40-3:50--%CHECKDATA: An Enhanced Data Diagnostic** *Stanmeyer* **I** CC09 **4:00-4:10--Adding Web-Enabled Buttons to the SAS Tool Bar** *Bentley* **B** CC01 **4:10-4:20--Tabulating Fractional Observations** *Busby* CC03							
ETL (Lee)	**Simplifying Existing Projects with Ideas from Data Ware...** *Aster* **I** ET01	**Getting Started with SAS/Access for Oracle** *Kelley* **B** ET05	**RDBMS Sampling with SAS®: Slow, Faster, Fastest** *Bentley* **B** ET04					
Hands On Workshop (Amphitheater)	**SAS 9 Programming Enhancements** *Fecht* **All** HW02			**Using Dictionary Tables: An Introduction to SAS Metadata** *DiIorio* **IA** HW07				
Intro to SAS (Portsmouth IV)	**Summarizing Data with Base SAS® PROCs** *Buck* **B** IN06		**Manipulating Data: Elements of the DATA Step Language** *Dorfman & Tsiolko* **BI** IN07		**Fun With Functions** *Fecht* **BI** IN08		**The Program Data Vector As an Aid to DATA Step Reasoning** *Whitlock* **BI** IN09	
Posters & Video Posters (Holly V&VI)	**A Snazzy Graph Featuring Five Variables, Axis Breaks, and Good Resolution.** *Baker&Baker* PS01 **Emailing a SAS® Report to Excel** *Claytor* PS04 **Using SAS® to Process Repeated Measures Data** *Gareleck & Fain* PS05 **Renaming SAS® Variables** *Go* PS06 **Robustness in Meta-analysis: A Macro for Computing Point Estimates and Confidence Intervals for Standardized Mean Differences and Cliff's Delta** *Hogarty, Kromrey, Ferron,, Hess, Hines* PS07				**The BEST. Message in the SASLOG®** *Kuligowski* PS09 **An Animated Guide©: The Data Step Debugger** *Lavery* PS10 **Knowledge Needed to work in Pharma** *Matthews* PS11 **Using SAS/GRAPH® GMAP to Enhance a Diabetes Wellness Campaign** *Okerson* PS13 **SAS® Certification - Is It For You?** *Rai* PS14 **Macro Architecture in Pictures** *Tabladillo* PS16 **Mapping an Exclusive Regular Expression Strategy** *Tabladillo* PS17 **Funky Formats** *Torres* PS18			
Statistics & Data Analysis (Jefferson)	**Using ODS to Perform Simulations on Statistics from SAS Procedures** *Kramer* SA05	**SAS Code to Select the Best Multiple Linear Regression Model ...** *Beal* SA01	**Statistical Shape Analysis with SAS** *Gerber* SA04		**Clustering Analysis of Micro Array Data** *Schwarz* SA07		**SAS/STAT 9: Progressing into the Future** *Rodriquez* SA09	
Serendipity (Portsmouth I-III)	**Pruning the SASLOG - Digging into the Roots of NOTEs, WARNINGs, and ERRORs** *Kuligowski* **B** SE14		**Extracting Data from PDF Files** *Wooding* SE10	**SAS9 BI Tools: Making Your SAS Analytics and Reports Available to Everyone in the Decision Making Process** *Harris* SE16		**Using Web Tools to Enhance Population Ident.** *Martell* SE09	**Getting from What to How and Back to What: Conflict between Technical and Business Stakeholders ...** *Mann* SE01	
Tutorials (Portsmouth VI-VIII)	**Looking For a Date? A Tutorial on Using SAS Dates and Times** *Carpenter* **BI** TU04		**Building Web Applications with SAS AppDev Studio 3.0** *Pratter* TU10		**DATALINES and Sequential Files and CSV and HTML and More ...** *Kuligowski* TU07		**How Do I Look it Up If I Cannot Spell It: An Intro to SAS® Dictionary Tables** *Brill* TU02	

Level Indicator: **B** – Beginning **I** – Intermediate **A** – Advanced

5:30 pm - 7:00 pm, SAS Reception in Demo Room (Holley I-IV)

8:00 pm - ???, SESUG After Hours (Portsmouth V & Foyer & Terrace)

Tuesday Morning Schedule

7:00-8:00 AM, Continental Breakfast in the Portsmouth and Holley Foyers.
Registration & Information Area in the Portsmouth Ballroom Registration Area; Open 7:00 AM to 12:00 PM.
***Refresh yourself* – Beverages will be available all during the day in the Portsmouth and Holley Foyers!**

Section (Room)	8:00	8:30	9:00	9:30	10:00	10:30	11:00	11:30
Data Presentation (Washington)			**Cheap Geocoding: SAS/GIS(r) and Free TIGER(r) Data** *Massengill* DP07		**Creating a Map within a Map with SAS/GRAPH** *Okerson* DP02		**Is There an Art Historian in the County?** *Brown* **I** DP05	
Hands On Workshop (Amphitheater)		**Gentle Introduction to Enterprise Guide** *Cochran* **B** HW06			**Moving Data and Analytical Results between SAS and Microsoft Office** *DelGobbo* **All** HW05			
Posters & Video Posters (Holley V&VI)	**A Snazzy Graph Featuring Five Variables, Axis Breaks, and Good Resolution.** *Baker&Baker* PS01 **Emailing a SAS® Report to Excel** *Claytor* PS04 **Using SAS® to Process Repeated Measures Data** *Gareleck & Fain* PS05 **Renaming SAS® Variables** *Go* PS06 **Robustness in Meta-analysis: A Macro for Computing Point Estimates and Confidence Intervals for Standardized Mean Differences and Cliff's Delta** *Hogarty, Kromrey, Ferron,, Hess, Hines* PS07				**The BEST. Message in the SASLOG®** *Kuligowski* PS09 **An Animated Guide©: The Data Step Debugger** *Lavery* PS10 **Knowledge Needed to work in Pharma** *Matthews* PS11 **Using SAS/GRAPH® GMAP to Enhance a Diabetes Wellness Campaign** *Okerson* PS13 **SAS® Certification - Is It For You?** *Rai* PS14 **Macro Architecture in Pictures** *Tabladillo* PS16 **Mapping an Exclusive Regular Expression Strategy** *Tabladillo* PS17 **Funky Formats** *Torres* PS18			
Serendipity (Portsmouth I-III)	**Automated Excel-ent Validation** *Stuelpner* SE02		**Power and Sample Size Computations** *Castelloe* SE03		**Tuning SAS 9 for a Multi-User ETL Environment** *Bartucca* SE15		**From Obscurity to Utility: APP Functions as Programming Tools** *Dorfman & Martchenko* SE04	
Serendipity (Portsmouth IV)	**COPYGRID: Tracking Multi-Developer (and Machine) Programs from Development to Production** *Altmayer* **All** SE05	**Laziness, Impatience, Hubris: Personality Traits of a Great Programer** *Bentley* SE06	**Seminar on Table Templates for ODS** *Ensor* SE17					
Tutorials (Portsmouth VI-VIII)	**An Introduction to the Simplicity and Power of SAS/Graph®** *Bruns* **ALL** TU03		**A SASautos Companion: Reusing Macros** *Fehd* **IA** TU05		**Speaking Klingon: A Translator's Guide to PROC TABULATE** *Rhodes* TU11		**Macro Bugs - How to Create, Avoid and Destroy Them** *Whitlock* TU13	

Level Indicator: **B** – Beginning **I** – Intermediate **A** – Advanced

12:00 pm- 1:30 pm, Grand Luncheon and Featured Speaker – Barrett Joyner (Portsmouth V)
"Principles of Project Management OR Keep Khaos Under Kontrol"

1:30 pm-2:00 pm, Closing Session (Portsmouth V)

PAPERS AND PRESENTATIONS

This section lists the abstracts and author(s) biography(ies) for the over 100 papers and presentations for SESUG 05. To the left of the title is the presentation time. To the left of the name(s) of author(s) is the paper number (so you can match it up with the paper in the Conference Proceedings). To the left of the abstract is the paper level: [B] for Basic; [I] for Intermediate; [A] for Advanced; [ALL] for all levels, if known.

- All Sections are presented in alphabetical order.
- Papers and presentations are arranged in order of presentation (by day, room, and time) for all sections except Posters.
- An overall layout of presentation times and locations is found in the "**Schedule At A Glance**" on pages 14-15.

Below is a brief description of each section that is on the following pages. The section abbreviation in parentheses is used as the first part of the paper number.

Application Development (AD)

The Applications Development section recognizes the role of SAS® software as a basis for the development of strategic applications and provides overviews of the application's code and the techniques used in its development. Presentations in this section deal with both the process and productivity tools used in the design, development, implementation and integration of enterprise solutions running in single or multi-platform environments. Presentations may include Web-enabled applications, object-oriented applications, modular applications or applications that integrate SAS software with other software products.

Coders' Corner (CC)

10 or 20-minute tutorials (1-2 pages) and 'how-to' talks on tips and techniques while using the SAS system. These brief tutorials on helpful hints in SAS can be the priceless gem you have been looking for to solve that pesky problem back at the office.

Data Presentation (DP)

Papers for this section involve discussions of a variety of SAS tools and techniques for visually displaying your data, whether it's graphical output or a customized report. Topics in this section are geared toward conveying meaningful data in a visually effective manner, which clearly and concisely communicates information to the intended audience using tools such as SAS/GRAPH®, SAS/INSIGHT, the TABULATE and REPORT procedures, and the Output Delivery System (ODS).

ETL (ET)

ETL, Extract-Transform-Load, covers the gamut from obtaining your data, modifying or cleaning your data and loading it into proper storage for application and analysis needs. Topics such as collection and input, structure, validation, maintaining integrity, archiving, data conversion, warehousing and tracking are welcome.

Hands On Workshops (HW)

Features SAS software experts to give workshop-style tutorials and provide the opportunity for attendees to practice using SAS software. These workshops are presented by well-known SAS experts and have been chosen based upon their knowledge and experience at conducting hands on type workshops/courses.

Intro to SAS (IN)

This is a one-day section designed to sequentially guide new SAS users through the basics of SAS programming. Presentations introduce the basic concepts of using DATA and PROC steps. All presentations are given by experienced users with expertise in the specific area being presented.

Posters & Video Posters (PS)

The Posters section is about any and all uses of SAS software. It is different from other sections in that the medium for presentation is a visual display (either on a poster or a computer) rather than a formal lecture. The Posters section is comprised of presentations that include graphics or source code or that can best be summarized in a few main points. Posters are on display throughout the conference with a presentation period for authors to discuss their works on a one-to-one basis with conference attendees.

Serendipity (SE)

Papers that do not fit well into the other categories, but are interesting and informative nonetheless. Presentations will encompass a variety of subjects and promise to entertain and enlighten. Remember that feeling of discovering something that will solve that SAS problem? Webster's Dictionary calls it Serendipity!

Statistics and Data Analysis (SA)

Presentations in Statistics and Data Analysis cover statistical and data analysis techniques, including statistical procedures, methodologies and techniques for efficient data manipulation and preparation using the SAS System. Papers from many different industries are represented in this section and are geared toward a variety of audiences with a wide array of experience using the SAS System, from the beginner to the more advanced. Traditional DATA step programmers, statistical programmers, and statisticians, as well as others, will find topics of interest here.

Tutorials (TU)

In-depth explanations of a wide range of topics within the SAS System. Papers are designed to provide users at all levels of expertise with specific "how-to" tools presented in a step-by-step approach. Papers focus on one procedure or functional area or provide an initiation to some aspect of the SAS System. From the tutorial, attendees will gain a fundamental understanding of the topic and be able to immediately apply what they have learned to their jobs.

APPLICATIONS DEVELOPMENT

Section Chairs: **Tom Fuchs**
LG&E Energy Corp.
Louisville, KY

Maribeth Johnson
Medical College of Georgia
Augusta, GA

Monday Morning – Madison

8:00 AM-8:30 AM — Using MS-ACCESS® Metadata to Drive Automated SAS® Data Processing

AD08

Gary N. Weeks, *Centers for Disease Control and Prevention, Atlanta GA*

I

This paper describes the automation of data processing for complex survey data using metadata in a MS Access database. The Pregnancy Risk Assessment Monitoring System (PRAMS) run by CDC Division of Reproductive Health in conjunction with state health agencies uses mail and phone questionnaires to collect pregnancy and birth outcome data to identify pregnancy risk. PRAMS has grown from three participating states in 1988 to 36 states in 2004 and continues to grow. When the number of participating states was small data were processed with 10 manually run SAS programs for each state then manually cleaned. As the program expanded an automated SAS Macro driven data processing system was implemented that effectively reduced the processing time but did not address data cleaning which was still labor intensive. For the 2004 survey year PRAMS began a new phase that required rewriting the questionnaires, concurrently a data processing and validation system was developed to use metadata in a Microsoft Access database to drive processing. The Access metadata database allowed data managers without SAS programming skills to dynamically add, remove, and alter variables and their attributes and ranges as well as confirm skip pattern validity by using dynamically created integrity constraints while reducing the need for specialized SAS programming.

Gary Weeks has been a SAS developer/programmer/analyst for CDC in Atlanta, Georgia since 2001, prior to that he was a consultant for Qualex Consulting for 3 years. He has been programming SAS for 15 years and learned his chops in his previous life as a fisheries biologist for the U. S. Army Corps of Engineers.

8:30 AM-9:00 AM — Systematic SAS® Development, A Disciplined Approach

AD04

John W. Davison, Jr., *Factotum, Inc., Leesburg VA*

ALL

This paper presents my systematic approach to SAS® application design, based on nearly thirty years' experience in SAS development and maintenance. Without setting forth a rigid framework some broad guidelines are offered embodying the author's own rules that have served him well and may help others to develop their own. They represent a step toward formulation of a disciplined approach to more rapid development of more robust and maintainable applications and more reusable code.

(Biography not available at time of printing)

9:00 AM-10:00 AM — Everyone Trying to Update at the Same Time? Let's Try the Source Control Manager! (SAS/AF Development Tool)

AD01

Larry Altmayer, *U.S. Census Bureau, Washington DC*

ALL

The SAS/AF development tool source control manager (SCM) is a source file management facility featuring SAS file check-out/check-in capability. This feature allows several developers to have edit access to the same files, while ensuring that no one makes changes to a program while another developer is making changes to the same program. It is designed to be used with SAS/SHARE.

The Standard Economic Processing System (StEPS), a batch and SAS/AF system developed by the U.S. Census Bureau for processing data from its economic surveys, is a prime candidate for SCM. It is maintained by several developers requiring edit access to its files. This paper describes how SCM has been implemented for StEPS, providing a basis for how it can be used by other organizations.

Larry Altmayer has been with the Bureau of the Census for twenty-seven years, and is an information technology specialist. He has more than fifteen years SAS programming experience. He has processed National Crime Victimization Survey data. Most recently, he joined the Bureau's StEPS Team, which develops a batch and SAS/AF system for economic surveys. He has a B.A. in Statistics from the Univ. at Buffalo, and Master of Applied Statistics from Ohio State University.

10:00 AM-11:00 AM

Developing Custom Data-Driven Reporting and OLAP Applications with Java

AD06

Scott Leslie, *SAS, Cary NC*

Version 3 of SAS AppDev Studio offers an extensive Java component library that enables you to develop both client-side and server-side Java applications for the web. This paper will take you on a tour of some of the most recent additions – the set of components designed to exploit a key piece of our Business Intelligence Platform – relational and OLAP data access through Information Maps.

Information Maps provide a business metadata layer that describes the physical data warehouse. This business metadata layer enables business users to ask questions from the data without having to know SQL or MDX programming languages. Once you've used SAS Information Map Studio (a desktop Java application) to build your Information Map, the following Java components can be used to build custom, data-driven applications:

- Relational and OLAP tables and charts
- Available selectors for performing common data exploration and management tasks such as defining the query, filtering, ranking, adding calculated items, exception highlighting and more.
- The set of models and interfaces that surface the Information Map data and metadata layers

Both Swing and custom tag-based examples will be shown.

Scott Leslie joined SAS Institute in 1994 in the Display Products division developing parts of SAS/AF. He is an original member of the AppDev Studio development team and serves as a Principal Software Developer for Java component development. His primary areas of development have been JavaBeans and model components which provide access to SAS data and services. He has a BS in Mathematics from the University of North Carolina at Chapel Hill.

11:00 AM-12:00 PM

The Birth of an Information Delivery Portal at Briggs & Stratton

AD03

Sheryl Weise, *WICS, Gastonia NC*

Information delivery portals have been around for years and yet there is still a considerable amount of confusion surrounding this technology and its potential. Briggs and Stratton has been a SAS customer for nearly 20 years, progressing from simple columnar reports to an interactive distribution vehicle, the Information Delivery Portal, developed in SAS© v9.1.3. This session will outline how we approached this from a programmer's point of view. Some of the topics being covered:

- Definition of the SAS Information Delivery Portal
- B&S current environment and goal for the IDP
- Logging on – sasuser – LDAP authorization
- Portal pages – content vs. portlets, options menu, search menu
- Samples – I/T page, report distribution, user developed pages
- SAS Management Console – users, groups, security (ACT's), stored process manager
- Initial loads – templates, sharing pages
- Content – links, HTML output, Excel output, JSPs, stored processes, reports
- Miscellaneous – metabrowser, removing pages, timing out, etc.

The presentation will include lots of examples and screen shots. This will not include the products used behind the scene (ie: webservers, Xythos, etc.).

Sheryl Weise has over 15 years of SAS experience at Briggs and Stratton Corporation, including over a year in the SAS Business Intelligence Architecture, v9.1.3. She has a degree in Business Administration/MIS and has worked as a programmer/analyst and project leader in banking, health care, and manufacturing, on various mainframe and client server platforms. She has been a critical member of a team developing, implementing, and training users with traditional SAS reports, queries, Enterprise Guide, and, most recently, the Information Delivery Portal.

Monday Afternoon – Madison

1:30 PM-2:00 PM

Once Again on Efficiency and Base SAS®

AD05

Milorad Stojanovic, *RTI International, RTP NC*

I

Efficiency is a broad term. Different users of SAS Base software understand efficiency in quite different ways, from running programs faster to creating and maintaining application programs more easily and faster. Modifying existing programs by changing program logic requires more effort than other approaches.

The author's goal was to improve efficiency of SAS programs with a minimum of interference with existing program code. He discusses two SAS Base features – the **COMPRESS** option and the **SASFILE** statement. His goal was to present more numeric guidelines than what was available and known to him at the time of writing this paper about the types of data sets in terms of size and content for which these SAS Base features will improve efficiency. His goal ultimately was to produce a 'cook book' for these two SAS features. Also he points out when and why the options will not achieve any advantage and in fact will produce less efficient results.

Milorad Stojanovic has 12 years of experience with SAS. His main experience is in SAS Base, SAS Stat, SAS Graph, and SAS Macros. He has experience in the pharmaceutical industry as a systems and programming analyst.

In this position he developed application software for processing clinical trial data. He also has experience in education surveys as well as in Medicare surveys as an analyst/programmer. In this position he developed application software for longitudinal studies.

Milorad has formal education in Applied Physics (Nuclear Science) from School of Electrical Engineering, University of Belgrade Yugoslavia.

