Applications
Sara Hickson, Harvard Medical School
James Shields, Wright Express

The Applications section is focused on concrete, real-world, problem solving using SAS®. Presentations will involve techniques to integrate programs, macros, or utilities – to run faster, use fewer resources, or be easier to maintain. This section provides an opportunity to learn not only about what was developed, but also how it was developed, and how it all comes together in a new application. There will be descriptions of solutions of all shapes and sizes, from one-off challenges solved for a single desktop to multi-layered applications that span the enterprise or the Internet. Presentations may focus on one SAS feature, or an entire SAS product that has been put to work as the answer to a real-life challenge. Through these presentations, the Applications section will emphasize the use of SAS to accomplish practical tasks.

An Introduction to Creating Multi-Sheet Excel Workbooks the Easy Way with SAS®
Vince DelGobbo, SAS

Personalizing Mailings and Driving Sales Using SAS/GRAPH®
James Shields

Creating Easily-Reusable and Extensible Processes: Code that Thinks for Itself
Faisal Dosani, Royal Bank of Canada
Lisa Eckler, Lisa Eckler Consulting
Marje Fecht, Prowerk Consulting Ltd.

SAS Style Templates: Always in Fashion
Cynthia L. Zender, SAS

Let the System Do the Work! Automate Your SAS Code Execution on UNIX and Windows Platforms
Niraj J. Pandya, Element Technologies Inc.

Matching Data Using Sounds-Like Operators and SAS Compare Functions
Amanda Roesch, Educational Testing Service

No More Split Ends. Outputting Multiple CSV Files and Keeping Related Records Together
Gayle K. Springer, Johns Hopkins University Bloomberg School of Public Health
The Coders’ Corner Section is where we share knowledge and get new ideas in a shorter and less formal venue than in other NESUG sections. Presentations are 10 minutes in length and the topics cover a wide range of tricks and tips for everyone from the beginner to the advanced programmer. Topics this year are organized around several themes and include a number of aspects of base SAS® (SAS macro language, PROC SQL, DATA Step merges, PROC TRANSPOSE, programming efficiency, debugging, program maintenance and documentation, SAS-Excel interaction), creating publication-ready output including use of ODS and SAS Mapping, and tips specific to Pharmaceutical Clinical Trials.

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**A Validation Macro to Check Compliance of CDISC SDTM Data**  
Hany Aboutaleb, Biogen Idec

---

**Survival Analysis: K-M Plot with Confidence Band**  
Santosh Bari, eClinical Solution  
Himanshu Patel, eClinical Solution

---

**Viva la Resolucion! 5 Things You Should Know About Macro Resolution**  
Dan Bretheim, Towers Watson

---

**Hands Free: Automating Variable Name Re-Naming Prior to Export**  
John J. Cohen, Advanced Data Concepts LLC

---

**Generation Why: How Generation Data Sets Can Help**  
Lisa Eckler, Lisa Eckler Consulting

---

**A Utility to Validate the LoT**  
Mukesh Garg, eClinical Solutions  
David Etris, Ockham  
Vikash Jain, eClinical Solutions

---

**Tales from the Help Desk 5: Yet More Solutions for Common SAS® Mistakes**  
Bruce Gilsen, Federal Reserve Board

---

**PROC PRESENT: Write Your Presentation in SAS® in as Few as Five Easy Steps**  
Louise S. Hadden, Abt Associates Inc.
Put a Little Zip in Your SAS® Program
Louise S. Hadden, Abt Associates Inc.

10 Steps to Easier SAS Code Maintenance
Jessica R. Hampton, CIGNA

Easy DOS It.
Asaf Hanish, University of Pennsylvania

Get Started Writing SAS® Macros
Luisa M. Hartman, Merck Sharp & Dohme Corp.
Jane Liao, Merck Sharp & Dohme Corp.

A Practical and Efficient Approach in Generating AE (Adverse Events) Reports Within a Clinical Study Environment
Jiannan Hu, Vertex

A Missing Guide for a Comprehensive Kaplan-Meier Plot
Jiannan Hu, Vertex

Using PRX to Search and Replace Patterns in SAS® Programming
Wenyu Hu, Merck Sharp & Dohme Corp.
Liping Zhang, Merck Sharp & Dohme Corp.