He spent four years working in biostatistics department for Upjohn Company of Canada (later Pharmacia-Upjohn, now it is Pfizer) and the last eight years working for Research Triangle Institute International in North Carolina.

2:00 PM-2:30 PM

Ways to Store Macro Source Codes and How to Retrieve Them

AD07

Mirjana Stojanovic and Donna Hollis, *Duke University, Durham NC*

A

This paper will focus on different ways to store macro programs. Programs developed in a multi-user clinical data management environment often experience refinement and re-programming in their lifetime, so a shared storage and usage location is valuable. This paper will present several different method s available to choose from to save macro programs.

The advantages and disadvantages of each method will be explained in detail so that users will be able to chose which method best fits their needs. %INCLUDE, AUTOCALL LIBRARY or STORED COMPILED MACRO FACILITY will be explained step by step, and examples will simplify the process of how to use these methods.

Detailed explanation and examination should provide a solid understanding of the current SAS 9.1 environment and what this version can offer for macro usage. This presentation will explore a program developer's choices through examples and will be particularly oriented to the Windows network environment.

Mirjana Stojanovic works as an IT Analyst for the Cancer Center Biostatistics Department of Duke University Medical Center. She has been in her current position since September 2004. Her current responsibilities involve developing and maintaining a SAS macro library and SAS format library for the Cancer and Leukemia Group B (CALGB) cooperative clinical trials Statistical Center. Her programmer responsibilities include editing databases, preparing reports for ongoing clinical studies, and creating analysis files and patient summary reports.

Ms. Stojanovic has Bachelor degree in Statistics and Computer Science from University of Belgrade, Yugoslavia.

She worked more than 15 years at Statistics Serbia as Statistical Analyst. During that period she designed and implemented several statistical surveys mainly in the area of Labor Statistics. She also analyzed and presented results of those surveys to the clients in Serbian government.

In the USA, she has worked as a SAS programmer for RTI, Parexel International, and UNC CH School of Nursing. She gained valuable experience using SAS software in three different areas (Survey, Clinical trials, and Education). She has attended many SAS seminars, SUGI, SESUG, and PharmaSUG conferences and has used opportunities to update her knowledge at several workshops. This is her third presentation at SESUG.

Donna Hollis is a Senior Statistician with the Cancer Center Biostatistics Department of Duke University Medical Center and has been in her present position for 14 years. She has also been employed at the University of Tennessee, Oak Ridge Associated Universities, and the University of North Carolina at Chapel Hill. Ms. Hollis received a Bachelor's Degree in Mathematics from the University of North Carolina at Greensboro, a Master's Degree in Statistics from the University of Tennessee, and was a Dr.P.H. candidate at UNC-CH. She has over 30 years experience in the biomedical field working with SAS.

2:30 PM-3:30 PM **SAS® Macro Design Patterns**

AD10 Mark Tabladillo PhD, *markTab Consulting, Atlanta GA*

I

The qualities which SAS® macros share with object-oriented languages account for the structural power of macro programming. This paper illustrates some examples of specific design patterns which can be implemented with SAS macros. The material is intermediate to advanced, and assumes knowledge of macros and macro variables. The goal is to systematically illustrate best practices for SAS macro programming.

Mark Tabladillo heads MarkTab Consulting, an Atlanta, GA based software development corporation. Since 1991, he has written SAS software applications for healthcare, commercial finance, and epidemiology. He has consulted primarily for the Centers for Disease Control since 1999. Mark teaches graduate level statistics and management part-time for the University of Phoenix. His Georgia Tech doctorate is in Industrial Engineering. Mark has previously presented at SUGI conferences, regional and local SAS users' groups.

3:30 PM-4:30 PM **So, Your Data are in Excel!**

AD02 Ed Heaton, *Westat, Rockville MD*

I

You say your customer sent you the data in an Excel workbook. Well then, I guess you'll have to work with it. This paper will discuss some of the quirks you will find when your data are stored in an Excel workbook. It will cover such things as

* naming conventions,
* the creation, deletion, and update of worksheets and named ranges,
* character length issues,
* numeric precision, and
* caching.

This paper will demonstrate - through the Display Manager - SAS code and techniques to make your life with Excel more predictable and your work less prone to error. We will use the EXCEL engine that is available in SAS 9.1.3 when you license SAS/ACCESS for PC Files.

Ed Heaton has been

** programming in SAS,*
** reading about SAS,*
** writing about SAS,*
** teaching SAS,*
** tutoring others in SAS,*
** debugging SAS programs,*
** dreaming about SAS,*
** attending SAS conferences, and*
** dining with SASsy folk*

since 1988. He now works at Westat in Maryland where he teaches SAS classes, administers the SAS System on numerous Windows and Linux servers, and helps others at Westat and beyond to write more effective SAS programs.

4:30 PM-5:30 PM **Managing a Many to Many Merge using Formats, Direct Access, and Implied Hashing on Datasets Exceeding One Million Observations**

AD09 Mark E.Asiala and John C. Gober, *Bureau of the Census, Washington DC*

I A

Managing a many to many merge in SAS and most other languages has always been the bane of programmers everywhere. The SAS merge statement can handle one-to-many and many-to-one merges but was never designed to meet the intricacies and variations of a many-to-many merge. True, there are other options available to the programmer like PROC SQL, or arrays but these either require extensive disk resources or code that is often times confusing and elusive. The Bureau recently needed an application to apply missing geography to approximately 11 million records based on 27 million eligible zipcodes. Since this was a time sensitive project not only speed of execution but also available space was a critical consideration when design was considered. This paper is the cumulating efforts of two independent programmers who came up with two similar techniques.

Mark Asiala works in the American Community Survey Design Branch at the U.S. Census Bureau. He has held his current position for almost 4 years during which time he has implemented and directed work in the areas of sampling, weighting and estimation. His primary role is currently being responsible for weighting and estimation. Prior to his work with the American Community Survey, he worked on the decennial census in the Variance Estimation and Data Products Branch for 2 and a half years.

During the course of his career at the bureau, he has given several presentations to statistical conferences, Census advisory groups and data user groups. In 2003, he received the Census Bureau's Bronze Medal award, the highest award given by the Census Bureau, for his work on the American Community Survey's weighting production activities.

He received his MS in Statistics from Georgia State University, his MS in Mathematics from Purdue University, and his BS in Mathematics and Physics from the University of Michigan.

John Gober works in the American Community Survey Office at the U.S. Census Bureau. He has held various programming and alalysis positions at the Bureau since 1997. John's specialties are data retrieval and manipulation, data cleaning, repetative data processing using macros, and finding unique ways to process data bringing down storage and entire systems. He has been been a presenter and speaker at SUGI, NESUG, and SESUG giving talks primarily on the importance of creating tollboxes and sharing code.

CODERS' CORNER

Section Chairs: **Larry Altmayer**, **U.S. Bureau of the Census**, **Washington, DC**; **Andrew T. Kuligowski**, **Nielsen Media Research**, **Dunedin, FL**

Monday Afternoon – Washington

1:30 PM-1:50 PM Creating Zillions of Labels (and Other Documents) the Easy Way with ODS and Microsoft® Word

CC05 Vince DelGobbo, *SAS, Cary NC*

B I

The mail merge feature of Microsoft Word is most often used to create mass-produced "form letters". But it can also be used to make labels, reports, directories and other documents. You start with a Word document that has fields that need to be filled in, then connect to a data source to retrieve information needed to fill in those fields. Possible data sources include Paradox, dBASE and Microsoft Access files. This talk will show you how create labels, using your SAS data sets as the data source. The technique is easy, requires only Base SAS version 8 or later, and will work on any platform where SAS is installed (even a mainframe!). You can then take what you have learned and generate other types of documents. This technique can also be used with SAS version 6 by using the SAS HTML Formatting Tools instead of ODS.

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

2:00 PM-2:10 PM What Do You Mean You Don't Have SAS!!!?? How to use SAS Data Step to Create Cluster Scoring Code That is Transferrable to a non-SAS Environment

CC07 Bill Hartley, *Euro RSCG 4D Discovery, Glen Allen VA*

I

When transferring code, we can't assume all clients have access to SAS. Some of the statistical procedures that are easily accessible in SAS/STAT can't be used in all environments. Statistical procedures, such as mean, standard deviation, minimums, maximums, etc. are found in many software platforms. Even regression is not difficult to code since it is a linear function.

Cluster analysis is more difficult to code for outside platforms. This paper demonstrates how the data step can be utilized to create scoring code for cluster analysis, which can be transferred to software independent environments.

Bill joined Euro RSCG 4D Discovery, a market research company, in March 2001. His duties include statistical modeling, profiling customer and prospect populations, tracking results from mail and e-mail campaigns, statistical reporting, MRI data selection, and SAS programming. Bill has a M.S. in Statistics from Virginia Polytechnic Institute and State University. He has 11 years of experience in statistical analysis and statistical programming.

2:10 PM-2:20 PM The Functionality of Arithmetic SAS Functions for the CRO User

CC04 Phil d'Almada & Karen Graham, *Rho, Inc., Chapell Hill NC*

The Contract Research Organisation (CRO) industry requires precision and accuracy in the handling of data. One tool to address this concern is the use of SAS functions. Arithmetic SAS functions are categorized, with other functions, by SAS into two categories entitled Truncation and Descriptive Statistics. The authors will discuss these types of functions in light of their application in the CRO industry and within the scope of the authors' experiences. This paper will illustrate the power of SAS functions as an option to arriving at the same result as some other SAS products, namely, SAS PROCEDUREs or PROCs. Advantages from the use of SAS functions are a cleaner SAS log and a reduction in debugging time.

Phil d'Almada began using SAS in 1976 becoming a dedicated SAS user in 1988. Phil has used SAS for analysis, data management, reporting and building applications, in agricultural research, resource economics, public health research and pharmaceutical reporting. Phil has presented papers both at SUGI and SESUG and is an active member of the

SESUG Executive Council having acted as Co-chairman of SESUG 2K held in Charlotte, North Carolina.

Karen Graham has been using SAS since about 1985 while working as a statistician in government. She has applied SAS in tax research, public health research and clinical research. She is currently Assistant Director of Statistical Programming for Rho, Inc.

2:30 PM-2:50 PM **SAS® Dating Tips - A Beginner's Guide to SAS Dates**

CC08 Erik Larsen, *Independent Consultant, Charleston SC*

B

Do you want to be the life of the party at SESUG 2005? Being proficient at using SAS dates and times may not make you instantly popular, but it will make your programs work better and allow you to use the power of SAS dates to manipulate data and make your reports and graphs look more professional. We will explore the basics of how SAS stores dates and times internally and how you can use them to calculate values in terms of days, weeks and years. Finally we will explore some date functions and formats to make your reports look so good you will never want to look at a Microsoft Excel® spreadsheet again.

Erik Larsen has used SAS for over 15 years in the finance, pharmaceutical, market research, healthcare and insurance industries. He is a frequent presenter at SUGI, NESUG and SESUG and was the conference chair for NESUG 2000. He holds a bachelor's degree in computer science from Penn State University and a master's degree in applied statistics from Villanova University. When he is not using SAS, he works on restoring his 1830 house in Charleston, South Carolina.

3:00 PM-3:10 PM **The Invisible Charater Alt255 - Hidden Dragon, Removing and Aligning Text in SAS Output**

CC10 Eugene Tsykalov & Shi-Tao Yeh, *GlaxoSmithKline, King of Prussia PA*

I

Use of a special Invisible Character in SAS code is described to remove sometimes unnecessary text and help in text aligning and positioning in SAS output. The magic sequence of keys Alt-255 typed at numeric keypad places an Invisible Character symbol into text. This character looks like a blank space in the program code and SAS output but is processed and printed by many programs as a valid text character.

Practical applications of Invisible Character Alt-255 – the Hidden Dragon which eats out undesirable text and guards SAS output text aligning are presented: removing unnecessary column names from Proc Report output, suppressing the name of a Pageby variable in page headers, aligning text in titles, footnotes and columns, preserving the original text layout in SAS ODS output in PDF format.

Also discussed are differences in displaying of the Invisible Character in Windows and UNIX based programs.

Eugene Tsykalov is a Senior SAS Programmer at GlaxoSmithKline. He learned SAS programming at Philadelphia University and started his SAS journey in 2000 at Wyeth. Before that Eugene got a Ph.D. in neurophysiology and published many articles in the neuroimaging field. Eugene was a cofounder and for 7 years a Chief Scientist of Imaging Resource Technologies, Inc. He has attended PharmaSUG, NESUG, SUGI conferences and made SAS presentations at SESUG-2003 and PharmaSUG-2004.

Shi-Tao Yeh is currently employed at GlaxoSmithKline. Shi-Tao with a Ph.D. from University of Pennsylvania, has been utilizing SAS since 1976. He has published and presented numerous papers at SUGI, SEUGI, NESUG, PharmaSUG and local PhilaSUG meetings and won several awards.

3:10 PM-3:20 PM **Question: How do I find out what that _TYPE_ value is from my PROC MEANS? Answer: the FINDTYPE Macro!**

CC02 Dan Bruns, *TVA, Chattanooga TN*

B I

Have you ever been really confused by the _TYPE_ variable with PROC MEANS or PROC SUMMARY? Have you ever had trouble determining the values of _TYPE_? The FINDTYPE macro is your answer! Accepts variable names as parameters and returns the corresponding _TYPE_ value. A tip worth ten minutes of your valuable conference time!

Dan Bruns is a Senior Systems Programmer for the Tennessee Valley Authority (TVA) in Chattanooga, TN, and responsible for the installation, customization, and support of several products on the IBM OS/390 mainframes since 1986. He is the SAS Software Site Rep for all platforms at TVA (z/OS, Windows, Sun, and HP), and has been responsible for the installation and support of the SAS System since 1981. He has been a SAS user since 1972. He has presented several papers/workshops at SAS Users Group International (SUGI), SouthEast SAS Users Group (SESUG), and other non-SAS conferences since 1990. His main areas of interest are Base SAS, SAS Macros, and SAS reporting procedures, SAS/GRAPH, SAS/ACCESS, and SAS/SHARE. He has been a member of the SESUG Executive Council (EC) since 1994 and is currently the SESUG EC President. He was proud to cochair the SESUG 97 conference with Andrew T. Kuligowski in Jacksonville, FL.

3:30 PM-3:40 PM

Do Which? Loop, Until or While? -- A Review Of Data Step And Macro Algorithms

CC06

Ronald Fehd, *Centers for Disease Control and Prevention, Atlanta GA*

I

Writing a program entails considerable investment of time spent in research, development and testing. By examining project programs with a critical eye one can identify programs with similar functionality, i.e. one can recognize a pattern. This paper examines the steps in developing reusable programs. Topics include guidelines for identifying parameters and the development, testing and documentation cycles. Development examples include code from PROC FREQ, the import wizard, and Enterprise Guide. Benefits of developing a library of reusable programs include: faster development time for new programs, because they are shorter and time spent testing is reduced; programs with reusable components (routines or subroutines) are well-documented and easy to read, which promotes their reuse. Expected audience is intermediate to advanced users and macro programmers.

Ronald J. Fehd has a B.S. in Computer Science. He has continued his education by attending SUGI since 1998 and reading SAS-L, the on-line SAS User Group, since 1994. He has been a programmer for 20 years, and has worked as a data manager for the Centers for Disease Control for the past 17 years. He is the author of ten SUGI papers on large macros and programming theory. Please check the SUGI30 proceedings for his other papers. He is the author of over 3,000 messages to SAS-L since 1997. In 2001, and again in 2003, he was elected Most Valuable SAS-L contributor. He is a programmer, educator, and rhetor of the SAS macro language, and is currently working on a book about programming rhetoric.

3:40 PM-3:50 PM

%CHECKDATA: An Enhanced Data Diagnostic

CC09

John Stanmeyer, *Trade Resources Company, Washington DC*

I

Often when receiving a large dataset from a client it is useful to perform a review of the summary statistics of each numeric variable, as well as to do a frequency/rank tabulation on each character variable. PROC MEANS and PROC FREQ only go so far to this end (especially when dealing with date fields). Therefore, Trade Resources Company has developed a macro called %CHECKDATA to easily run a comprehensive diagnostic of any data set.

John Stanmeyer, a SAS consultant at Trade Resources Company, an international trade consultancy, has been programming SAS for 10+ years, in management consulting, litigation support, and marketing environments. His career path includes MCI and Price Waterhouse (now IBM Business Consulting) plus a variety of freelance work. A power Excel user, he also programs SQL Server, Access, ASP, HTML, Javascript, and Visual Basic. He graduated from the University of Virginia in 1995 with a B.A. in Economics, is married and has a 4-year old son. He can be reached at jstanmeyer@gmail.com.

4:00 PM-4:10 PM

Adding Web-Enabled Buttons to the SAS Tool Bar

CC01

John Bentley, *Wachovia Bank, Charlotte NC*

B

The SAS Help documentation provide basic guidance for customizing the user profile that controls the look, feel, and some behaviours of the Editor, Log, and Output windows. This paper will show how to add toolbar buttons in the Editor window that open web pages such as the SAS On-Line Documentation.

Since 1987 John Bentley has used SAS in the healthcare, insurance, and banking industries. He is currently an Assistant Vice President with Wachovia Bank's Corporate Data Management Group and since 1997 has supported the Bank's data warehouse and data marts. John is a SAS Certified Advanced Programmer, has been a Section Chair at both SUGI and SESUG, and was the 2003-2004 President of the Charlotte Area Wachovia In-House SAS Users Group. He has a Masters degree in Political Science with a Concentration in Southeast Asian Politics and is intermittently pursuing a Masters of Information Systems.

4:10 PM-4:20 PM

Tabulating Fractional Observations

CC03

Phil Busby, *Live Data Systems, Inc., Apex NC*

This paper presents an advanced coding technique to make Proc TABULATE display cross-tabulations of "partial" observations. Each observation has a numeric variable with a value between zero and one representing an employee's full-time equivalent (FTE) as a university employee. The HR user sees the total FTE count for all of the employees extracted by his selection criteria.

Phil Busby is a SAS consultant at Infineon Technologies in Richmond, VA. He graduated from UNC in 1980 and worked at SAS Institute for 10 years, writing parts of the Display Manager and SAS/AF Software.

DATA PRESENTATION

Section Chairs: **Keith Brown**, **University of North Carolina**, **Raleigh, NC**; **Marje Fecht**, **Prowerk Consulting**, **Cape Coral, FL**

Monday Morning – Washington

8:00 AM-9:00 AM Beyond the Basics with ODS HTML and Cascading Style Sheets

DP06 Michele Ensor, *SAS, Atlanta GA*

This SAS Presents session provided a brief introduction into Cascading Style Sheet (CSS) Technology and browser compliance. Then, all the methods of using CSS with ODS HTML were discussed: how to create a base CSS file with ODS HTML; how to use an existing CSS file with ODS HTML; how to use the HTMLCLASS and HTMLSTYLE attributes to specify or override SAS-generated style attributes; and how to use the HEADTEXT option to pass style information to an HTML page or supply a <LINK> tag for a second style sheet.

Michele Ensor is an instructor with SAS teaching public, on-site, and live web classes and developing courses. She has been employed as a SAS instructor for over seven years and has been using SAS for over twelve years. Her education includes a Bachelor of Science in Mechanical Engineering and a Master of Business Administration.