Combining the Results from Multiple SAS PROCs into a Publication Quality Table
Robert Kabacoff, Management Research Group

Reading Multiple Sheets from Excel Using SAS
Sandeep Kottam, Ockham
Sree Lakshmi K Tripuraneni, PURDUE PHARMA

What’s on Your Menu?
Sanjaya Kumar, New York State Department of Health
<table>
<thead>
<tr>
<th>Lesson Number</th>
<th>Title</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>CC19</td>
<td><strong>An Animated Guide: A Program to Read Information in SAS Headers and Produce Reports for Programming Managers</strong></td>
<td>Russ M. Lavery, <em>Independent Contractor</em></td>
</tr>
<tr>
<td>CC20</td>
<td><strong>A SAS® Macro for Transposing Large Datasets</strong></td>
<td>Chen Li, ETS</td>
</tr>
<tr>
<td>CC21</td>
<td><strong>Creating PDF Reports Using Output Delivery System</strong></td>
<td>Shubha Manjunath, Dotcom team; Shirish Nalavade, Dotcom team</td>
</tr>
<tr>
<td>CC22</td>
<td><strong>A Way to Work with Invoice Flat Files in SAS</strong></td>
<td>Anjan Matlapudi, AmeriHealth; J. Daniel Knapp, AmeriHealth</td>
</tr>
<tr>
<td>CC23</td>
<td><strong>Tips to Use Character String Functions in Record Lookup</strong></td>
<td>Anjan Matlapudi, AmeriHealth</td>
</tr>
<tr>
<td>CC24</td>
<td><strong>Periodicity Via the SAS Iterative Loop</strong></td>
<td>Joel P. McMullin, <em>Maine Medical Center</em></td>
</tr>
<tr>
<td>CC25</td>
<td><strong>Measuring Medication Persistence Using SAS Stamina</strong></td>
<td>Mark J. Mihalyo, <em>Community Care Behavioral Health Organization</em></td>
</tr>
<tr>
<td>CC26</td>
<td><strong>Introduction to PK/PD Data Structures and Process Optimization to Get Analysis-Ready Data</strong></td>
<td>Smitha Mullapudi, <em>Independent Contractor</em></td>
</tr>
<tr>
<td>CC27</td>
<td><strong>Looping Through the Unknown</strong></td>
<td>Rebecca I. Piegari, <em>Department of Veterans Affairs</em></td>
</tr>
<tr>
<td>CC28</td>
<td><strong>SAS Procedures as UNIX Commands</strong></td>
<td>Sriharsha Rachabattula, <em>Covance Inc.</em></td>
</tr>
</tbody>
</table>
The Colorful ODS
Ali Sabouri, Healthcare

Join or Merge? The Differences Between PROC SQL Join and Data Step Merge and When to Use Them.
Ted Shelly, Pinnacle Project Group LLC

The Beginnings of Creating a Civil Partnership Between SAS and Excel
Kathleen M. Siemborski, Educational Testing Service

Zebras Wanted. Using ODS Tagsets and PROC REPORT to Create a Striped Spreadsheet
Gayle K. Springer, Johns Hopkins University Bloomberg School of Public Health

Life in the FASTCLUS: A Data-Driven Approach to Classifying Time Intervals
Jedediah J. Teres, MDRC

Intelligent PROC SORT NODUPKEY
Andrea Wainwright-Zimmerman, Capital One

How to Keep Multiple Formats in One Variable After Transpose
Mindy Wang, CDM Group

A Practical Method to Generate Desirable Group Sizes by Performing Adaptive Randomization
Feifei Yang, University of Pennsylvania

A Macro for Safely Merging Many Datasets
Taylor R. Young, The Broad Institute

How to Color Your Report?
Xuefen Yu, Celgene Corporate
An Animated Look at the Westward Movement of the US Population Center  
Mike Zdeb, University at Albany School of Public Health

Repeating Statistics Tables - Building A Macro that Dynamically Organizes and Formats  
Wayne (Weizhen) Zhong, Octagon Research Solutions

CC40

CC41
The Data Step Programming section is a combination of beginning, intermediate and advanced topics which focus on programming within the data step. Presentations will focus on how the SAS® System creates a data set, including the compilation and execution phases, and the role of the program data vector (PDV). Topics include: data step efficiency, data step merges, new features available in SAS 9.2. Presentations will be geared either toward learning opportunities for newer SAS users or best practices for those with more experience.