9:00 AM-10:00 AM ODS LAYOUT Is Like An Onion

DP03 Rich Mays, *University of Rochester, Rochester NY*

ODS LAYOUT is like an onion. They both make you cry? No! They both have layers! In version 9, the ODS LAYOUT feature is one of the best inventions since the Carmel Frappuccino. SAS(r) now gives you a straightforward approach to placing graphs and tables on a page while eliminating the need for PROC GREPLAY and TEMPLATES. This paper demonstrates a method of using ODS LAYOUT capabilities to create PDF documents by creating a series of page "layers." It also demonstrates the use of macros to enhance the capabilities of ODS LAYOUT. Enhancements will include utilizing background colors/images, color graph borders with flexible line thickness, and flexible positioning of graphs on individual pages. A macro controlled system to determine available space on a page, and the subsequent placement of graphs/tables will be discussed. A good understanding of how to use macros is essential to understanding this paper. An understanding of ODS LAYOUT and PROC GREPLAY is helpful but not necessary. This paper will include actual code and examples.

Rich Mays is a Sr. Analyst/Programmer at the University of Rochester Medical Center. Rich has been using SAS(r) for 15 years and has experience with SAS(r) on the MVS, Unix, and Windows platforms. Rich's primary areas of expertise include SAS/Graph, macros, and database administration.

10:00 AM-11:00 AM Tip and Tricks: Using SAS/Graph Effectively

DP07 Darrell Massengill, *SAS, Cary NC*

SAS/GRAPH is a powerful data visualization tool. This paper examines the powerful components of SAS/GRAPH and highlights techniques for harnessing that power to create effective and attention-grabbing graphs. The components examined include the SAS/GRAPH procedures, graphical global statements, the Output Delivery System (ODS), graph styles, client-rendered graphs, and the Annotate facility. Complete programs using these components and techniques are provided and examined in detail.

Darrell Massengill is a Senior Development Manager in the Data Visualization R&D group and has been a development manager with SAS for 22 years. He has a BS from UNC-CH and a Masters in Computer Science from NC State University

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11:00 AM-12:00 PM A Gentle Introduction to the Powerful REPORT Procedure

DP04 Ben Cochran, *The Bedford Group, Raleigh NC*

When the REPORT Procedure was first introduced by SAS with the advent of Version 6, most of the SAS world was mainframe users. This new procedure brought with it a great deal of power and flexibility that added much strength to SAS' arsenal of report generating procedures. It had powerful formatting, summarizing, and analysis capabilities that made it easier to create anything from a simple listing to a very complex report. However, some critics have stated that, while it has awesome features, it looks like a mainframe report. That was true until SAS released the Output Delivery System (ODS) experimentally in Version 7, and in production mode in Version 8. If the REPORT procedure was a cake, then ODS delivers

the icing to generate truly beautiful reports. This paper offers a quick overview of the types of reports that can be generated with Proc REPORT, and how to add some of the ODS features to deliver stunning reports.

After more than 11 years with SAS Institute in the Professional Services and Marketing Departments, Ben Cochran left to start his own consulting and SAS Training business in the fall of 1996 – The Bedford Group - an affiliate member of SAS Institute's Alliance Partner Program.

He has extensive expertise with SAS/EIS in building front-end menuing systems. Ben was the marketing manager for this product for over three years and worked with numerous SAS Institute customers in meeting their application development needs. He also developed the SAS/EIS demo that shipped with the SAS System for Release 6.11.

Ben has extensive experience in training SAS users in many areas of SAS. Since 1986, he taught over 250 SAS courses to over 2,500 SAS users across North America. He developed the first Release 6.11 SAS/EIS course and taught it for SAS Institute. His course notes were the draft for the book Getting Started with SAS/EIS, 2nd Edition.

Ben has been an invited speaker at SUGI and many Regional User Group conferences since 1988.

Tuesday Morning – Washington

9:00 AM-10:00 AM

Cheap Geocoding: SAS/GIS and Free TIGER Data

DP06 Darrell Massengill, *SAS, Cary NC*

Every company or government agency has data containing address records. These addresses may be for customers, suppliers, employees, stores, offices and etc. The process of converting addresses to specific locations is known as geocoding. Geocoded addresses can be shown on a map, grouped by area, assigned attribute values based on location, used in distance computations or used as input for spatial statistical analyses.

Geocoding software and spatial data are normally quite costly. This paper explores the issues involved in geocoding and outlines inexpensive solutions using SAS/GIS and TIGER data.

Darrell Massengill is a Senior Development Manager in the Data Visualization R&D group and has been a development manager with SAS for 22 years. He has a BS from UNC-CH and a Masters in Computer Science from NC State University.

10:00 AM-11:00 AM

Creating a Map within a Map with SAS/GRAPH

DP02 Barbara B. Okerson, *Virginia Health Quality Center, Glen Allen VA*

Quality Improvement Organizations (QIOs) are tasked with assisting healthcare providers in making changes to healthcare delivery that improve patient outcomes. As we try to maximize available resources to improve healthcare for multiple concurrent national clinical priorities, geographic analyses are used to identify variations in performance (especially areas of poor compliance) at both national and statewide levels. To do this, it is advantageous to look at multiple levels of detail simultaneously, using the larger geographic area as reference.

While SAS does not provide a procedure to do this directly, SAS/GRAPH GMAP, in combination with the SAS Annotate facility, provides the functionality to create this type of map. This presentation details this process as part of national and statewide physician office campaigns. The first example shows national rate of compliance for diabetes lipid profile rates, while simultaneously displaying the same rates by county for the state of concern. An additional example used as part of a health information technology (HIT) promotion campaign, compares the number of physician office primary group practices to the number of Medicare beneficiaries by geographic area. These maps within a map provide visual representation of how states rank among other states, while also providing this information at the county level within a state. The application can be adapted for other levels of display, e.g. zip code level data.

Examples were developed with version 9.1 of SAS executing on a Windows XP platform, but are not platform specific and can be adapted by both beginning and advanced SAS users.

Barbara Okerson, Ph.D. is a Senior Scientist at the Virginia Health Quality Center where she is responsible for research, design, and project analysis using both clinical and administrative data for the Physician Office Quality Improvement Organization Support Center (QIOSC), hospital payment monitoring, data abstraction, and other health care quality improvement initiatives and contracted analyses. She is an adjunct faculty member at Virginia Commonwealth University Department of Health Administration and is a SAS Certified Professional and a Certified Professional in Healthcare Quality.

11:00 AM-12:00 PM

Is There an Art Historian in the County?

DP05 Keith Brown, *University of North Carolina, Chapel Hill NC*

Have you ever been intrigued by a table, a chart, or a map and wanted to explore deeper into the data behind it? Have you ever produced a table, a chart, or a map, and then been asked for another just like it, but with changes – looking at a different population, subpopulation, or geographic area? If you're working in a hard-copy environment, you can either modify the program to handle each new request for additional

information, or you can proactively produce a report for every possible level of the data. If there are numerous requests, the former course of action wastes your time; if there's little interest in delving deeper into the data for a particular subcategory, then taking the latter course wastes a great deal of resources. As programming becomes increasingly web-oriented, a third option opens up: adding exploratory capabilities to programs and output. This course allows you to anticipate the end user's needs for further analysis of a particular item of data and to meet that need with only the click of a mouse.

Keith J. Brown is an applications analyst and developer with the University of North Carolina Office of the President in Chapel Hill, NC. He has used SAS as a student, teacher, programmer, and consultant since 1981. Keith's primary areas of expertise include SAS/IntrNet and SAS/Graph.

ETL

Section Chairs: **John Bentley**, **Wachovia Bank**, **Charlotte, NC**; **Joseph Kelley**, **University of Georgia**, **Athens, GA**

Monday Morning – Lee

9:00 AM-10:00 AM A Quick Tour of SAS® ETL Studio to Build a Data Mart

ET06 Eric Rossland and Kari Richardson, *SAS Institute, Cary NC*

This paper guides the attendees through basic functionality of SAS ETL Studio as it may be used to help build a small data mart. Specifically, SAS ETL Studio will be used to:

- define custom groupings for objects created
- define necessary library definitions
- define source table definitions
- define target table definitions
- create a process flow diagram using a couple simple transformations
- load the target tables
- create reports using the target tables.

Kari Richardson has been an instructor and course developer at SAS for over 12 years. Prior to joining the Education Division, Kari worked as a tester for the SAS statistical products in the Quality Assurance Department. She holds MS degrees in both statistics, and mathematics, as well as an MBA in Accounting.

10:00 AM-11:00 AM Using SAS Enterprise ETL Server to Build a Data Warehouse: Focus on Student Enrollment Data

ET03 Evangeline Collado & M. Paige Borden, *University of Central Florida, Orlando FL*

There is a continued demand across the higher education sector for increased extraction and analysis of university data to facilitate strategic decision-making and management of university programs and activities. Using the SAS® Enterprise ETL Server, the University of Central Florida's Office of Institutional Research has merged more than 10 years and 5.5 million rows of student enrollment data from both legacy file structures and ERP-system file structures, as part of our data warehouse reporting solution. This paper will present the design concepts, ETL coding, data cleansing, metadata and final table structure of the student enrollment data tables. Once complete the full data warehouse will provide data integrity and integration for a breadth of information applications; improve reporting efficiency and consistency for a community of independent users; while allowing a shift from simple reporting to strategic performance measurement, evaluation, forecasting and decision-making.

Paige Borden is the Director of the Office of Institutional Research and the University Data Administrator at the University of Central Florida. She has a Doctorate in Educational Leadership – Higher Education and more than twelve years of experience at the University of Central Florida. She also serves as the Project Manager for the university data warehouse project.

Angel Collado is a Coordinator of Computer Applications for the Office of Institutional Research at the University of Central Florida. She has a Master's degree in Statistical Computing, and has been programming in SAS for 7 years. She currently serves as the Technical Lead for the university data warehouse project.

11:00 AM-12:00 PM **The SQL Optimizer Project: _Method_ and _Tree_ in SAS® 9.1**

ET02 Russ Lavery, *Numeric LLC, Chadds Ford PA*

I A

This paper discusses two little-known options of SAS PROC SQL: _method and _tree. The main body of information, and the major opportunity to learn about the topics, exists in the heavily annotated appendix. Efficient use of this material might involve reading and printing this paper and then working through the appendix. This paper will also attempt to describe some of the logic that the Optimizer employs.

PROC SQL has a powerful subroutine, the SQL Optimizer, that examines submitted SQL code and the state of the system (file size, index presence, buffer size, sort order, etc.). The SQL Optimizer creates a "run plan" for optimally running the query. Run plans describe executable programs that the Optimizer will create to produce the desired output. These executable programs can be quite complicated and often involve the creating, sorting, and merging of many temporary files. Consistent with the Optimizer's goal of minimizing run time, the executable programs will trim variables and observations from the input file(s) working file(s) as soon as they can be removed.

Many details of the run plan can be determined by using two PROC SQL options (_Method and _Tree) and this paper explains output from these two options. _Method and _Tree produce different output that presents different aspects of the run plan. Learning to interpret _Method and _Tree can help programmers explain why small variations in code or system conditions can cause substantial variations in run time.

Russ Lavery has a deep understanding of how the PROC SQL Optimizer works and a commitment to processing efficiency.

Monday Afternoon – Lee

1:30 PM-2:00 PM **Simplifying Existing Projects with Ideas from Data Warehousing**

ET01 Rick Aster, *Breakfast Communications Corporation, Paoli PA*

I

What is a data warehouse? The definitions you find might emphasize different qualities of the data it contains, the data sources, the platform, and the ease of use. Further, the definition might include how a data warehouse differs from a traditional operational database. But the fundamental objective of any data warehouse is to bring together available data related to a selected subject and organize it to make it easy to use—easy to retrieve, summarize, and analyse. Since this objective of data warehouse project is similar to the objectives of so many other projects, you might ask whether data warehousing's methodologies and ideas could be useful in everyday SAS projects. To a significant extent, they can be. To show how this works, this paper will consider three key ideas from data warehousing that can be applied to other projects: pulling data together, using data correctly, and getting consistent results. We will then see how these ideas can be useful in some kinds of projects where they may traditionally not be considered.

Rick Aster is a SAS programming consultant and instructor working mainly in Pennsylvania and Delaware. He co-wrote the 1991 book Professional SAS Programming Secrets and has gone on to release a book or audio set on SAS programming almost every year since then. Half of his work has been in the banking industry, where he has worked on major bank mergers and customer data warehouses.

2:00 PM-2:30 PM **Getting Started with SAS/Access for Oracle**

ET05 Joe Kelley, *University of Georgia, Athens GA*

B

As the use of relational database software has grown, so too has the need for fast, convenient, and reliable methods of accessing and analyzing the massive amounts of data stored in them. Oracle Corporation's Oracle® database software has proven itself to be a popular, robust product and SAS Institute has provided a succession of means of reading and writing the data stored in the tables and views of the Oracle rdbms. This paper will examine the use of the product "SAS/Access for Oracle", particularly as it relates to reading data.

F. Joseph Kelley is on the staff of Enterprise IT Services at the University of Georgia. A member of the Oracle support group, he maintains small Oracle servers he uses for testing purposes, and because it is fun. He is a long time SAS user, and clearly remembers when "CARDS;" had a strictly literal meaning.

2:30 PM-3:00 PM **RDBMS Sampling with SAS®: Slow, Faster, Fastest**

ET04 John Bentley, *Wachovia Bank, Charlotte NC*

B

One of the powers of SAS® Software is it's ability to access data in any major relational database using either the SAS/Access® LIBNAME engines or native SQL submitted via explicit pass-through. Performance is, to a large extent, dependent on the underlying database engine but sometimes important performance differences can be seen between the LIBNAME engine and explicit SQL pass-through. Using the Informix database running on an IBM p690 as a test environment, this paper presents performance timings for almost

a dozen different methods to pulling a sample. The techniques demonstrated can be used with any RDBMS and only a basic knowledge of librefs, the DATA Step, and SQL are needed.

Since 1987 John Bentley has used SAS in the healthcare, insurance, and banking industries. He is currently an Assistant Vice President with Wachovia Bank's Corporate Data Management Group and since 1997 has supported the Bank's data warehouse and data marts. John is a SAS Certified Advanced Programmer, has been a Section Chair at both SUGI and SESUG, and was the 2003-2004 President of the Charlotte Area Wachovia In-House SAS Users Group. He has a Masters degree in Political Science with a Concentration in Southeast Asian Politics and is intermittently pursuing a Masters of Information Systems.

HANDS ON WORKSHOPS

Section Chairs: **Debbie Buck**, **D. B. & P. Associates**, **Houston, TX**; **Joy Smith**, **North Carolina State University**, **Raleigh, NC**

Monday Morning – Amphitheater

7:30 AM-9:00 AM **How SAS Thinks**

HW01 Neil Howard, *Independent Consultant, Millington NJ*

A L L

The DATA step is the most powerful tool in the SAS system. Understanding the internals of DATA step processing, what is happening and why, is crucial in mastering code and output. Concepts covered:

- Logical Program Data Vector (LPDV or PDV),
- automatic SAS variables and how they are used,
- the importance of understanding the internals of DATA step processing,
- what happens at program compile time,
- what's happening at execution time,
- how variable attributes are captured and stored,
- handling processing defaults, data defaults, data conversions, and missing values,
- and the logic behind a MERGE.

This workshop focuses on techniques that capitalize on the power of the DATA step and working with (and around) the default actions. By understanding DATA step processing, you can debug your programs and interpret your results with confidence.

Neil Howard has been a SAS user for more than twenty years. She has been an invited speaker since 1983 on such topics as: efficiency techniques advanced DATA step processing, testing, graphics, 'effective presentations', and interviewing/hiring SAS programmers. She was a contract instructor for SAS Institute for seven years, teaching fundamentals, programming, macro, report writing, graphics and the annotate facility. A member of the SUGI Executive Committee since 1993, she chaired SUGI 20 in Orlando. She was academic chair for SESUG '04 in Nashville.

9:00 AM-10:30 AM **Five Ways to Create Macro Variables: A Short Introduction to the Macro Language**

HW03 Art Carpenter, *CA Occidental Consultants, Oceanside CA*

B

The macro language is both powerful and flexible. With this power, however comes complexity, and this complexity often makes the language more difficult to learn and use. Fortunately one of the key elements of the macro language is its use of macro variables, and these are easy to learn and easy to use.

Macro variables can be created using a number of different techniques and statements. However the five most commonly methods are not only the most useful, but also among the easiest to master. Since macro variables are used in so many ways within the macro language, learning how they are created can also serve as an excellent introduction to the language itself. These methods include:

- %LET statement
- macro parameters (named and positional)
- iterative %DO statement
- using the INTO in PROC SQL
- using the CALL SYMPUT routine

Art Carpenter's publications list includes three books, and over five dozen papers and posters presented at SUGI, and various regional and local user group meetings. Art has been using SAS since 1976 and is a SAS Certified ProfessionalTM. Through California Occidental Consultant he teaches SAS courses and provides contract SAS programming support nationwide.

10:30 AM-12:00 PM **SAS with Style: Creating Your Own ODS Style Template for RTF Output**

HW04 Lauren Haworth, *Genentech, Inc., South San Francisco CA*

I

Once you've started using the Output Delivery System, you'll quickly discover that your taste in output design probably doesn't coincide with the built in ODS styles shipped with SAS software. While you can edit your RTF output in Word to improve its appearance, a better approach is to create your own style template. This workshop will take you step by step through the process of creating a custom style for your RTF output.

You'll learn how to make minor modifications, and how to give your output a complete makeover. If you'd like all of your SAS output to be in hot pink with a gigantic script font, this workshop will show you how! Or, if you'd just like to use fonts and borders that coordinate with your corporate style guidelines, you can do that too. The workshop will also provide tips and tricks for taking advantage of the RTF destination, including the generation of custom page numbers and page breaks.

The workshop will walk through the TEMPLATE procedure, showing how you can redefine the default style elements and attributes to customize fonts, colors, and borders to suit your own personal or corporate style. You'll be given a basic style template that you can customize during the workshop and then take home to try out on your ODS output. While many of the techniques in this workshop apply to other ODS destinations, the focus will be on RTF. The workshop is aimed at beginning to intermediate ODS users, and is based on SAS versions 8.2 and 9.

Lauren Haworth is a senior manager of statistical programming at Genentech, Inc., in South San Francisco. She has been using SAS since 1988, and specializes in analysis and reporting for clinical trials. Lauren is the author of two books in the SAS Books by Users series: "PROC TABULATE by Example" and "Output Delivery System: The Basics".

Monday Afternoon – Amphitheater

1:30 PM-3:00 PM **SAS 9 Programming Enhancements**

HW02 Marje Fecht, *Prowerk Consulting LLC, Cape Coral FL*

ALL

Performance improvements are the well-publicized enhancement to SAS 9, but what else has changed that impacts your “SAS Programs”? This Hands-On Workshop explores many new SAS 9 features including:

- new functions that may eliminate the need for complex expressions
- changes and additions to informats and formats
- interface additions and improvements
- new export capabilities
- procedure enhancements
- and more. . .

This workshop is beneficial for Version 8 SAS users who are getting started with Version 9.