What a View!
Matthew Cohen, Wharton School

T.i.p.s. (Techniques and Information for Programming in SAS)
Kathleen J. Harkins, Merck Sharp and Dohme Corp.
Mary Anne Rutkowski, Merck Sharp and Dohme Corp.
Carolyn Maass, Merck Sharp & Dohme Corp.

SAS® DATA Step Merge - A Powerful Tool
Dalia Kahane, Westat

SAS® DATA Step – Compile, Execution, and the Program Data Vector
Dalia Kahane, Westat

Building Provider Panels: An Application for the Hash of Hashes
Judy Loren, Health Dialog
Richard A. DeVenezia

Don’t Lose Your Data! Tracking and Reporting on Dropped Records
Quentin E. McMullen, Datacorp
Joshua Black, Datacorp

Computing Area Under the Curve (AUC) Using Nested Arrays
Michael Pannucci, Boehringer-Ingelheim Pharmaceuticals

Why Programming Efficiency Should Matter to All of Us
John J. Cohen, Advanced Data Concepts LLC
PROC PRINT - The Granddaddy of All Procedures, Enhanced and Still Going Strong
David W. Franklin, TheProgrammersCabin.com

An Animated Guide: The SAS® Data Step Debugger
Russ M. Lavery, Independent Contractor

Using SAS® to Ease the Proofing of Messy Text
Nat Wooding, Hallsboro Systems Consulting
Rich La Valley, Strategic Technology Solutions

An Easy Route to a Missing Data Report with ODS+PROC FREQ+A Data Step
Mike Zdeb, University at Albany School of Public Health

The Top 10 Head Scratchers: SAS® Log Messages That Prompt a Call to SAS Technical Support
Kim Wilson, SAS
Finance
Jonas Bilenas, Barclays Global Retail Banking
Mark Keintz, Wharton Research Data Services

Finance-related applications and research constitute the second largest customer segment of SAS® users. This section provides insights into implementations of financial analysis tasks such as: portfolio evaluation, risk assessment and valuation, high frequency financial data analysis, credit scoring, and cash flow modeling. The finance section features papers that describe methods to perform these and similar tasks dealing with time-stamped or other financial data. Both advanced and beginner-level papers will be presented.

Modern Portfolio Theory Using SAS® OR
Murphy Choy, Singapore Management University

Net Present Value Settlement Algorithm in Collections Strategies
Zbigniew Naumowicz, RBS/Citizens
Daniel Costelloe, RBS/Citizens

From Stocks to Flows: Using HASH Objects for FIFO, LIFO and Other FO’s.
Mark Keintz, Wharton Research Data Services

The Application of SAS® Hash Object to Ultra-high Frequency Financial Data: A Case Study in Limit Order Book Reconstruction
Dorian M. Noel, University of the West Indies

Sunny Zhang, SAS
The Graphics & Reporting section has selected eleven informative papers that will demonstrate techniques you can use to transform your data into effective and aesthetically appealing output. The speakers will convey their insights on a wide range of material that includes SAS® Graphics Template Language (GTL), creating maps from shapefiles, constructing ArcGIS look-alike maps, waterfall charts, the Statistical Graphics (SG) family of procedures, a new trick for formatted Excel workbooks, creating multisheet Excel workbooks with the ODS ExcelXP tagset, choosing an ODS Style that best suits you, output as an interactive Java or ActiveX component in HTML, high volume reporting and ODS LAYOUT, and a SAS Institute presentation on ODS Essentials.

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**Show Me the Big Picture**
Sanjaya Kumar, New York State Department of Health

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**Choosing ODS Styles: How to Enter your Data in a SAS® Fashion Show**
Gwen D. LaSelva, New York State Department of Health

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**Multisheet Workbooks from SAS Data Using the ODS Excelxp Tagset or Another Way to Excel Using SAS**
Cynthia A. Stetz, Bank of America/Merrill Lynch

---

**Quick and Dirty Formatted Excel Workbooks Without DDE or ODS**
Andrea Wainwright-Zimmerman, Capital One

---

**The Greatest Hits: ODS Essentials Every User Should Know**
Cynthia L. Zender, SAS

---

**Programming the Provider Previews: Extreme SAS® Reporting**
Louise S. Hadden, Abt Associates Inc.

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**SG Techniques: Telling the Story Even Better!**
Charles Kincaid, Experis

---

**How to Fake ArcGIS Maps in SAS**
Anastasiya M. Osborne, Farm Service Agency, USDA
Waterfall Charts: Play the Mario with Your Data
Niraj J. Pandya, Element Technologies Inc.
Sapan Raval, Independent Consultant