Marje is a Senior Partner with Prowerk Consulting, and has been a SAS software user since 1979. For sixteen years, she developed and taught a broad curriculum of courses for SAS Institute including Applications Development, Data Management and Access, Graphics, Reporting, Macros, and Statistics. Most recently, her consulting work at major financial and retail organizations has focused on implementing efficient systems for database access, reporting, analysis, and campaign management.

3:00 PM-4:30 PM **Using Dictionary Tables: An Introduction to SAS Metadata**

HW07 Frank DiIorio, *CodeCrafters, Inc., Chapel Hill NC*

IA

SAS system metadata (aka “dictionary tables”) can be used in an almost limitless number and range of applications. Despite being in Base SAS software since Version 6, references to them in conference proceedings and other sources is curiously sparse. Among the goals of this workshop is to raise awareness of this fertile (and free!) data source and have attendees begin to consider how to use the tables in their everyday programming. The more tangible objectives are:

- Describe the nature and contents of the tables
- Show how they are maintained
- Demonstrate their use in some simple, generalizable applications

One of the most common uses of the metadata is in general-purpose utility programs. Since these programs are best written as macros and the tables are best accessed through PROC SQL, attendees should have a working knowledge of SQL and the macro language.

A SAS programmer for nearly 30 years, Frank DiIorio is President of CodeCrafters, Inc. and the author of "SAS Applications Programming: A Gentle Introduction" and (with Ken Hardy) "Quick Start to Data Analysis with SAS." Frank has been active in the SouthEast SAS Users Group (SESUG) since its inception. He served one term as president of

the group, and co-chaired its 1994 and 1996 conferences.

*When not writing *about* SAS, Frank writes *in* SAS, primarily data management and reporting applications in the pharmaceutical industry. A native New Yorker, he has lived in Chapel Hill, North Carolina since 1974 and believes its claim to being the "Southern Part of Heaven."*

Tuesday Morning – Amphitheater

8:30 AM-10:00 AM **Gentle Introduction to Enterprise Guide**

HW06 Ben Cochran, *The Bedford Group, Raleigh NC*

B

The power and flexibility of Enterprise Guide ® (EG) enables the user to produce high quality reports as well as manipulate data through its point & click and drag & drop interface. Once the user becomes familiar with the EG environment, he/she can quickly master some of the basics of the SAS System. The user can then quickly move toward doing more complex analysis of data as well as generating all types of reports.

This hands on workshop gives the user an opportunity to become familiar with the EG environment and therefore the opportunity to manipulate data and generate impressive graphic and tabular reports in a relatively short amount of time.

After more than 11 years with SAS Institute in the Professional Services and Marketing Departments, Ben Cochran left to start his own consulting and SAS Training business in the fall of 1996 – The Bedford Group - an affiliate member of SAS Institute's Alliance Partner Program.

He has extensive expertise with SAS/EIS in building front-end menuing systems. Ben was the marketing manager for this product for over three years and worked with numerous SAS Institute customers in meeting their application development needs. He also developed the SAS/EIS demo that shipped with the SAS System for Release 6.11.

Ben has extensive experience in training SAS users in many areas of SAS. Since 1986, he taught over 250 SAS courses to over 2,500 SAS users across North America. He developed the first Release 6.11 SAS/EIS course and taught it for SAS Institute. His course notes were the draft for the book Getting Started with SAS/EIS, 2nd Edition.

Ben has been an invited speaker at SUGI and many Regional User Group conferences since 1988.

10:00 AM-11:30 AM **Moving Data and Analytical Results between SAS and Microsoft Office**

HW05 Vince DelGobbo, *SAS, Cary NC*

A L L

Transferring data between SAS and Microsoft Office can be difficult, especially when SAS is not installed on a Windows platform. This paper discusses using the HTML and XML support in Base SAS software to move data between SAS and Microsoft Office (versions 2002 and later). You can use the techniques described here regardless of the platform on which SAS software is installed (including a mainframe).

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

INTRO TO SAS

Section Chair: **Gary Schlegelmilch**, **US Bureau of the Census**, **Washington, DC**; **Phil d'Almada**, **Rho, Inc.**, **Chapel Hill, NC**

Monday Morning – Portsmouth Ballroom IV

8:00 AM-9:00 AM **The DATA Step: Where Your Input Matters**

IN01 Peter Eberhardt, *Fernwood Consulting Group Inc.,*

B

Before the warehouse is stocked, before the stats are computed and the reports run, before all the fun things we do with SAS can be done, the data need to be read into SAS. A simple statement, INPUT, and its close cousins FILENAME and INFILE, do a lot. This paper will show you how to define your input file and how to read through it, whether you have a simple flat file or a more complex formatted file.

Peter Eberhardt has been using SAS as in independent consultant since the early 1980's. Peter works mainly in ad-hoc data analysis and modeling. He has previously presented at SSU2001, SESUG, NESUG and SUGI.

Peter is SAS Certified Professional V8, SAS Certified Professional V6, and SAS Certified Professional - Data Management V6. In addition his company, Fernwood Consulting Group Inc. is a SAS Alliance Partner.

9:00 AM-10:00 AM

Formats, Informats and How to Program with Them

IN02

Ian Whitlock, *Independent Consultant, Kennett Square PA*

B

Formats tell how to display stored data and informats how to read them. In other words, they allow the separation of data from the values one works with. While most programming languages provide some sort of formatting capability, SAS provides an extensive system that comes to dominate how one works with SAS.

This talk will review some of the supplied formats, show you how to make your own with code or data, and then supply programming examples for how to get the best use of this system. All operating systems and versions of SAS are relevant.

Dr. Ian Whitlock has been programming largely in SAS since 1981. His main interest is in computer languages, particularly SAS, and how the language affects the programming process. He has participated since 1985 in many international, regional, and local SAS User Group meetings. He is also active on SAS-L with some insightful answers to perplexed SAS programmers.

10:00 AM-11:00 AM

A Tour of the SAS Reporting Toolbox

IN03

Frank DiIorio, *CodeCrafters, Inc., Chapel Hill NC*

B

One of the most intriguing aspects of SAS programming is the variety of solutions that it offers for even the simplest tasks. Ask “n” programmers to add a column of numbers, and you’ll get at least “n” solutions that are as valid as they are different.

Nowhere is this diversity of approach more dramatic than communicating (aka “reporting”) results. Be it a simple listing, statistical analysis, or graphic display of an analysis, the choice of tools available to SAS programmers can be overwhelming.

This paper gives an overview of the more common reporting tools in Base SAS and SAS/GRAPH. Rather than start with an enumeration of the options, procedures, and other features, we focus on a set of questions the programmer should ask. Thus armed with a bit of focus and specificity, we examine the capabilities of the tools. We identify strengths and weaknesses of each, provide some examples, and when appropriate show how the tool “plays well with others.”

This overview is just that – a high-level reconnaissance of what’s available. Readers should gain an exposure to a wide variety of tools and their capabilities, and will hopefully become enthusiastic about trying new and different approaches to even old and familiar tasks.

A SAS programmer since 1975, Frank DiIorio is President of CodeCrafters, Inc. and the author of "SAS Applications Programming: A Gentle Introduction" and "Quick Start to Data Analysis with SAS." Frank has been active in the SouthEast SAS Users Group (SESUG) since its inception. He served one term as president of the group, and co-chaired its 1994 and 1996 conferences.

*When not writing *about* SAS, Frank writes *in* SAS, primarily data management and reporting applications in the pharmaceutical industry. A native New Yorker, he has lived in Chapel Hill, North Carolina since 1974 and believes its claim to being the "Southern Part of Heaven."*

11:00 AM-12:00 PM

Preemptive DATA Cleaning: Techniques

IN05

Mal Foley, *University of North Carolina-Chapel Hill, Chapel Hill NC*

B

Data cleaning is a necessary evil... Or is it? Many techniques exist that prevent data errors at data gathering and/or at data input. The use of these techniques eliminates or minimizes the errors that actually get into your computer files. One such technique is check digits. Check digits can eliminate up to 99% of all transcription and keying errors. Other techniques include proper form design, data monitoring, double keying, and hash totals. This paper examines these error-prevention techniques through examples and where applicable, it includes SAS code.

Mal Foley started programming computers in high school and never stopped. His career includes being an international computing consultant, a university professor, and the CEO of his own computing company. Until recently, Mal was a senior SAS programmer/analyst in the Department of Biostatistics at the University of North Carolina at Chapel Hill. He actively participates in user groups and will chair the 2005 Pharmaceutical Industry SAS Users' Group. Currently, an independent SAS trainer and provides in-house SAS seminars around the country.

Monday Afternoon – Portsmouth Ballroom IV

1:30 PM-2:30 PM

Summarizing Data with Base SAS® PROCs

IN06

Debbie Buck, *D. B. & P. Associates, Houston TX*

B

Base SAS provides a number of procedures designed to aid the SAS user in developing data summary reports. These procedures include MEANS, UNIVARIATE, FREQ, REPORT and TABULATE. Additionally, PROC FORMAT is also available to modify the appearance of data values or combine values into desired categories within PROCs without changing actual data values or creating new variables.

This presentation explores various common types of summary reports and what factors you should consider in deciding which procedure is best suited to your reporting needs. It is not meant to be a detailed tutorial on PROC step programming code for all of these procedures, but rather a guide on how to decide which procedures fits the requirements for a given report.

Summary reports generated using Base SAS PROCs are presented along with the code producing these reports. These examples are valid with SAS Versions 6-9.

Debbie Buck has been programming in SAS for over 25 years and has been an independent consultant in Statistical Consulting and SAS Programming for 19 years, primarily in the Pharmaceutical and Medical Device fields. She has written and presented papers at SUGI, regional, and local SAS user group conferences. Debbie chaired the SCSUG 1997 Conference and co-chaired SSU 2001, the Joint Conference of the SouthEast SAS Users Group and South Central SAS Users Group. She is active on the Executive Committees of both SESUG and SCSUG, and is a Section Co-chair at SUGI. Debbie is also a Contract Instructor for the SAS Institute.

2:30 PM-3:30 PM

Manipulating Data: Elements of the DATA Step Language

IN07

Paul M. Dorfman & Dr. Slava Tsiolko

B I

In the SAS DATA step, you can manipulate data by instructing SAS what to do. However, SAS understands only instructions given in its own tongue. The DATA step language (SAS DSL) is simple and powerful, its syntax is crisp and highly readable, and it is easy to learn. In this presentation, we will try to introduce the basics of speaking SAS. Just like in any language, a valid SAS phrase contains meaningful expressions that follow an intelligible sequence. These two principal parts will be considered one at a time:

1. Expressions - basic blocks from which statements are built: Constants - Variables- Arrays- Assignment and Sum-Operators- Functions.

2. Control Flow - the order of execution of instructions: Conditional execution-Branching-Repetition. The presentation should provide an idea about the overall structure and main building blocks of the language used in the SAS DATA step. Some aspects (functions, specific statements) will be touched just briefly as part of the big picture and covered in detail in other Intro to SAS presentations.

Paul Dorfman started using SAS while pursuing his Ph.D. in computational plasma physics. Thereafter, he has used the software in telops, banking, credit card, pharmaceutical, and managed health care industries. He specializes in SAS implementations of high-performance algorithms, such as sorting and searching for data stuff, preferably rapidly. Paul is the first and only SAS programmer to have rendered SAS Language implementations of all classical hashing algorithms; of quick, radix, and topological sorts; of hybrid hash indexing scheme; and of a number of programming methods utilizing the APP functions. Over the years, he has earned a number of honorable nicknames, such as "sashole" from a group of Verizon COBOL critters, "MVS" and "Hall-of-Famer" from SAS-L, and "Hash-Man" from SAS R&D.

Dr. Vyacheslav [Slava] Tsiolko started using SAS while pursuing his Ph.D. in physics of intense ion beam sources and ion-beam plasma. Thereafter, he continued to use it for computational purposes in many areas of applied physical electronics. He has also touched on SAS applications related to telecommunications, business risk assessment, and managed health care. Currently Dr. Tsiolko lives in Kiev and works as a Senior Researcher for the Institute of Physics of the National Academy of Science, Ukraine.

3:30 PM-4:30 PM

Fun With Functions

IN08

Marje Fecht, *Prowerk Consulting LLC, Cape Coral FL*

B I

Functions can be fun (and useful) if you know when, how, and why to use them. Functions can be frustrating if you don't know the tricks behind them.

In this presentation, we will explore the most commonly used functions to streamline data processing and reduce your programming effort. You will learn how to use summary functions, string functions, conversion functions, and date functions. We will also explore some of the 60 functions added to Version 9 SAS software.

This presentation will also help you understand WHERE to use functions, since they aren't "just for the DATA Step".

Marje is a Senior Partner with Prowerk Consulting, and has been a SAS software user since 1979. For sixteen years,

she developed and taught a broad curriculum of courses for SAS Institute including Applications Development, Data Management and Access, Graphics, Reporting, Macros, and Statistics. Most recently, her consulting work at major financial and retail organizations has focused on implementing efficient systems for database access, reporting, analysis, and campaign management.

4:30 PM-5:30 PM

The Program Data Vector As an Aid to DATA Step Reasoning

IN09

Marianne Whitlock, *Independent Consultant, Kennett Square PA*

B I

The SAS® DATA step is easy enough for beginners to produce results quickly. You can use a model from a manual or a colleague's program, and adapt it to your problems. Typically, you code a "SET" or "INPUT" statement and proceed with assignment statements etc. to produce a new file from a previous one. You can easily print the results, or put the data into a statistical procedure, without ever troubling yourself with the Program Data Vector (PDV). When you want to accomplish something more complex though, you find that familiarity with the typical DATA step pattern is not enough, and if you have not internalized the concept of the PDV, you are not well equipped to tell SAS what you want.

Using increasingly complex problems, this talk will step through code from the PDV point of view. The goal will be to give confidence to try more manipulative programming. A set of rules governs the PDV, and at each point in the compiling and execution of the DATA step, it is possible to know exactly what information the PDV holds and what it will do with that information. Understanding this enables you to take control, and tell SAS what you want.

Marianne Whitlock has been programming in SAS for over 20 years. Her main SAS interests are data management and analysis, data manipulation, report writing, and macro design. She has previously presented papers for SUGI, NESUG, and DCSUG, and SESUG.

POSTERS & VIDEO POSTERS

Section Chairs: **Steve James**, **Centers for Disease Control & Prevention**, **Atlanta, GA**; **Dana Rafiee**, **Destiny Corporation**, **Rocky Hill, CT**

On display all day Monday and until noon on Tuesday in Holley Ballroom V&VI

Drop by the poster area to meet the authors on Monday between 1:30 and 2:30 p.m.

A Snazzy Graph Featuring Five Variables, Axis Breaks, and Good Resolution.

PS01

Rachel A. Baker, Savannah River National Laboratory, Aiken, SC

Anthony T. Baker, Westinghouse Savannah River Company, Aiken, SC

Monitoring groundwater contamination is of great concern at operational sites in the United States Department of Energy (DOE) complex. The Savannah River Site (SRS) in Aiken, South Carolina is one such site. Elevated measurements of radium-226 and radium-228 were recently observed in numerous monitoring wells at the SRS Sanitary Landfill (SLF). The issue at hand was whether these elevated data are consistent with groundwater impacted by SRS operations or whether they are typical of natural conditions. Graphical data displays are important tools for gaining an understanding of the data and of relationships between various parameters. SAS® software was used to develop graphs of the radium isotopes versus other analytes, including field pH, for the SLF wells. Five variables were depicted in each well plot: analyte, time, measurement, lab, and detection. Two different result axes were required, in addition to breaks on the pH axis. Clarity is an issue for graphical output to be displayed in final reports. SAS software provided the means to create high resolution graphs of many dimensions with vertical axis breaks. The weight of evidence from these and other graphs, in addition to statistical and geochemical analyses, supported a conclusion of naturally-occurring radium in the SRS SLF.

Rachel A. Baker completed an MS in statistics at the University of Florida and has over 12 years of experience with SAS programming. As a Principal Scientist, her primary work at the Savannah River National Laboratory involves the analysis of environmental data; the development of Web-based statistical computing applications for environmental professionals for the retrieval and analysis of groundwater data; and other SAS tasks that include system analysis and design, code generation, modification of legacy code, debug and testing, implementation, maintenance, documentation, and customer support.

Anthony (Andy) T. Baker is a Principle Software Engineer with over 18 years of experience in Information Technology, including enterprise application development utilizing the following technologies: Java, Perl, CGI, JDBC, J2EE, Servlets, JSPs, HTML, DHTM, JavaScript, PL/SQL, ORACLE, and RDBMS. His work at the Savannah River Site involves development and deployment of Web based applications, maintaining Apache/ JServ and Tomcat web servers on both Windows and Solaris hosts, administering Internet Information Server, and administering Oracle Application Servers for the deployment of forms and reports.

Emailing a SAS® Report to Excel

PS04 C. Royce Claytor, *Dominion Resources Services, Richmond VA*

Your database is on the mainframe. Your client is on the PC. You have the batch report developed, but the client wants a spreadsheet. To top it off, the client wants the spreadsheet emailed to multiple people. To be sure there are a number of ways to accomplish these requirements, but you want something clean and efficient—preferably one step. This paper shows how to create a report using ODS on the mainframe, write it to an HTML data set, and send it as a Excel attachment to an email in one step with SAS® software.

Royce Claytor has been in the SAS arena over 30 years, first, with Richmond Public Schools analyzing student, demographic, and school census data. Later at Dominion Resources Services, an electric utility, she designed and programmed a power database, conducted training, developed color graphics for management, and has done her share of data cleansing, manipulating, and reporting. Primarily she now serves as SAS Administrator supporting SAS users on the mainframe and PC platforms at Dominion. Recent papers given at the Virginia SAS Users Group were "Accessing Data with ODBC" and "Emailing a SAS® Report to Excel".

Using SAS® to Process Repeated Measures Data

PS05 Cyndie Gareleck & Terry Fain, *RAND Corporation, Santa Monica CA*

(Abstract not available at time of printing)

(Biography not available at time of printing)

Renaming SAS® Variables

PS06 Imelda C. Go, *South Carolina Department of Education, Columbia SC*

This paper discusses a number of ways to rename variables. Its topics include the RENAME statement used in DATA steps, the RENAME= data set option, the AS keyword for PROC SQL, using macros, and using the DATA _NULL_ step.

Imelda C. Go, Ph.D., is an educational program evaluator and researcher at the South Carolina Department of Education in Columbia, SC.

Robustness in Meta-analysis: A Macro for Computing Point Estimates and Confidence Intervals for Standardized Mean Differences and Cliff's Delta

PS07 Kristine Y. Hogarty, Jeffrey D. Kromrey, John M. Ferron, Melinda R. Hess, Constance V. Hines, *University of South Florida, Tampa FL*

This paper describes a SAS macro that provides three approaches to estimating mean population effect sizes and confidence intervals for meta-analysis. The program calculates point estimates of the standardized mean difference (Cohen's d and Hedges' g) and the ordinal index Cliff's Delta. Further, the program computes a series of confidence bands around each estimated value of the effect size. These confidence intervals are calculated using the estimated variance of the mean effect size and the critical z value (1-). The paper presents a demonstration of the SAS/IML code employed in a macro entitled METACOMP, and provides a table with the resulting output.