Using SAS® GTL to Visualize Your Data When There is Too Much of It to Visualize
Perry Watts, Stakana Analytics
Nate Derby, Stakana Analytics

From Shapefiles to Maps Via PROC MAPIMPORT and PROC GMAP
Mike Zdeb, University at Albany School of Public Health
Hands-On Workshops
Dalia Kahane, Westat
Harsha Kotian

Hands-On Workshops allow attendees to reinforce their understanding of presentation content by accompanying the instructor through exercises and examples on a workshop computer. Workshop topics include presentations on exporting SAS® data to Excel, SQL, SAS 9.2 graphics procedures, SAS macros, SAS functions, data manipulation methods, and more. Hands-On Workshops are designed to accommodate attendees at both the beginning and intermediate levels.

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Ready to Become Really Productive Using PROC SQL?
Sunil Gupta, Gupta Programming

Using the 9.2 Statistical Graphic Procedures
Charles Kincaid, Experis

Practically Perfect Presentations
Cynthia Zender, SAS

PROC COMPARE: Worth Another Look!
Christianna S. Williams

A Tutorial on the SAS® Macro Language
John J. Cohen, Advanced Data Concepts LLC

Creating Stylish Multi-Sheet Microsoft Excel Workbooks the Easy Way with SAS®
Vince DelGobbo, SAS

Character Functions: A Hands-on Workshop
Jason L. Ford, United States Bureau of Labor Statistic

Replaying SAS Output with the Document Procedure
Michael F. Tuchman
Some programming practices that cause no real problems when working with smaller datasets (e.g., those with fewer than 256 columns and 10 million rows) can generate significant obstacles when working with large datasets. These include, but are not limited to: excessive I/O, extensive and high-maintenance scripts, network access and throughput constraints, inefficient retrieval of subsets, sparse data. The NESUG 2011 section on Large Data Sets presents papers on these topics using such techniques as hash lookup, formats, SGIO, the bufNo= option, the SAS® Bulk Loader, the Entity-Attribute-Value (EAV) model, and the point= option. Although the topic is rather advanced, papers present solutions that range from those that are very simple to implement to advanced techniques. The papers are oriented as tutorials or as case studies.

<table>
<thead>
<tr>
<th>Title</th>
<th>Authors</th>
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</thead>
<tbody>
<tr>
<td><strong>Hash + Point = Key</strong></td>
<td>Paul M. Dorfman, Dorfman Consultancy</td>
</tr>
<tr>
<td></td>
<td>Lessia S. Shajenko, Bank of America</td>
</tr>
<tr>
<td><strong>Common Sense Tips and Clever Tricks for Programming with Extremely Large SAS® Data Sets</strong></td>
<td>Kathy H. Fraeman, United BioSource Corporation</td>
</tr>
<tr>
<td><strong>A View Toward Performance</strong></td>
<td>Ed Heaton</td>
</tr>
<tr>
<td><strong>Programming Techniques for Optimizing SAS Throughput</strong></td>
<td>Steven M. Ruegsegger, IBM</td>
</tr>
<tr>
<td><strong>SAS Bulk Loader of RDBMS Data</strong></td>
<td>Vlad Svirsky, KVtech Corporation</td>
</tr>
</tbody>
</table>
Management & Administration
Gary McQuown, Data and Analytic Solutions, Inc.
Parag Shiralkar, eClinical Solutions

The Management & Administration section covers a wide range of topics focused on best practices for increasing productivity from employees, processes, projects, and products related to the use of SAS® Software. Presentations reflect a management perspective or offer the outlook of the individual contributor. Today's evolving business models must respond to increased globalization, standardization, accountability, out-sourcing, telecommuting, and electronic collaboration. In this environment, employees must sustain high productivity and efficiency while managers must adapt to managing in an ever changing environment. To cope with the current environment, SAS® users must continue to develop and expand their skills and grow professionally. Topics in this section range from optimizing operations in an evolving business environment with quality assurance, effective utilization of SAS for administration and management of data, knowledge management, SAS infrastructure maintenance, various certifications and other administrative facilities.

Product Repository: Objectives and Utilization - A Case Study
Amit Bhanose, Independent Contractor
Smitha Mullapudi, Eliassen Group

Merging SAS® Programming Groups: MERGE or Join?
Margaret M. Coughlin, Merck Sharp & Dohme Corp.
Alfredo Rojas, Merck Sharp & Dohme Corp.