Kristine Y. Hogarty is the Director of Assessment for the College of Education at the University of South Florida. Her experiences include instrument development, research design and data analysis in Education, Criminology, Business and Industry. Her primary research interests are applied statistics and data analysis. Her work has been published in Behavior Research Methods, Instruments, & Computers, Educational and Psychological Measurement, Journal of College Teaching & Learning, Journal of Police and Criminal Psychology, Journal of Research on Computing in Education, Journal of Research in Education, Multiple Linear Regression Viewpoints, and Psychometrika.

The BEST. Message in the SASLOG®

PS09 Andrew T. Kuligowski, *Nielsen Media Research, Dunedin FL*

Your SAS routine has completed. It is apparently a success – no bad return codes, no ERROR or WARNING messages in the SASLOG, and a nice thick report filled with what appear to be valid results. Then, you notice something at the end of the SASLOG that warns you that, somewhere in your output, one or more numbers are NOT being printed with the formats you requested.

NOTE: At least one W.D format was too small for the number to be
printed. The decimal may be shifted by the "BEST" format.

This presentation will review an ad hoc that can be used to quickly identify numbers that are too large for your selected format – certainly much quicker and effectively than attempting to eyeball a massive report!

Andrew T. Kuligowski has been a SAS user for over 20 years. He has augmented his professional coding experiences in the petrochemical and media research industries by speaking at SESUG, SUGI, and many other SAS conferences and user group meetings. Andrew serves on the Executive Council of the SouthEast SAS Users Group, and was conference co-chair for SESUG'97 in Jacksonville, Florida and Tennessee SAS Users Day in Knoxville, Tennessee. In his spare time, Andrew can also be found volunteering at the Florida Aquarium in Tampa.

An Animated Guide©: The Data Step Debugger

PS10 Russell Lavery, *Contractor for Numeric, LLC., Chadds Ford PA*

Use of the Data Step Debugger (DSD) simplifies debugging code and, while the data step debugger (DSD) was introduced in SAS version 6.11, it is not widely known. It is a powerful tool for finding logical errors in the data step. It gives you control over execution of "data step" code and allows you to watch your program execute- line by line. The DSD allows you to watch if-else statements execute to check if the code is correct while the code is running, rather than checking for correctness by writing Proc Print statements after the Data Step has finished. The DSD allows you to not only watch code execute, but will allow you to MANUALLY CHANGE the values in the program data vector as your job is running. The DSD does not issue any error messages as you use it. The programmer mentally compares what s/he sees, in the Program Data Vector (PDV), with what s/he expected to see. Critical to use of the DSD is an understanding of the PDV and the DSD is an excellent way to learn the PDV.

The goal of a programmer learning the DSD should be to learn the DSD commands and how to link them to a key or to call a macro of commands. Linking a series of commands to a key, or calling a macro makes the DSD much more powerful.

(Biography not available at time of printing)

Knowledge Needed to work in Pharma

PS11 Carol Matthews, *Biocor, Yardley PA*

(Abstract not available at time of printing)

(Biography not available at time of printing)

Using SAS/GRAPH® GMAP to Enhance a Diabetes Wellness Campaign

PS13 Barbara B. Okerson, *Virginia Health Quality Center, Glen Allen VA*

The role of a quality improvement organization (QIO) is to assist healthcare providers in making successful and meaningful changes in the way care is delivered and in improving outcomes of that care. The ability to identify spatial differences in indicator rates, demographics, medical shortages, and technologies can help improve the efficiency of information delivery to and by healthcare providers. Geographical data analysis and display can be used to summarize spatial data, identify variations in performance by regions and providers and show performance trends over time through both static and interactive displays. This analysis can also be used to focus culturally sensitive and technologically delivered materials as well as assist in proposed solutions for identified unmet needs.

SAS provides a comprehensive mapping tool through the SAS/GRAPH GMAP procedure for both geographic and non-geographic spatial displays. While this procedure was originally designed to produce two- or three-dimensional color maps, new spatial analysis tools, combined with the Output Delivery System (ODS), Java, Active-X, and the new MAPIMPORT procedure, allow the GMAP procedure to remain an excellent tool for spatial data display. This presentation uses SAS/GRAPH GMAP procedure to develop a series of maps as part of a diabetes wellness campaign for the state of Virginia.

Examples were developed with version 8.2 of SAS executing on a Windows 98 platform or 9.1 of SAS on a Windows XP platform. Examples are not platform specific and can be adapted by both beginning and advanced SAS users.

Barbara Okerson, Ph.D. is a Senior Scientist at the Virginia Health Quality Center where she is responsible for research, design, and project analysis using both clinical and administrative data for the physician office setting at the national level, and for hospital payment monitoring, data abstraction, and other health care quality improvement initiatives and contracted analyses for the state of Virginia. She is an adjunct faculty member at Virginia Commonwealth University Department of Health Administration and is a SAS Certified Professional.

SAS® Certification - Is It For You?

PS14 Sarbjit Rai, *Genentech Inc., South San Francisco CA*

The SAS Certified Professional Program was launched by SAS Institute, Inc. in 1999 to recognize users who can demonstrate an in-depth understanding of SAS software. The program consists of five certifications across a number of functional areas. There are several SAS courses which prepare users for the certification exams. To date many programmers have taken these courses, some experienced users just take the exams, and there are many other SAS savvy professionals who are experienced but not SAS certified!

This paper will review the benefits and limitations of the Certification Program for new SAS users as well as those who are more experienced and investigate whether it meets the needs of the user community. Why get certified? What's in it for you? The impact of the Certification Program on SAS jobs and its importance in industry vs. work experience and other SAS training courses will also be explored from an end user's perspective.

Sarbjit Rai is manager of the QC group within Statistical Programming. She lives in San Francisco and has been with

Genentech Inc. for over 4 years. Prior to this Sarbjit was a statistical programmer with GlaxoSmithKline in England. She has extensive experience in SAS programming and filing NDA and BLA submissions to the FDA. In her free time she enjoys traveling, wine tasting and taking advantage of all that the bay area has to offer!

Macro Architecture in Pictures

PS16 Mark Tabladillo PhD, *markTab Consulting, Atlanta GA*

The qualities which SAS macros share with object-oriented languages account for the power of macro programming. This picture guide will graphically model and introduce how SAS macros are best built, and use these graphics to illustrate how macros share some qualities of object-oriented programming (defined as encapsulation, polymorphism, and inheritance).

Mark Tabladillo heads MarkTab Consulting, an Atlanta, GA based software development corporation. Since 1991, he has written SAS software applications for healthcare, commercial finance, and epidemiology. He has consulted primarily for the Centers for Disease Control since 1999. Mark teaches graduate level statistics and management part-time for the University of Phoenix. His Georgia Tech doctorate is in Industrial Engineering. Mark has previously presented at SUGI conferences, regional and local SAS users' groups.

Mapping an Exclusive Regular Expression Strategy

PS17 Mark Tabladillo PhD, *markTab Consulting, Atlanta GA*

In version 9, the SAS System introduces Perl regular expressions (sometimes known by the acronym PRX, the first three letters of these new functions or call routines). However, previous versions of SAS already had regular expressions (known by their acronym RX, the first two letters of these functions or call routines). This presentation will map specific functional and performance differences in these two exclusive regular expression strategies, and offer recommendations on when to use each strategy.

Mark Tabladillo heads MarkTab Consulting, an Atlanta, GA based software development corporation. Since 1991, he has written SAS software applications for healthcare, commercial finance, and epidemiology. He has consulted primarily for the Centers for Disease Control since 1999. Mark teaches graduate level statistics and management part-time for the University of Phoenix. His Georgia Tech doctorate is in Industrial Engineering. Mark has previously presented at SUGI conferences, regional and local SAS users' groups.

Funky Formats

PS18 Zeke Torres, *1016inc.com, Chicago IL*

I will review a PROC TABULATE or PROC PRINT etc. and get a little fancy with ODS and PROC FORMAT adding HTML to it allow links to the Excel output which is also generated from this code. This gives a drill down effect and a quick way to allow end users to go thru lots of data in an easier way.

(Biography not available at time of printing)

SERENDIPITY

Section Chairs:
Erik Larsen
Independent Consultant
Charleston, SC

Jennifer Waller
Medical College of Georgia
Augusta, GA

Monday Morning – Portsmouth Ballroom I-III

8:00 AM-8:30 AM Use a SAS Database Search Engine Instead of Writing a Program

SE11 Eugene Yeh & Donovan Verrill, *PharmaNet Inc., Cary NC*

We developed a search engine to scan all the variables from multiple SAS data sets located in different directories. It produces a summary report of data values and names of data structure elements (e.g. variable names and labels) from multiple data sets that match your search parameter. The report can hyperlink to a subset of the source data sets, consisting only of observations that match your search criteria. You can also restrict the names of variables and data sets scanned and therefore it can filter data just like the SAS Viewer.

This paper describes the use of the SAS database search engine in performing several different tasks. These tasks involve scanning many data locations, where the approach of using a search engine is more practical and efficient than writing and executing a SAS program. A wide range of personnel can use this method since programming knowledge is not required.

Eugene Yeh is Senior Statistical Programmer at PharmaNet, Inc. He holds a BS and MS in biomedical engineering, and he has worked as a database manager, biomedical engineer, and SAS programmer. Eugene has over 10 years experience using SAS for clinical trials in the pharmaceutical, biotech and medical device industries, including preparing NDA and PMA submissions.

*Donovan Verrill has been using SAS since 1992, and working in the Pharmaceutical industry since 1997 when he joined DuPont Merck. In that time, he has worked on trials Phase I - Phase IV, including numerous NDA*s. Presently he works*

for PharmaNet Inc.

8:30 AM-9:00 AM **Producing a Nonrefereed Professional Publication for SESUG or SUGI**

SE07 Phil d'Almada, *Rho, Inc., Chapel Hill NC*

Many papers are prepared with high levels of product knowledge but with a wide range of style. This paper appeals to authors of papers on the use of the SAS System to include a high level of professionalism in the preparation of a paper for publication. The paper focusses on an array of much misused points of grammar and expression that are recurrent in the SAS user community. Elements of this array include construction of headings, simple and frequent grammar oversights, verb inflection, applicable sections within a paper, and published appearance of the final paper. While strong, in-depth and lengthy sources are available to assist apotential author, the reader of this paper will be exposed to a short account of producing a SAS paper while paying attention to those elements that many authors have easily and frequently overlooked.

Phil d'Almada began using SAS in 1976 becoming a dedicated SAS user in 1988. Phil has used SAS for analysis, data management, reporting and building applications, in agricultural research, resource economics, public health research and pharmaceutical reporting. Phil has presented papers both at SUGI and SESUG and is an active member of the SESUG Executive Council having acted as Co-chairman of SESUG 2K held in Charlotte, North Carolina.

9:00 AM-10:00 AM **So You Want to Be A Manager: A Discussion on Issues to Consider Before Making a Career Move**

Lauren Haworth, *Genentech, Inc., South San Francisco CA*

SE12 Stephen M. Noga, *Rho, Inc., Chapel Hill NC*

Andrew T. Kuligowski, *Nielsen Media Research, Dunedin FL*

Are you thinking your next career move should be moving into a management position? Have you thought through all the pros and cons? This panel discussion will give you some things to think about before making that decision. The panelists have had different experiences. One panelist moved into management - and then moved out of management. Another juggles management responsibilities with coding responsibilities. The other panelist focuses on managing people and projects. The panelists will share their experiences and provide an opportunity for you to ask questions.

Lauren Haworth is a senior manager of statistical programming at Genentech, Inc., in South San Francisco. She has been using SAS since 1988, and specializes in analysis and reporting for clinical trials. Lauren is the author of two books in the SAS Books by Users series: "PROC TABULATE by Example" and "Output Delivery System: The Basics".

Andrew T. Kuligowski has been a SAS user for over 20 years. He has augmented his professional coding experiences in the petrochemical and media research industries by speaking at SESUG, SUGI, and many other SAS conferences and user group meetings. Andrew serves on the Executive Council of the SouthEast SAS Users Group, and was conference co-chair for SESUG'97 in Jacksonville, Florida and Tennessee SAS Users Day in Knoxville, Tennessee. In his spare time, Andrew can also be found volunteering at the Florida Aquarium in Tampa.

10:00 AM-11:00 AM **Creating Stored Processes in Enterprise Guide**

SE18 Greg Granger, *SAS, Cary NC*

While SAS Stored Processes may be executed within many SAS applications, there is only one SAS product that allows you to fully develop, test and deploy stored processes all from within one application -- SAS Enterprise Guide 3.0. This paper will take you through the entire process of stored process authoring, testing, debugging and deployment in Enterprise Guide. Learn how to avoid common mistakes and create SAS applications that can be surfaced in Enterprise Guide, the SAS Add-In for Microsoft Office, WRS, the Portal, and beyond. Also covered will be how to utilize parameters to allow for run-time customization of stored process execution and how to transform your favorite EG tasks into stored processes.

Greg is a Systems Developer in the Platform Services Department at SAS. This group is responsible for developing SAS BI infrastructure for the Microsoft Windows platform. He developed the underlying Stored Process execution layer used by both EG and AMO, as well as the Stored Process HTML generation feature in EG 3.0. Greg has over twenty years of experience programming a variety of computer platforms and holds a BS in Computer Science from Virginia Tech. Greg joined SAS in 1997.

11:00 AM-12:00 PM **HIRE Power: Interviewing and Assessing SAS Talent**

SE13 Neil Howard, *Independent Consultant, Millington NJ*

"The best thing you can do for your competition is to select poor quality staff." VP Recruitment, Microsoft

'The closest to perfection a person ever becomes is when he fills out a job application form.' (Stanley J. Randall)

You are interviewing a candidate in a sharp navy suit, with an impressive resume and ten years of SAS experience. But, how do you tell if this ten years of experience is really ten years, or the same year over and over again? If, indeed, past behavior or past job performance is the best indicator of future performance,

how is the SAS community probing for the facts? What are our assessment criteria?

The author developed a survey tool administered to selected SAS programmers, analysts, trainers, human resource experts, and managers as a reality check into our performance as interviewers and our experience as interviewees. What techniques are being used to interview and assess SAS talent?

This paper explores such hiring issues as: identifying resume red flags, conducting useful phone interviews, structuring general face-to-face interviews, "measuring" intangibles, proficiency testing, and code walk-throughs. The paper includes a collection of technical SAS questions gathered from past SUGI papers, SAS users and SAS-L contributors; and discusses the development of probing technical questions, metrics, and standards.

Neil Howard has been a SAS user for more than twenty years, Neil has been an invited speaker since 1983 on such topics as: efficiency techniques, DATA step processing and internals, advanced DATA step topics, testing and validation, graphics, 'effective presentations', and interviewing/hiring SAS programmers. She was a contract instructor for SAS Institute for seven years, teaching fundamentals, programming, macro, report writing, graphics and the annotate facility. She has been a member of the SUGI Executive Committee since 1993 and was proud to chair SUGI 20 in Orlando and SESUG '04 in Nashville.

Monday Afternoon -- Portsmouth Ballroom I-III

1:30 PM-2:30 PM — Pruning the SASLOG - Digging into the Roots of NOTEs, WARNINGs, and ERRORs

SE14 Andy Kuligowski, *Nielsen Media Research, Dunedin FL*

You've sat through constant design meetings. You've endured countless requests for "just one more little change". You even managed to find a creative solution to that nagging technical problem. But, you persevered, and despite all of the obstacles, you've managed to eliminate the final syntax error in your newest SAS* routine. Time to sit back and relax -- uh, not quite ...

The primary focus of this presentation will be on techniques to ensure comprehension of your input data. We will look at several messages that are often found in the SASLOG, such as:

NOTE: MERGE statement has more than one data set with repeats of BY values.

that imply that there may be gaps in your knowledge of your data! Special emphasis will be placed on the use of ad-hoc queries to assist in finding data anomalies that can cause problems with your SAS code. It is assumed that the reader has a basic understanding of the SASLOG, including its composition, format, and the SAS system options which control its content.

Andrew T. Kuligowski has been a SAS user for over 20 years. He has shared his professional coding experiences in the petrochemical and media research industries by speaking at SESUG, SUGI, and many other SAS conferences and user group meetings. Andrew serves on the Executive Council of the SouthEast SAS Users Group, and was conference co-chair for SESUG \'97 in Jacksonville and for Tennessee SAS Users Day in Knoxville. In his spare time, Andrew can also be found volunteering at the Florida Aquarium in Tampa.

2:30 PM-3:00 PM — Extracting Data from PDF Files

SE10 Nathaniel Wooding, *Dominion Virginia Power, Richmond VA*

The Adobe Portable Document File (PDF) format has become a popular means of producing documents for use on other computers when the author cannot be certain of the software or operating system available on the other machines. However, once a document is stored in this format, it can only be read and the Adobe Acrobat Reader software does not offer a text extraction tool. This paper discusses third party software that can translate a PDF to ASCII and shows how to automate the process using SAS.

Nat Wooding has spent his career managing and reporting on water quality-related data for an electric utility or, as he wife tells people, counting fish. They and their cats, groundhogs, deer, and what ever else wanders by, live near Richmond, Virginia. He is active in the Virginia SAS User's Group and occasionally appears on SAS L.

3:00 PM-4:00 PM — SAS9 BI Tools: Making Your SAS Analytics and Reports Available to Everyone in the Decision Making Process

SE16 Steve Harris, *SAS, Cary NC*

Leverage your skills and expertise by making your SAS programs and models available to the broad group of non-technical business users. SAS BI Tools each target users with specific skill sets, and together provide integrated query, reporting, OLAP and analytic capabilities. SAS 9 allows you to provide better service to those users less inclined to use traditional SAS tools who depend on your skills and expertise.

Steve Harris has been at SAS for 7 years, having spent 4 years in R&D working as a Java and web developer. He has also worked in Sales and Marketing. Currently Steve is the product manager for the Information Delivery Portal and AppDev Studio. Steve graduated from North Carolina State University in 1998 with a degree in Computer Engineering. In May of 2004, Steve obtained his MBA from the Fuqua School of Business at Duke University.

4:00 PM-4:30 PM **Using Web Tools to Enhance Population Identification**

SE09 Carol Martell, *UNC Highway Safety Research Center, Chapel Hill NC*

In social science research a study population is often extracted from a large public or limited-access database. The fact that these data were not created and are not maintained for the purposes of data exploration is often a stumbling block for the researcher. The accurate identification of a study population, exclusively and inclusively, is crucial. This paper gives an example of combining web tools available in SAS® to leverage a point of discovery into a convenient means for corrective action. This tool developed to enhance population identification provided a single web page that flagged potential candidates and enabled the identification and capture of cases that would otherwise have been left out of a study.

Carol Martell began her computing career in 1971. Her research career began with clinical trials work at the Lipid Research Clinics Coordinating Center. She was later introduced to social science research at International Laboratories for Population Statistics (POPLABS) in the Department of Biostatistics at UNC Chapel Hill=s School of Public Health. While there she designed and implemented a data management system in the Middle East to handle data from a fertility/mortality add-on for a census survey. Her career at Highway Safety Research Center began in 1989. She enjoys using SAS as an information management tool, decoding and manipulating what others might not first approach using SAS. Her experience with building a lan and managing departmental computer services has broadened her vision for computing solutions. She developed dynamic web application and web data management skills designing and revamping yearly the registration systems for the National and International Walk Our Children to School events, for what would become the Pedestrian and Bicycling Information Center at HSRC. Her more recent web application contributions surface the NC crash data and NC Alcohol Facts to the web.

4:30 PM-5:30 PM **Getting from What to How and Back to What: Conflict between Technical and Business Stakeholders in Information Technology Projects or It Looked Good on Paper**

SE01 Alan Mann, *Skyline Solutions, Martinsburg WV*

In planning and carrying out IT projects, technical and general business management professionals gravitate or start out from 2 distinct camps, or communities. This contention leads to confusion, compromise, and sometimes failure in an otherwise sound business solution. Common to the technical side is the notion of the business side's lack of technologic expertise, while the business side will believe the technical sector is hijacking their project to a chaotic end. How did 2 distinct parties within an enterprise develop? What can be done to address and/or measure this conflicting organizational dynamic, and how may it be leveraged to finish the project?

Different schools of project management will be discussed, from the Waterfall Design to Extreme Programming. The proposition of innovation through differing technologic levels will be examined, concluding with a discussion of a Rogerian model of acceptable compromise.

Alan Mann has been working professionally with SAS for the past 16 years. Over that time, he has built applications for various industries, such as occupational epidemiology, healthcare, property and casualty insurance, travel, telecom, financial services, government, and energy. Most of this time has been spent as a consultant within the above enterprises, giving an insight into the different workgroup dynamics that occur in those organizations.

Alan holds a BA from the University of Delaware, and is writing his thesis in organizational dynamics for a Master of Science from the University of Liverpool in the UK.

Tuesday Morning -- Portsmouth Ballroom I-III

8:00 AM-9:00 AM **Automated Excel-ent Validation**

SE02 Janet Stuelpner, *Left Hand Computing, Inc., New Canaan CT*

During the clinical trials process, the raw data is entered into a database, cleansed, manipulated and then analyzed. Prior to tables and listings, analysis datasets are created that include both raw data and derived data. A great deal of documentation is required to make sure that all of the algorithms are specified and implemented correctly. Most often, the documentation for these analysis datasets is in the form of an excel spreadsheet that states the variable names, labels, variable type, length of value, algorithm for derivation, dataset of origination, whether the variable is raw data or derived, etc. Once the data specifications are complete, the analysis dataset is created. At this point, before further manipulation takes place, there must be a validation process to insure that the data is correct and reliable. This paper shows an automated method to compare the excel spreadsheet that contains the data specifications and compares it to the actual analysis dataset.

Janet Stuelpner provides programming support in the areas of clinical trials, outcomes research and the financial industry. She also provides both individual and group technical training when needed at the client sites. Janet has several degrees in the sciences. She has been a SAS user for over 20 years on many different platforms. Originally a systems programmer, she has now turned her focus to applications programming and teaching. She has been presenter at users groups at all levels.

9:00 AM-10:00 AM

Power and Sample Size Computations

SE03

John Castelloe, *SAS, Cary NC*

Power determination and sample size computations are an important aspect of study planning and help produce studies with useful results for minimum resources. This statistical seminar reviews basic methodology for power and sample size computations for a number of analyses including proportion tests, t tests, confidence intervals, equivalence tests, survival analyses, correlation, regression, ANOVA, and more complex linear models. The seminar illustrates these methods with numerous examples using new SAS software: the POWER and GLMPOWER procedures and the PSS web interface. The seminar details how to use the software to compute power and sample size, perform sensitivity analyses for other factors such as variability and type I error rate, and produce customized tables, graphs, and narratives. Some basic understanding of power and sample size computations is assumed.

John joined SAS Institute in 1999 as a Research Statistician in the Analytical Solutions group. His areas of expertise are power and sample size analysis and model-based clustering. He has been a SAS user for 13 years, starting while earning a Ph.D. in Statistics at the University of Iowa and a B.A. in Biology at Washington University.

10:00 AM-11:00 AM

Tuning SAS 9 for a Multi-User ETL Environment

SE15

Frank Bartucca, *IBM Corporation, Austin TX*

With both the loading of data into SAS data marts and the analysis of those data, large volumes of data are being processed by SAS programs these days. We have found that the performance of ETL flows greatly depends on the tuning and optimization of server I/O subsystems and SAS options. Without proper tuning a few large ETL jobs can consume all of the file system cache and I/O bandwidth on a multiuser system. In this paper we present the stepwise tuning effort that was used on a midrange server while setting it up to run SAS ETL flows. We present information on the tuning of SAS I/O components on AIX® as well as how to optimally configure and tune the underlying I/O subsystem. We describe the methodology and process to obtain this performance improvement and how it affected the performance of a specific SAS workload.

Frank Bartucca is an IBM pSeries Technical Consultant. He has 23 years of experience working with UNIX operating systems. He currently provides technical support to SAS developers who are developing software products that run on IBM pSeries servers.

11:00 AM-12:00 PM

From Obscurity to Utility: APP Functions as Programming Tools

SE04

Paul Dorfman, Independent Consultant, Jacksonville, FL, USA

Alexander A. Martchenko, STOPS Corp., Riga, Latvia

APP functions is an (unofficial) collective shortcut for the SASR functions ADDR, PEEK, PEEKC, the CALL POKE routine, and their so-called LONG 64-bit counterparts - SAS tools designed to directly read from and write to the physical memory in the Data step and SQL Procedure. APP functions have long been a SAS dark horse. Firstly, the examples of APP usage in SAS documentation boil down to a few tidbits in an obscure technical report, with no hint how the functions could be used in the everyday SAS data management. Secondly, the note about the CALL POKE routine in the SAS documentation is so threatening in tone that many a folk may have decided to avoid the potentially precarious route altogether.

However, nothing can stand on the way of a curious SAS programmer daring to take a closer look. Upon which, it turns out that APP functions are basically simple, safe, and very useful tools! They can be employed to dig into the Data step guts; to make code work like a magic trick; to move data elements en masse; and oftentimes, to make stupendous improvements in the execution efficiency. The potential of APP functions has been explored since circa 1998, with letting the SAS-L community to peek at the findings occasionally. This paper is an attempt to present the results in a sort of systematic way. Welcome to the world of APP programming! You are in for a few pleasant surprises.

Paul Dorfman started using SAS while pursuing his Ph.D. in computational plasma physics. Thereafter, he has used the software in telops, banking, credit card, pharmaceutical, and managed health care industries. He specializes in SAS implementations of high-performance algorithms, such as sorting and searching for data stuff, preferably rapidly. Paul is the first and only SAS programmer to have rendered SAS Language implementations of all classical hashing algorithms; of quick, radix, and topological sorts; of hybrid hash indexing scheme; and of a number of programming methods utilizing the APP functions. Over the years, he has earned a number of honorable nicknames, such as "sashole" from a group of Verizon COBOL critters, "MVS" and "Hall-of-Famer" from SAS-L, and "Hash-Man" from SAS R&D.

Tuesday Morning -- Portsmouth Ballroom IV

8:00 AM-8:30 AM **COPYGRID: Tracking Multi-Developer (and Machine) Programs from Development to Production**

SE05 Larry Altmayer, *U.S. Census Bureau, Washington DC*

ALL

The Standard Economic Processing System (StEPS) is a batch and SAS/AF system developed by the U.S. Census Bureau for processing data from its economic surveys. Several developers requiring edit access to its files of program code maintain it. Much of its program code is contained in a multitude of catalogs. Additionally, development and testing are done on one set of machines, while production programs are kept on another set of machines. This paper describes a system, COPYGRID, developed for tracking program code copying between machines for StEPS.

Larry Altmayer has been with the Bureau of the Census for twenty-seven years, and is an information technology specialist. He has more than fifteen years SAS programming experience. He has processed National Crime Victimization Survey data. Most recently, he joined the Bureau=s StEPS Team, which develops a batch and SAS/AF system for economic surveys. He has a B.A. in Statistics from the Univ. at Buffalo, and Master of Applied Statistics from Ohio State University.

8:30 AM-9:00 AM **Laziness, Impatience, Hubris: Personality Traits of a Great Programmer**

SE06 John Bentley, *Wachovia Bank, Charlotte NC*

Not everyone can be a great computer programmer. Many don't really have the desire, some lack a higher-level technical aptitude, and still others don't have the personality needed to be great. Wait, you say. What's personality got to do with it? Well, most programmers don't have a colleague who really isn't intelligent enough to do the work, but most do know someone who is not exactly temperamentally suited to the job. To help explain the impact of personality on success as a programmer, this paper will present some of traits that can be indicators of professional success or failure in the field. For one, a sense of humor is important because the computer "doth make fools of us all."

Since 1987 John Bentley has used SAS in the healthcare, insurance, and banking industries. He is currently an Assistant Vice President with Wachovia Bank's Corporate Data Management Group and since 1997 has supported the Bank's data warehouse and data marts. John is a SAS Certified Advanced Programmer, has been a Section Chair at both SUGI and SESUG, and was the 2003-2004 President of the Charlotte Area Wachovia In-House SAS Users Group. He has a Masters degree in Political Science with a Concentration in Southeast Asian Politics and is intermittently pursuing a Masters of Information Systems.

9:00 AM-12:00 PM **Seminar on Table Templates for ODS**

SE17 Michelle Ensor, *SAS, Atlanta GA*

Customizing Table Templates is designed for users who want to modify existing table templates or create custom table templates using the TEMPLATE procedure. This seminar shows you how to modify the structure of ODS reports. The TEMPLATE procedure is discussed in detail with a focus on modifying existing table templates for use with SAS procedures and creating custom table templates for use with the DATA step.

ODS to Excel Case Study:

This tutorial, presented at the NESUG in September 2005, shows the step-by-step solution to an ODS to Excel case study. For this case-study, the requirement was to replace a non-SAS process (TPL to PDF conversion process) with ODS. The solution was to use SAS(r)9 and the MSOffice2K tagset to create an HTML file that could be opened in Excel 2000. Other requirements were: produce a print-ready black and white report; set landscape orientation inside Excel; set Excel print area; set Excel print titles; include an Excel header for Page X of Y numbering; produce indented detail lines and flush left group headers; and produce more than 10 footnotes.

ODS HTML and CSS:

This SAS Presents session provided a brief introduction into Cascading Style Sheet (CSS) Technology and browser compliance. Then, all the methods of using CSS with ODS HTML were discussed: how to create a base CSS file with ODS HTML; how to use an existing CSS file with ODS HTML; how to use the HTMLCLASS and HTMLSTYLE attributes to specify or override SAS-generated style attributes; and how to use the HEADTEXT option to pass style information to an HTML page or supply a <LINK> tag for a second style sheet.

Michele Ensor is an instructor with SAS teaching public, on-site, and live web classes and developing courses. She has been employed as a SAS instructor for over seven years and has been using SAS for over twelve years. Her education includes a Bachelor of Science in Mechanical Engineering and a Master of Business Administration.

STATISTICS AND DATA ANALYSIS

Section Chairs: **Bob Bolen**, Southern Company, Atlanta, GA; **Dianne Rhodes**, Westat, Rockville, MD

Monday Morning – Jefferson

8:00 AM-9:00 AM

The Missing Link: Data Analysis with Missing Information

SA03

Venita DePuy, *Duke Clinical Research Institute, Durham NC*

How do you handle missing data? Deletion of those subjects frequently leads to biased outcomes. Mean imputation assumes that non-responders are no different than responders, and can bias variances toward zero. Last observation carried forward methods, while still often used, can cause bias and even induce an apparent treatment effect. Multiple imputation is an improved method to deal with these issues. This paper will focus on the Markov chain – Monte Carlo based method of multiple imputation using SAS®'s PROCs MI and MIANALYZE.

Venita DePuy is a Statistician III at Duke Clinical Research Institute in Durham, NC. She received her B.S. in Statistics from the University of Alaska Fairbanks and Master's of Statistics from North Carolina State University. She is also currently pursuing her PhD in Biomathematics, also at North Carolina State University. Her research interests include multiple imputation, non-parametric statistics, and infectious diseases. In her (hypothetical) free time, she enjoys a variety of handicrafts, playing in the yard, and riding her motorcycle.

9:00 AM-10:00 AM

Data Mining Methods to Examine Thousands of Possibilities in Categorical Data

SA02

Patricia Cerrito, *University of Louisville, Louisville KY*

Categorical data are difficult to analyze when there are hundreds and thousands of possible values. Traditional statistical methods are inadequate. One way to reduce the number of values is to classify them into larger, broader categories using domain knowledge. Automatic reduction can be performed using SAS Text Miner. It is the purpose of this paper to provide several examples of category reduction using Text Miner, and to show how this reduction can aid in the analysis of data. There are several possible ways to examine relationships in the categories when they are related to customer purchases. The first is to use PROC TRANSPOSE and CONCAT to link all purchases into one text string for each individual customer. This can be done including a Time ID as well. After the text strings are created, they can be analyzed using Text Miner. A second method is to decide beforehand on the maximum number of categories that can be handled easily in the data, and to use Text Miner to make the reduction so that other analyses such as association can be performed. Results to date have been very promising when applied to healthcare data.

Patricia Cerrito is a professor of mathematics at the University of Louisville. She has been developing applications of data and text mining to investigate the electronic medical record. She is currently developing a text on data mining for SAS Press. In collaboration with the Department of Computer Engineering and Computer Science, Dr. Cerrito developed a graduate certificate program on data mining that is currently available online. She has received funding from both the National Science Foundation and the National Institutes of Health for her work in data mining.

10:00 AM-11:00 AM

Using Proc GENMOD for loglinear Smoothing

SA06

Tim Moses and Alina A. von Davier, *Educational Testing Service, Princeton NJ*

The goal of smoothing is to replace an observed frequency distribution with a distribution that preserves some features of the observed data without the irregularities that are attributable to sampling. The type of smoothing covered in this paper involves the fitting of loglinear, Poisson-based models to discrete distributions. Loglinear smoothing can preserve a variety of different features in observed data with a relatively small number of parameters.

In this paper we use SAS/STAT® PROC GENMOD (SAS, 2002) to demonstrate the smoothing of univariate (one variable) and bivariate (two variables and one variable for separate subgroups) frequency distributions. For univariate distributions, we will produce smoothed distributions that preserve 1) the mean, 2) the mean and variance, 3) the mean, variance and skewness, and finally 4) the mean, variance, skewness and kurtosis in the observed distribution of one variable, X. For bivariate distributions, we will produce smoothed distributions that preserve three univariate moments in each of the marginal distributions of two variables, X and Y, as well as the correlation between X and Y. Finally, the incorporation of indicator functions is used to model overall and subset-specific features of distributions within the same overall model.

Tim Moses is a measurement statistician in the Research & Development Division at Educational Testing Service in Princeton, NJ. He is the Statistical Coordinator for the Advanced Placement Program®. Tim completed his doctoral degree in Educational Psychology at the University of Washington.

11:00 AM-12:00 PM **A Guided Tour of SAS/QC for Statistical Novices**

SA10 Bob Rodriquez, *SAS, Cary NC*

This presentation answers the question "How can I use SAS/QC in my organization?" for those who are unfamiliar with statistical quality improvement and SAS/QC software. A variety of practical examples—drawn from settings that range from manufacturing to managed health care—will show how you can improve processes, products, and customer satisfaction by understanding variability. The presentation will also explain the basic concepts of statistical process control and provide pointers for getting started with SAS/QC.

Bob Rodriguez joined SAS in 1983 and is currently a director in SAS R&D with responsibility for the development of SAS/STAT and SAS/QC. He received his Ph.D. in statistics in 1977 from the University of North Carolina, and he serves on the editorial boards of The American Statistician and the Journal of Quality Technology.

Monday Afternoon – Jefferson

1:30 PM-2:00 PM **Using ODS to Perform Simulations on Statistics from SAS Procedures**

SA05 Andrew Kramer, *Cerner Corporation, Vienna VA*

The Output Delivery System (ODS) is SAS' mechanism for exporting output from procedures to a variety of format destinations. One of the format destinations is a SAS data set. Thus the statistics of interest from a SAS procedure such as PROC LOGISTIC can be captured. If the SAS procedure is repeated many times then a SAS data set containing the results from that procedure can be iteratively built. With the use of a few macro variables and a single ODS statement simulation studies of output statistics can be developed. An example is given here using PROC LOGISTIC to perform a simulation study of the behavior of the Hosmer-Lemeshow GOF statistic (HL-GOF) when large data sets are used. A logistic regression of 50,000 observations was run 1,000 times with the HL-GOF statistic being saved in a data set. A test of the distribution of the 1,000 HL-GOF statistics confirms that this statistic is distributed as a Chi square variable with 8 degrees of freedom.

Andrew Kramer, PhD is a Senior Biostatistician at Cerner Corporation. He is responsible for managing the statistical analysis of outcome data from patients admitted to intensive care units. Dr. Kramer received his Ph.D. in Human Genetics and completed a postdoctoral fellowship in Epidemiology.

He is the coauthor of numerous scientific papers and has presented at meetings in the US, Canada, and Europe. His SAS experience dates back to 1980.

2:00 PM-2:30 PM **SAS Code to Select the Best Multiple Linear Regression Model for Multivariate Data Using Information Criteria**

SA01 Dennis Beal, *Science Applications International Corporation, Oak Ridge TN*

Multiple linear regression is a standard statistical tool that regresses p independent variables against a single dependent variable. The objective is to find a linear model that best predicts the dependent variable from the independent variables. Information criteria uses the covariance matrix and the number of parameters in a model to calculate a statistic that summarizes the information represented by the model by balancing a trade-off between a lack of fit term and a penalty term. SAS calculates Akaike's Information Criteria (AIC) for every possible 2p models for $p \leq 10$ independent variables. AIC estimates a measure of the difference between a given model and the "true" model. The model with the smallest AIC among all competing models is deemed the best model. This paper provides SAS code that can be used to simultaneously evaluate up to 1024 models to determine the best subset of variables that minimizes the information criteria among all possible subsets. Simulated multivariate data are used to compare the performance of AIC to select the true model with standard statistical techniques such as minimizing RMSE, forward selection, backward elimination, and stepwise regression. This paper is for intermediate SAS users of SAS/STAT who understand multivariate data analysis.

Mr. Beal is an environmental statistician / risk scientist for Science Applications International Corporation (SAIC) in Oak Ridge, Tennessee with 16 years of SAS experience. Mr. Beal holds graduate degrees in applied mathematics from Virginia Tech and statistics from the University of Tennessee and is currently pursuing a Ph.D. in statistics and management science from the University of Tennessee. Mr. Beal applies statistical methods using SAS as a subcontractor for U.S. Department of Energy projects.

2:30 PM-3:30 PM **Statistical Shape Analysis with SAS**

SA04 Katherine Gerber, *University of Virginia, Charlottesville VA*

The field of statistical shape analysis involves methods for studying the geometrical properties of random objects invariant under translation, scaling and rotation. It is often extremely useful to measure, compare and categorize the shape of objects in a wide variety of disciplines, ranging from code recognition to

medicine, archaeology, and geology. Shape techniques are most often applied to the area of biology known as morphometrics, the statistical study of biological shape and shape changes.

Utilities for data collection in pedagogical situations are widely available. With test data in hand, Base SAS®, SAS/STAT®, SAS/IML®, and SAS/GRAPH® are excellent tools for demonstrating the main ideas of shape analysis and performing statistical analysis on the shape data. An intermediate level of SAS programming is assumed; however, mathematically curious beginning level SAS programmers are likely to enjoy the material as well.