Telecommuting SAS® Successfully for SAS Programmers
Mary N. Varughese, Merck Sharp & Dohme Corp.
Lisa Pyle, Merck Sharp & Dohme Corp.
Mei Dey, Merck Sharp & Dohme Corp.

Using SAS to Back Up Files Across Multiple Directories
Laura N. Lawrence, Quality Data Services Inc.

Authoring Quality Process Documents for Clinical Trial Programmers
Jane Marrer, Merck Sharp & Dohme Corp.

Project Management: Avoiding Peter Principle Promotions
Gary McQuown, Data and Analytic Solutions, Inc.
Effectively Implementing SAS Grid Architectures in Conjunction with Non-grid Aware Processes
Bill Nasuti, SAS

Understanding the Anatomy of a SAS® Deployment: What's in My Server Soup?
Mark Schneider, SAS
Pharma & Healthcare
Brian Schilling, Bogier Clinical and IT Solutions, Inc.

The Pharma & Healthcare section focuses on presentations using SAS® technologies to find solutions for analysis and reporting as it relates to drug/device discovery, disease prevention, patient care, the needs of insurance providers, as well as local and national healthcare agencies. This year we have Pharma and Healthcare offerings including: Clinical Trial Programming, data collection and storage according to CDISC standards through advanced statistical analysis methods, reporting results in regulatory submissions to regulatory agencies. In addition the impact of new policies and solutions for healthcare providers and insurers is discussed. Of special interest to both areas of the section is the impact of emerging and evolving standards. With the addition of HIPAA, healthcare reform, FDA regulations, and a host of other changes, SAS programmers are impacted by these changes in many ways. This section focuses on the needs of SAS programmers in these industries and in providing every-day, efficient, solutions.

The 5 Most Important Clinical SAS Programming Validation Steps
Brian C. Shilling, Bogier Clinical and IT Solutions

Automating SDTM File Creation: Metadata Files Speeding the Process
Daphne E. Ewing, Auxilium Pharmaceuticals Inc.

Metadata: Some Fundamental Truths
Frank Dilorio, CodeCrafters Inc.

Validating CDISC Compliant Data and Creating Define.xml Made Easy
Sandeep Purwar, Bodhi Global Solutions

Statistical Approach to Biosurveillance in Crisis: What is Next?
Ernest S. Shtatland, eStatConsulting
Timur Shtatland, eStatConsulting

A Fast Programming Channel from DDT to Datasets in Pharmaceutical Industries
Jianfeng Wang, Sanofi Pasteur
Linghua Zhou, Sanofi Pasteur

Using SAS® To Identify Cancer Treatment Patterns in Administrative Claims Data
Laurie Hamilton, Thomson Reuters Healthcare
Generating Define.xml
Sandeep Kottam, Ockham
Uma Sarath Annapareddy, INDEPENDENT CONSULTANT
Sree Lakshmi K Tripuraneni, PURDUE PHARMA

Geometric Statistics in PK Analysis - Programmer's Perspective
Niraj J. Pandya, Element Technologies Inc.
Smitha Mullapudi

Promoting Data-Driven Techniques
Haibin Shu, Consulting

Glorified PROC CONTENTS for Secondary Source Data
Bruce Thomas, VA
The Posters section offers visual displays of presenters' concepts for NESUG 2011 attendees' inquisitive viewing. Viewers will have the opportunity to examine the material (either on screen or on a poster board) at their own pace and revisit it a number of times during the conference, as these displays will be on view throughout the conference from Sunday afternoon through Wednesday morning. The subject matter of poster presentations is varied but usually provides a visually pleasing and informative message - and that is one thing that makes a tour of them so interesting. This year we have an exciting and wide selection of topics including posters on advanced statistical sampling routines and graphing, PROC REPORT and ODS DOCUMENT, epidemiology, macros, arrays, web-based table generators, and more.