As an analyst with ITC-Research Computing at the University of Virginia in Charlottesville, Kathy Gerber supports a diverse group of faculty and student researchers in their work using a range of programming languages and statistical and mathematical software.

She received the Bachelor of Arts degree in Mathematics for the University of Missouri in St. Louis in 1984 and a Master of Science degree from Virginia Commonwealth University in 1996, also in Mathematics. She has taught mathematics, statistics and introductory computer science to high school, university and professional students, and has worked as a research analyst and programmer in the pharmaceutical industry and in equities research.

3:30 PM-4:30 PM

Clustering Analysis of Micro Array Data

SA07

John Schwarz, *University of North Carolina at Chapel Hill, Chapel Hill NC*

Advancements in genetic research have often led to increased amounts of data often without efficient analysis techniques. One such area of genetics that has developed a great deal in the past several years has been micro arrays. Specifically in micro array experimentation is the area of gene expression. The purpose of micro array analysis in gene expression arrays is to identify the genes that are linked in common expression groups.

The data gathered from the micro array experimentation is contained in a 12489 by 42 sized table. There are several different clustering techniques available to analyze the data. Kernel density estimation was used to compare the densities of different genes. Using the densities, gene expression groups can be indicated. Clustering methods include hierarchical and least squares methods. Using the hierarchical models, different distance parameters are determined, i.e. minimal distance, maximal difference, average distance, etc. Least squares method attempts to reduce the time it takes to cluster the data.

The results from each method will be compared and different advantages and disadvantages will be discussed. Comparing each method should indicate which genes are more likely to be in the same expression and which genes will be less likely to be in the same expression.

John Schwarz is currently working on a Phd in Biostatistics at the University of North Carolina, Chapel Hill. He recieved a Masters and Bacheolers in mathematics from the University of Louisville. His interest areas of study include genetics and spatial statistics.

4:30 PM-5:30 PM

SAS/STAT 9: Progressing into the Future

SA09

Bob Rodriquez, *SAS, Cary NC*

Release 9.1 of SAS/STAT software delivers production-level statistical computing facilities for a number of new areas, it enhances many existing procedures, and it introduces experimental software in several additional directions. Power and sample size computations are facilitated by a new interface (PSS) and two new procedures (POWER and GLMPOWER). Robust regression and outlier detection are available in the new ROBUSTREG procedure. Logistic regression and frequency table analysis for survey data are available in the new SURVEYLOGISTIC and SURVEYFREQ procedures. Enhanced procedures include TTEST, LOGISTIC, and MIXED. A number of procedures support automatic creation of statistical graphics displays through the Output Delivery System. New directions include model-checking for proportional hazards models and generalized linear mixed models, an add-on to the 9.1 release which is available for downloading from the web.

Bob Rodriguez joined SAS in 1983 and is currently a director in SAS R&D with responsibility for the development of SAS/STAT and SAS/QC. He received his Ph.D. in statistics in 1977 from the University of North Carolina, and he serves on the editorial boards of The American Statistician and the Journal of Quality Technology.

TUTORIALS

Section Chairs: **Mark Tabladillo**, markTab Consulting, Atlanta, GA; **Andrew Traldi**, Cingular; **Ron Fehd**, Centers for Disease Control & Prevention, Atlanta, GA

Monday Morning – Portsmouth Ballroom VI-VIII

7:30 AM-8:00 AM — Missing Values: Everything You Ever Wanted to Know

TU06 Mal Foley, *University of North Carolina-Chapel Hill, Chapel Hill NC*

B I

Many people know about the 28 different missing values for SAS® numerical data. However, few people know about the many different missing values for character data. This paper reviews all the different types of missing values, their sort order, the difficulties they can cause the SAS programmer and how to avoid those difficulties. It also discusses the MISSING system option, and how to use the various missing values in input, output, comparisons, and in PROC FREQ.

Malachy J. Foley is a Senior SAS Programmer/Analyst in the Department of Biostatistics at the University of North Carolina at Chapel Hill (UNC). Mal has worked with all types of data for more than 25 years. His career in computing includes being an international consultant, a department manager, a university professor, and a CEO. He has consulted to IBM, Dow Chemical, Ford-Rockefeller Foundation, United Nations, Department of Agriculture, Agency for International Development, many universities, and numerous Latin American organizations. He has taught dozens of computing courses at the undergraduate, graduate, and professional levels. He frequently presents papers and gives seminars at local, regional, national, and international SAS users' groups.

8:00 AM-9:00 AM — The Power of PROC FORMAT

TU01 Jonas Bilenas, *JP Morgan Chase, Wilmington DE*

B I

The FORMAT procedure in SAS® is a very powerful and productive tool, yet many beginning programmers rarely make use of it. The FORMAT procedure provides a convenient way to do a table lookup in SAS. User generated Formats can be used to assign descriptive labels to data vales, create new variables and find unexpected values. PROC FORMAT can also be used to generate data extracts and to merge data sets. This paper will provide an introductory look at PROC FORMAT for the beginning user and provide sample code that will illustrate the power of PROC FORMAT in a number of applications.

Jonas Bilenas, Vice President of Product and Price Optimization at JP Morgan Chase, develops SAS applications for the consumer credit card industry, specializing in credit risk management, credit scoring, forecasting, reporting, experimental design, simulation, and pricing optimization. A SAS user since 1986, he has extensive experience using Base SAS software and applying the FORMAT, FREQ, and TABULATE procedures and the DATA step. Jonas is a frequent presenter at local SAS users group meetings and is an active contributor at NESUG. He has just published his first book with SAS publishing titled "The Power of PROC FORMAT" and is under contract for second book on SAS applications in the Credit Industry.

9:00 AM-10:00 AM — Proc SQL Tips and Techniques - How to get the most out of your queries

TU09 Kevin McGowan, *Constella Group, Durham NC*

Proc SQL is a powerful part of SAS when you have to work with large amounts of data. Proc SQL is very useful when working with relational databases but it can be hard to learn as there are some common mistakes that are not obvious to new users. This paper provides examples of ways to use Proc SQL efficiently while avoiding mistakes that can make software run much slower than it needs to be. Topics covered include joins, table aliases, common proc options and simple statistics that can be calculated with Proc SQL without having to use other procs such as freq or means.

When to use Proc SQL vs. other parts of SAS will also be covered.

Kevin McGowan is manager of statistical computing at Constella Group. He has been using SAS since 1981. He has experience with survey design, database design and programming, statistical analysis, and personal computer and network support and administration.

Brian Spruell is an associate research/statistical programmer. He has been using SAS since 2001. He has experience is statistical analysis, database programming and quality assurance programming.

10:00 AM-11:00 AM **Proc Transpose or How to Turn It Around**

TU12 Janet Stuelpner, *Left Hand Computing, Inc., New Canaan CT*

B I

So many times we need to take our data and turn it around. One of the reasons that this is done is that it is more efficient to store your data in a vertical format and processing the data is easier in a horizontal format. That means that we need to change the format of the data before we process or analyze it. There are many ways to accomplish this in a DATA step. Another way to change the data is to use a PROC TRANSPOSE. This paper will show you, step by step, how to change the format of the data. You will be taken from the easiest way of doing without any options to a more complex manner using a whole bunch of options.

Janet Stuelpner provides programming support in the areas of clinical trials, outcomes research and the financial industry. She also provides both individual and group technical training when needed at the client sites. Janet has several degrees in the sciences. She has been a SAS user for over 20 years on many different platforms. Originally a systems programmer, she has now turned her focus to applications programming and teaching. She has been presenter at users groups at all levels.

11:00 AM-12:00 PM **ODS to Excel Case Study**

TU14 Michele Ensor, *SAS, Atlanta GA*

A

This tutorial, presented at the NESUG in September 2005, shows the step-by-step solution to an ODS to Excel case study. For this case-study, the requirement was to replace a non-SAS process (TPL to PDF conversion process) with ODS. The solution was to use SAS®9 and the MSOffice2K tagset to create an HTML file that could be opened in Excel 2000. Other requirements were: produce a print-ready black and white report; set landscape orientation inside Excel; set Excel print area; set Excel print titles; include an Excel header for Page X of Y numbering; produce indented detail lines and flush left group headers; and produce more than 10 footnotes.

Michele Ensor is an instructor with SAS teaching public, on-site, and live web classes and developing courses. She has been employed as a SAS instructor for over seven years and has been using SAS for over twelve years. Her education includes a Bachelor of Science in Mechanical Engineering and a Master of Business Administration.

Monday Afternoon – Portsmouth Ballroom VI-VIII

1:30 PM-2:30 PM **Looking For a Date? A Tutorial on Using SAS Dates and Times**

TU04 Art Carpenter, *CA Occidental Consultants, Oceanside CA*

B I

What are SAS date and time values? How are they used and why do we care? What are some of the more important of the many functions, formats, and tools that have been developed that work with these crucial elements of the SAS System?

This tutorial will answer these questions and many more. Starting with date and time constants and their representation in SAS and then expanding to functions and formats, the basics of the use of dates and times will be integrated with their use as part of both data tables and data displays. The discussion will include functions and formats that are new to Version 8 and SAS 9.

Also covered are picture formats and date directives, date scaling in SAS/GRAPH, shift operators in the INTNX and INTCK functions, and the use of the %SYSFUNC macro function.

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

2:30 PM-3:30 PM **Building Web Applications with SAS(r) AppDev StudioTM 3.0**

TU10 Frederick Pratter, *Eastern Oregon University, OR*

The SAS/IntrNet® Software product is now nearly 10 years old and uses the obsolete CGI interface. SAS has provided several newer products, included in AppDev Studio 3. Using SAS Integration Technologies or Java custom tag libraries, it is possible to create dynamic Web pages that provide access to SAS datasets.

AppDev Studio™ 3.0 includes a graphical user interface for developing and deploying Web applications called webAF. This workshop covers building a simple interactive JavaServer Page using webAF. The only prerequisites are knowledge of HTML and an interest in Web programming in SAS. Java programming experience is helpful but not absolutely essential.

Frederick Pratter teaches in the Computer Science/Multimedia Program at Eastern Oregon University in La Grande, OR. He is the author of Introduction to Web Development Using SAS AppDev Studio™ from SAS Press; the 2nd edition, covering new features in SAS® Version 9.1, is currently in process. Prior to giving up the East Coast urban lifestyle, he was Senior Scientist and the Information Technology Director for the Business Research Consulting Group

at Abt Associates in Cambridge, Massachusetts. He has been a SAS user since 1975, and has also presented a number of papers and seminars at SUGI, PharmaSUG, WUSS, NESUG, and PNWSUG as well as at local user groups in Boston and New York City. This is his first SESUG paper.

3:30 PM-4:30 PM **DATALINES and Sequential Files and CSV and HTML and More -- Using INFILE and INPUT to Introduce External Data into the SAS® System**

TU07 Andrew Kuligowski, *Nielsen Media Research, Dunedin FL*

External data can be stored in many different locations and formats -and more seem to appear on a daily basis! We need to bring that data into the SAS System in order to take advantage of its numerous capabilitiesfor storage, analysis, presentation, and reporting. This presentation includes an introduction to the INPUT and INFILE statements, which combine to provide a simple, yet powerful, method to pass data into the SAS System. Matters to be addressed are reading fixed and variable length files, in-stream data, .CSV files,HTML files, and more.

Andrew T. Kuligowski has been a SAS user for over 20 years. He has augmented his professional coding experiences in the petrochemical and media research industries by speaking at SESUG, SUGI, and many other SAS conferences and user group meetings. Andrew serves on the Executive Council of the SouthEast SAS Users Group, and was conference co-chair for SESUG'97 in Jacksonville, Florida and Tennessee SAS Users Day in Knoxville, Tennessee. In his spare time, Andrew can also be found volunteering at the Florida Aquarium in Tampa.

4:30 PM-5:30 PM **How Do I Look it Up If I Cannot Spell It: An Introduction to SAS® Dictionary Tables**

TU02 Ilene Brill, *University of Alabama at Birmingham, Birmingham AL*

SAS maintains a wealth of information about the active SAS session, including information on libraries, tables, files and system options; this information is contained in the Dictionary Tables. Understanding and using these tables will help you build interactive and dynamic applications. Unfortunately, Dictionary Tables are often considered an 'Advanced' topic to SAS programmers. This paper will help novice and intermediate SAS programmers get started with their mastery of the Dictionary tables.

Ever needed a list of the tables (datasets) in a library? How about the columns (variables) in a table? Need to make sure you reset any titles after you run a report? Sure, you can look them up in the explorer window. Or you can run a Proc Contents. Or you can get them through the Dictionary Tables. So, what are Dictionary Tables and where do I access them?

Ilene Brill, a Systems Analyst for the Department of Epidemiology, University of Alabama at Birmingham (UAB), has used SAS for data management and analysis of STD epidemiology prospective follow-up studies, occupational epidemiology retrospective follow-up and case-control studies. Prior work includes the Department of Epidemiology and Biostatistics, University of Tromsø, Norway; Channing Laboratory, Boston, MA; Dept. of Epidemiology, Massachusetts Eye and Ear Infirmary; Dept.of Health Care Org. and Policy, UAB. M.P.H. Biometry, UAB; B.A. Biology, University of Pennsylvania.

Peter Eberhardt has been using SAS as in independent consultant since the early 1980's. Peter works mainly in ad-hoc data analysis and modeling. Peter is SAS Certified Professional V8, SAS Certified Professional V6, and SAS Certified Professional - Data Management V6. In addition his company, Fernwood Consulting Group Inc. is a SAS Alliance Partner. In addition, Peter is a regular speaker at SUGI and SESUG.

Tuesday Morning – Portsmouth Ballroom VI-VIII

8:00 AM-9:00 AM **An Introduction to the Simplicity and Power of SAS/Graph®**

TU03 Dan Bruns, *TVA, Chattanooga TN*

ALL

In today's hectic and ever increasing demand for more information faster, the graphics tools for SAS are a great way to get lots of information conveyed quickly. I have seen tremendous enhancements and improvements in the product since it was first introduced (and first learned it) in the late 1970s. But the basic, underlying, data-driven principals (like for most SAS procedures) are still there and easy to learn. In this tutorial we will explore how a little understanding and knowledge of the basic concepts and options of SAS/Graph will get you on your way to producing all kinds of impressive and informative graphs that can be printed, imbedded in other docs, or made available to web sites.

Dan Bruns is a Senior Systems Programmer for the Tennessee Valley Authority (TVA) in Chattanooga, TN, and responsible for the installation, customization, and support of several products on the IBM OS/390 mainframes since 1986. He is the SAS Software Site Rep for all platforms at TVA (OS/390, Windows, Sun, and HP), and has been responsible for the installation and support of the SAS System since 1981. He has been a SAS user since 1972. He has presented several papers/workshops at SAS Users Group International (SUGI), SouthEast SAS Users Group (SESUG), and other non-SAS conferences since 1990. His main areas of interest are Base SAS, SAS Macros, and SAS reporting procedures, SAS/GRAPH, SAS/ACCESS, and SAS/SHARE. He has been a member of the SESUG Executive Council (EC) since 1994 and is currently the SESUG EC President. He was proud to cochair the SESUG 97 conference with Andrew T. Kuligowski in Jacksonville, FL.

9:00 AM-10:00 AM

A SASautos Companion: Reusing Macros

TU05

Ron Fehd, *Centers for Disease Control and Prevention, Atlanta GA*

I A

Reusable SAS programs come in two forms: macros or %includes. This paper reviews the standard SAS environment and examines the options used to customize a session or batch program for reuse of macros stored in the project directory. Expected audience is intermediate to advanced programmers and macro users.

Ronald Fehd received his B.S. in Computer Science from the University of Hawaii in 1986. In SAS-L, the SAS user group on-line community, he is known as the macro maven; he is author of over 2000 messages to SAS-L since 1997 and was voted Most Valuable SAS-L contributor in 2001 and 2003. He gets paid by the Centers for Disease Control to read SAS-L, work as a programmer/analyst. He has been checking other people's assumptions before writing data management programs in SAS for almost two decades. He is the author of umpteen SUG papers on macros or programming theory.

10:00 AM-11:00 AM

Speaking Klingon: A Translator's Guide to PROC TABULATE

TU11

Dianne Rhodes, *Westat, Rockville MD*

A frustrated colleague once complained to me that he couldn't understand the SAS® Reference Manual for PROC TABULATE. "It's written in Klingon!" he exclaimed. I have found that the basics of Tabulate are easy to use if it is recognized as being a different set of constructs than used by other SAS Procedures. The Bureau of Labor Statistics Table Producing Language/Print Control Language (TPL/PCL ©) has been used to produce vital statistics tables for many years. This paper introduces the TPL concepts that are the foundation of PROC TABULATE. These fundamentals are used to demonstrate how to build more complex tables, and how to exploit totals, percentages, and percentage bases (the percent denominator). New features in version 8 make it much easier to produce the statistics that you want. The paper demonstrates how to use formats and the

PRELOADFMT option to produce classification levels in the order you want to see them. You'll find out how to get the rows in the order that you want, and how to include rows for missing categories of data.

Dianne Rhodes first programmed in SAS on an IBM 360 mainframe using a DECWriter and a TI Silent 700. She worked for a statistician on both sides of Equal Employment Opportunity cases. Later she worked in producing health care statistics for HCFA, NIH, the Urban Institute, and the Department of Labor?s Office of Workers Compensation Program. She joined the senior staff at WESTAT in 1998, where she is working on the Medical Expenditures Panel Survey and the Medical Provider Component using SAS and Oracle. She also spends time clicker training her two Abyssinian cats.

11:00 AM-12:00 PM

Macro Bugs - How to Create, Avoid and Destroy Them

TU13

Ian Whitlock, *Independent Consultant, Kennett Square PA*

The central theme of this paper is the macro debugging process. However, a great many bugs are simply due to not understanding how macro processing works. Therefore, some time will be spent on understanding this process. One has to be able to locate bugs before they can be fixed, so time will also be spent on design features as they impinge on the search for bugs. Then, of course, some time will be spent on the traditionally supplied tools for debugging.

The reader may be relatively new to writing macros, but he/she should bring some SAS(r) and some macro experience to the lecture, for it is hard to pick up all the background even when all terms are explained.

The material discussed was developed under Windows, and all logs come from the execution of SAS version 9.2. Unless noted everything is probably appropriate to all operating systems and available versions of SAS.

Dr. Whitlock has used SAS for over 24 years in survey research to produce batch production programs developed in an interactive environment. He has been very active in SUGI, regional, and local SAS user groups in addition to his participation on SAS-L.

WEEKEND WORKSHOPS

Section Chairs:	**Joy Smith** **North Carolina State University** **Raleigh, NC**	**Marje Fecht** **Prowerk Consulting** **Cape Coral, FL**	**Frank Dilorio** **CodeCrafters, Inc.** **Chapel Hill, NC**

Adding pre-conference workshops **enhances your SESUG conference experience** by giving you the opportunity to receive in-depth instruction from well-known SAS experts, on a wide variety of topics, at reasonable rates.

In addition, the discounted lodging rate at the conference hotel is available if you need to arrive early to attend the workshops. The SESUG conference leadership has selected these instructors based on their subject matter expertise, presentation skills, and enthusiasm for teaching others about SAS. The table below shows the wide array of learning opportunities available by attending these sessions. Descriptions of the workshops are on the following pages, and instructor profiles are on page 53. Tuition, which includes a copy of the workshop materials and morning/afternoon refreshments, is only **$99** for the half-day workshops.

Attendees at the workshops who do **not** also register for SESUG 05 are charged an additional $25 per person administrative fee.

SESUG and the instructors will hold all workshops with pre-registered attendees unless there is an unexpected event preventing the instructor from attending the conference. If a workshop is cancelled, the sole liability of SESUG and/or the instructors is a refund of fees paid for the cancelled workshop, and they are **NOT** liable for special or consequential damages arising from the cancellation. If a training workshop is cancelled, we will notify you **as soon as possible** and you will be invited to transfer your registration to another workshop. Or, you may elect to receive a refund for the amount paid for that workshop.

Workshop Times: The workshops will start promptly at the hour listed. Refreshments will be available at 7:30 am for the morning workshops. Workshops will also have a mid-morning and mid-afternoon refreshment break.

Sunday, October 23rd, 2005		
8:00 am - 12:00 noon	**Pat Cerrito**	**Choosing the Right Model: From PROC ANOVA to PROC GLIMMIX**
8:00 am - 12:00 noon	**Frederick Pratter**	**Introduction to Visual Basic for Applications**
8:00 am - 12:00 noon	**Mal Foley**	**Combining Datasets-Tips and Traps for Merge, Set and Join**
1:00 pm - 5:00 pm	**Jonas Bilenas**	**Making Sense of PROC TABULATE**
1:00 pm - 5:00 pm	**Frederick Pratter**	**XML for SAS Programmers**
1:00 pm - 5:00 pm	**Sandy McNeill**	**V9 for V8 People: Exploring the SAS9 Enhancements**

Choosing the Right Model: From PROC ANOVA to PROC GLIMMIX

Instructor: Patricia B. Cerrito **When:** Sunday, October 23rd, 8:00 pm-12:00 pm

Abstract: The purpose of this workshop is to investigate several SAS procedures that are used in linear predictive models. The primary focus will be on the correct choice of model given the designated outcome variable, and combination of input variables. Procedures to be discussed include GLM, LOGISTIC, GENMOD, MIXED, and GLIMMIX. PROC GLIMMIX is a relatively new SAS procedure, although it has been available as a macro for some time.

This workshop is oriented toward the practical use of these SAS procedures. It will emphasize the model choice, and the interpretation of output from the models. Several examples using the models, and output results will be presented.

There are three main types of variables used in linear models: nominal, ordinal, and interval. While all of the models discussed can include all three types of input variables, the model choice is different if the outcome variable is interval or nominal.

Another consideration for model choice is whether the input variables are fixed effects or random effects. The presence of random effects will require the use of mixed models, either PROC MIXED or PROC GLIMMIX depending upon the type of outcome variable.

Repeated measures where data are collected at specific time points are a special type of random effect. In the past, repeated measures have been used in PROC GLM. However, superior results are given with the PROC MIXED and PROC GLIMMIX models.

The workshop will examine the different types of outcome variables, random effects, and repeated measures that are used to choose the correct model. If time permits, variable interactions and post-hoc tests will be discussed briefly as well.

Recommended Background: Some basic knowledge of PROC GLM
Intended audience: Those who have a basic knowledge of PROC GLM but who have no real experience with GENMOD, MIXED, and GLIMMIX procedures.
Course material: A copy of the slides with additional in-depth examples.

Introduction to Visual Basic for Applications

Instructor: Frederick Pratter **When:** Sunday, October 23rd, 8:00 pm-12:00 pm

Abstract: Many SAS programmers find they also need to access SAS datasets and output with the common Microsoft tools – Word, Excel and Access. This workshop will show you how to automate repetitive operations using VBA, the built-in macro language in MS Office. The examples come from Office 2003 but the principles apply to all versions back to Office 95.

The workshop will start with an introduction to VBA and move into the built-in functionality including how to record a macro as well as how to create your own custom functionality. You'll learn how VBA uses some of the same words as SAS such as procedures, functions, variables, operators and objects and how these terms are used differently in the VBA world. Finally, the workshop will also cover how SAS and Microsoft applications can communicate with each other using methods such as ODBC, Windows shell, DDE, OLE, and ActiveX.

Recommended Background: Familiarity with Microsoft Office for Windows: Word, Excel and Access
Intended audience: SAS programmers who wish to learn more about automating MS Office applications
Course materials: A bound copy of the slides with in-depth examples.

Combining Datasets-Tips and Traps for Merge, Set and Join

Instructor: Malachy J. Foley **When:** Sunday, October 23rd, 8:00 am-12:00 noon

Abstract: The most overlooked source of data error is the area of combining SAS data sets. Many of them occur with no SAS message or warning! For example, are the calculations in the MERGE DATA Step you wrote acually working? Or when you wrote your PROC SQL with a JOIN, did you really need a LEFT JOIN, RIGHT JOIN, or FULL JOIN? Or should you have really used a data step MERGE or SET instead of SQL? Did the key variables you used in your MERGE, SET or JOIN have hidden problems? This workshop discusses more than 30 often misunderstood issues in combining data sets that often result in erroneous data with no messages in the LOG. You'll learn how to write the code to get the desired data as well as explore alternative methods.

In addition to examining errors, the workshop covers a wide range of topics needed to accurately obtain data for analysis. These topics include interleaving, subsetting, concatenation, check digits, BY-variable processing, the IN=data set option, DATA Step logic, the FIRST.variable, program data vectors(PDV), Cartesian products, one-to-one merges, match merges, and fuzzy merges.

The workshop starts with the basics and continues to build to complex and tricky examples of data set manipulation. During the workshop, questions are encouraged. The only prerequisite for the course is a working knowledge of the SAS DATA Step. Yet, this workshop will give intermediate and advanced programmers a great review and some surprises. Come see what mysteries lurk in manipulating SAS files! This workshop is enhanced from a previous workshop to cover SQL as well as the data step.

Recommended Background: Working knowledge of the SAS DATA Step
Intended audience: Anyone who manipulates SAS data sets
Course materials: A bound copy of the slides and additional reference material.

Making Sense of PROC TABULATE

Instructor: Jonas V. Bilenas **When:** Sunday, October 23rd, 1:00 pm-5:00 pm

Abstract: The TABULATE procedure in SAS® provides a flexible platform to generate tabular reports. It has long been a popular procedure used in banking and many other industries. However, many beginning SAS programmers have a difficult time understanding the syntax of PROC TABULATE and tend to avoid using the procedure. This workshop will explain the syntax of PROC TABULATE and, with examples, show how to grasp the power of PROC TABULATE. Key steps to aid the learning process will be covered. In addition to the basics, the workshop will cover how to clean up the look of reports using labels, simple formats and multi-label formats. You'll also learn ODS functionality as it applies to TABULATE output giving you the flexibility to send your TABULATE results to spreadsheets, HTML files and RTF files. This workshop is based on SAS 9.1.3.

Recommended Background: Basic understanding of the Data step
Intended audience: Beginning to intermediate Base SAS users
Course materials: Power of PROC FORMAT book and copies of slides

XML for SAS Users

Instructor: Frederick Pratter **When:** Sunday, October 23rd, 1:00 pm-5:00 pm

Abstract: SAS programmers often find they need to obtain data from other sources or pass data to other sources. XML (eXtended Markup Language) has become an industry standard. For example, the FDA XML Data Format Requirements for reporting clinical trials data. This workshop is an expanded version of the famous SUGI paper "Beyond HTML: Using the SAS System® Version 8.2 with HTML and XML". In particular, the following topics will be covered:

- What is XML?
- What is the difference between XML and HTML?
- What does XML do?
- What are the SAS tools available for XML processing?
- What do they do, how do you use them and how do you decide what to use?

Recommended Background: Basic understanding of SAS data and proc steps and an interest in learning XML
Intended audience: SAS users with an interest in XML. In particular, those who desire the necessary background for an understanding of the FDA XML Data Format Requirements Specification
Course materials: A bound copy of the slides with in-depth examples.

V9 for V8 People: Exploring the SAS9 Enhancements

Instructor: Sandy McNeil **When:** Sunday, October 23rd, 1:00 pm-5:00 pm

Abstract: Are you a current 8.2 user or new SAS 9 user wondering what has changed from 8.2 to SAS 9? Are you an old fogey like me, comfortable with using the Program Editor or the Enhanced Editor and wondering what Enterprise Guide has to offer but been afraid to ask? While there are too many new enhancements to go over in one small seminar, come join Sandy McNeill as she takes you on a short tour of Enterprise Guide and then uses Enterprise Guide to introduce the following SAS9 features:

- Tour and use of Enterprise Guide
- Perl Regular Expressions
- Hash Objects
- New Data Step Functions
- ODS Tagsets
- ODS Tagsets and Excel
- Microsoft Add-ins
- What is a thread enabled procedure and how do I use it?
- SPD Engine

You'll also be able to share your feedback with Sandy so she can share it with her fellow developers. This is a variation of a workshop presented at SUGI. Sandy has added some additional material.

Recommended Background: Working knowledge of SAS V8
Intended audience: Anyone who wants to know more about SAS 9
Course materials: A CD with examples

WEEKEND WORKSHOP INSTRUCTOR PROFILES

Here are the biographies for instructors providing pre-conference workshops at SESUG 05. We have chosen them to present workshops in conjunction with our annual conference because of their reputation within the SAS user community for being subject-matter experts who have excellent presentation skills and for their enthusiasm to share their knowledge with others. Listings of the workshops they will present are on pages 49-52.

Jonas V. Bilenas

Jonas V. Bilenas, Vice President of Product and Price Optimization at JP Morgan Chase, develops SAS applications for the consumer credit card industry, specializing in credit risk management, credit scoring, forecasting, pricing optimization, reporting, experimental design, and simulation. A SAS user since 1986,he has extensive experience using Base SAS software and applying the FORMAT, FREQ, and TABULATE procedures and the DATA step. Jonas holds an M.B.A.in quantitative analysis and is a frequent presenter at local SAS users group meetings. He is also an active contributor and speaker at the NorthEast SAS Users Group (NESUG)conference. He was an invited speaker on PROC TABULATE at SUGI 30 in Philadelphia.

Patricia B. Cerrito

Patricia B. Cerrito is a Professor of Mathematics at the University of Louisville. She has developed new applications of statistical and data mining models in the field of health care. She has used SAS for over 25 years. Most recently, her work has focused on the examination of the variability in physician-decision making and how physician choices relate to patient outcomes. In addition, she has worked to develop applications of Enterprise Miner in investigating healthcare databases. Dr. Cerrito is currently under contract with the SAS Institute, Inc. to complete a book on Enterprise Miner.

Malachy J. Foley

Malachy J. Foley is a Senior SAS Programmer/Analyst in the Department of Biostatistics at the University of North Carolina at Chapel Hill (UNC). Mal has programmed business and research applications for more than 35 years. His career in computing includes being an international consultant, a department manager, a university professor, and a CEO. He teaches computing courses at the undergraduate, graduate, and professional levels. He frequently presents papers and gives seminars at local, regional, national, and international SAS users' groups.

Sandy McNeill

Sandy McNeill has been working at SAS since 1995 when she was hired to take over development support for Proc Report. In 2000, Sandy became the manager of the Output Delivery and Reporting department which is primarily responsible for ODS and the reporting procedures Report, Tabulate, and Print. Since April, 2004 Sandy has moved up to take on more daily operations responsibility for the SAS Platform, supporting Paul Kent and giving her more of an overall SAS viewpoint. She still very much believes in the power of BASE SAS and takes every opportunity she can to be a spokesperson for the fact that "Base SAS Rocks!".

Frederick Pratter

Frederick Pratter is an Assistant Professor in the Computer Science/Multimedia Studies Program at Eastern Oregon University. He is currently working on the second edition of Web Development with SAS© By Example from SAS Press. Prior to giving up the East Coast urban lifestyle, Dr. Pratter was a Senior Scientist and the Information Technology Director for the Business Research Consulting Group at Abt Associates in Cambridge, Massachusetts. He's been a SAS user since 1975 and has presented papers and workshops at SUGI, WUSS, NESUG, PharmaSUG and PNWSUG as well as local user groups in Boston and New York City.

2005 CONFERENCE PLANNING TEAMS

Operations Team

Dan Bruns, *Tennessee Valley Authority*
Imelda Go, *South Carolina Dept of Education*
Deborah Skinner, *Independent Consultant*

Academic Team

Neil Howard, *Independent Consultant*
Debbie Buck, *D. B. & P. Associates*
Marje Fecht, *Prowerk Consulting*
Deb Cassidy, *PPD, Inc.*

Conference Committee

Operations Chairs

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Fernwood Consulting Group Inc.

Catering Coordinators
Deborah Skinner
Independent Consultant
Dave Riba
Jade Tech, Inc.

Off-site Registrar
Maribeth Johnson
Medical College of Georgia

On-site Registrar
Deborah Skinner
Independent Consultant

Proceedings Editor
Joseph Kelley
University of Georgia

Publications Coordinators
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Tennessee Valley Authority
Debbie Buck
D. B. & P. Associates

Publicity Coordinator
George Matthews
University of Georgia

Sponsorship Program Coordinators
David Maddox
BellSouth Telecommunications, Inc.
George Matthews
University of Georgia
Imelda Go
South Carolina Dept of Education

Volunteers Coordinator
Jennifer Waller
Medical College of Georgia

Webmaster
Mark Tabladillo
markTab Consulting

Classes, Workshops, And More

Hands On Workshops
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D. B. & P. Associates
Joy Smith
North Carolina State University

Pre-Conference Weekend Workshops
Joy Smith
North Carolina State University
Marje Fecht
Prowerk Consulting
Frank DiIorio
CodeCrafters, Inc.

SAS Regional User Group Liaison
Bahram Pelattini
SAS, Inc.

Graphic Design
Kimberly Riddell
Jessica Wright

Paper Presentation Chairs

Application Development
Tom Fuchs
LG&E Energy
Maribeth Johnson
Medical College of Georgia

Coders' Corner
Larry Altmayer
U.S. Bureau of the Census
Andrew T. Kuligowski
Nielsen Media Research

Data Presentation
Keith Brown
University of North Carolina
Marje Fecht
Prowerk Consulting

ETL
John Bentley
Wachovia Bank
Joseph Kelley
University of Georgia

Intro to SAS
Gary Schlegelmilch
US Bureau of the Census
Phil d'Almada
Rho, Inc.

Posters & Video Posters
Steve James
Centers for Disease Control & Prevention
Dana Rafiee
Destiny Corporation

Serendipity
Erik Larsen
Independent Consultant
Jennifer Waller
Medical College of Georgia

Statistics & Data Analysis
Bob Bolen
Southern Company
Dianne Rhodes
Westat

Tutorials
Mark Tabladillo
markTab Consulting
Andrew Traldi
Cingular
Ron Fehd
Centers for Disease Control & Prevention

SESUG POLICIES & PROCEDURES

The annual SouthEast SAS Users Group (SESUG), Inc., Conference is primarily an educational gathering for the benefit of its attendees. SESUG recognizes that the majority of attendees are present as representatives of their employers for this purpose. Accordingly, SESUG does not condone, endorse, or encourage activities that may conflict with the educational nature of the conference. All attendees and vendors are expected to abide by the Policies and Procedures set forth in this document.

Paper Content: Users are urged to present papers describing real-world applications using SAS Institute software. SESUG also accepts a limited number of theoretical and general overview papers. Acceptance of all presentations is at the discretion of the Conference Chairs.

Oral presentations and written papers describing products or services of a commercial nature may only be presented at the conference if:
They describe how the product relates to the use of SAS Institute software
They do NOT include price lists, support commitments, or other material of a promotional or sales nature.

Right of Withdrawal: The SESUG Executive Council and the Conference Chairs reserve the right to determine if any activity is in violation of these Guidelines. They may, at their option, direct the withdrawal of a presentation or demonstration or the dismissal of a SESUG attendee from the conference.

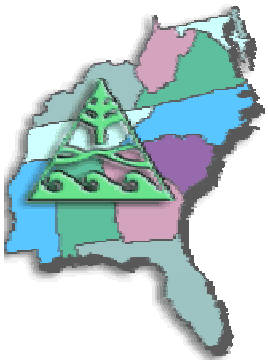
Marketing and Recruiting: Any person or entity wishing to market their products or services or whose presence is primarily to recruit attendees at the annual SESUG conference must register as a vendor. Registered vendors are expected to conduct themselves with professionalism. The SESUG Executive Council (EC) reserves the right to refuse any or all vendor registrations.

In addition to, or in lieu of, a physical presence at the annual SESUG conference, vendors may choose to have a virtual presence through means of advertising. Advertising opportunities are delineated below and do not require separate registration of the vendor.
The Conference *Program* may include printed vendor advertisements. All advertising is accepted at the discretion of the SESUG Conference Chairs. A fee may be assessed.
Sales literature and promotional items may only be distributed to conference attendees in an approved manner. Items for distribution must be submitted to a designee of the Conference Chairs and are subject to approval of form and content. A fee may be assessed.
Vendors who wish to sponsor the goals and aims of SESUG may be recognized publicly at the discretion of the Conference Chairs.
Distribution of sales literature and other promotional items will be limited to the above procedures. The Conference Chairs will issue specific requirements (e.g., content, deadlines, and costs) for these vendor promotional opportunities.

SESUG does not condone, endorse, or encourage unauthorized hospitality suites or other similar unauthorized activities. In the event of any questions of interpretation, the decision of the Conference Chairs will apply.

NON-REGISTERED VENDORS MAY NOT ENGAGE IN ANY DIRECT MARKETING OR SALES EFFORT AT THE CONFERENCE.

SESUG 2006



SouthEast SAS Users Group
SESUG '06 Conference
October 8-10, 2006
Atlanta, GA

We welcome your participation – Volunteer as a . . .
Speaker - Section Chair - Session Coordinator
Registration/information desk - Operations support

Sheraton Atlanta

Conference Co-Chairs:

Marje Fecht
AcademicChair2006@sesug.org

Deborah Skinner
OperationChair2006@sesug.org

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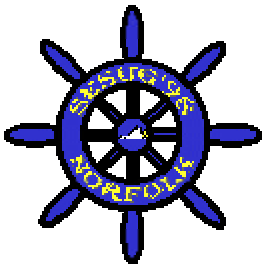

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Randy Finch
Tennessee Valley Authority

F. Joseph Kelley
University of Georgia

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George Matthews — *University of Georgia*
Greg Nelson — *ThotWave Technologies, LLC*

Adams Mark
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Maribeth Johnson
Medical College of Georgia

Intercontinental
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D. B. & P. Assoc.

S. David Riba
JADE Tech, Inc.

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David Maddox
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TradeWinds Island Grand Resort
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Steve Noga — *Rho, Inc.*
Gary Schlegelmilch — *US Bureau of the Census*

Loews Vanderbilt
Nashville, TN
Imelda "Mel" Go — *South Carolina Dept of Education*
Neil Howard — *i3 STATPROBE*

Renaissance Portsmouth Hotel
& Waterfront Conference Center
Portsmouth, VA

Facilities Map