PROC REPORT: Various Reporting Layouts in Clinical Study Reports and Advance Techniques
Santosh Bari, eClinical Solution

SAS Does the Dirty Work, But How Do I Make It Look Pretty?
Sarah Bobiak, National Comprehensive Cancer Network

An Array of Conditions: Using Arrays to Condense Repetitive Code
Amanda C. Browning, Educational Testing Service

Using Macros to Compute US Health Insurance Coverage Estimates for Insertion into a Web-based Table Generator
Michele Burlew, Episystems Inc.
Peter Graven, University of Minnesota-Twin Cities
Karen Turner, University of Minnesota-Twin Cities
Michel Boudreaux, University of Minnesota-Twin Cities

Using the SG Procedures to create and enhance scatter plots
Peter Flom, Peter Flom consulting

Weighted Sequential Hot Deck Imputation: SAS Macro vs. SUDAAN's Proc Hotdeck
David Izrael, Abt Associates Inc
Michael Battaglia, Abt Associates Inc

Automating Concatenation of PDF/RTF Reports Using ODS DOCUMENT
Shirish Nalavade, eClinical Solutions
Shubha Manjunath, Independent Consultant
Using SAS to Navigate the USDA Forest Service's Forest Inventory and Analysis Database
Matthew Russell, University of Maine
Philip Radtke, Virginia Tech
Aaron Weiskittel, University of Maine

Adaptive Randomization: Institutional Balancing Using SAS® Macro
Rita Tsang, Averion International Corp.
Katherine Kacena, Aptiv Solutions

SAS Macro for Nonparametric Residual Bootstrap Multilevel Modeling
Jichuan Wang, The George Washington University
Peichang Shi, University of Maryland
Avital Cnaan, The George Washington University

Drug Surveillance and Effectiveness Epidemiology Research - Questions to Ask Your Epidemiologist
Roberta J. Glass, Innovus
The FORMAT procedure is a very useful and powerful procedure in SAS. Not only does it allow you to generate user defined look-up tables, it can aid you in merging large data sets without having to sort the large data set. PICTURE formats are also useful for modifying numeric data for output and for working with date and time variables. The NESUG 2011 Format Section will feature papers that describe applications of PROC FORMAT and illustrate the simplicity of generating your own user defined FORMATS, INFORMATS, and PICTURE FORMATS.

The Power of PROC FORMAT
Jonas V. Bilenas, Barclays

Planting Your Rows: Using SAS® Formats to Make the Generation of Zero-Filled Rows in Tables Less Thorny
Kathy H. Fraeman, United BioSource Corporation

Search Across Format Libraries in FMTSEARCH Option
Ram Gudavalli, Merck Sharp & Dohme Corp.

PROC FORMAT - Not Just Another Pretty Face
Lois Levin, LSL Consulting

Applying INVALUE STATEMENT in PROC FORMAT for Ordering Character Variables
Prajitha Nair, Kreara Solution Trivandrum Kerala

My Fifteen Minutes of Format Fame
James Zeitler, Harvard Business School
**NESUG 2011 Proceedings**

**PROC SQL**  
Ed Heaton, *Data and Analytic Solutions, Inc.*

The SQL procedure provides access to data sets using industry-wide standards not inherent in the DATA step. These standards are generally portable to other relational database systems; the skills learned can be applied in those other environments and the scripts can be explicitly or implicitly passed from SAS® to other RDBMS. Furthermore, PROC SQL provides direct access to the DICTIONARY tables – a set of SAS® tables that store metadata or control the SAS® System and its processing. SQL provides its own challenges and rewards. For example: standard SAS name list syntax does not work in SQL, data sets can be joined (merged) on a key with very simple syntax, macro variables can readily be generated from the data, nesting of queries can provide relatively simple solutions to complex problems, SQL pass-through (both implicit and explicit) can move work from SAS to the RDBMS – or even Microsoft® Excel® for more efficiency. The NESUG 2011 section on PROC SQL presents papers on these topics using such techniques as explicit SQL pass-through, the into directive, recursive joins, and fuzzy matches, as well as efficiencies. This is essentially a tutorials section, although some papers are presented as case studies.

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**Selecting All Observations When Any Observation Is of Interest**  
Christopher Bost, MDRC  
*PS01*

**Pick Your Variables Out**  
Chen Cao, *University at Albany (SUNY)*  
Xi Chen, *University at Albany (SUNY)*  
*PS02*

**Techniques for Reading DB2 Data**  
Steven Feder, *Federal Reserve Board*  
*PS03*

**SQL Pass-Through and the ODBC Interface**  
Jessica R. Hampton, CIGNA  
*PS04*

**Introduction to PROC SQL for DATA Step Die-Hards**  
Christianna S. Williams  
*PS05*

**Assign Overpayment to Insurance Data with Adjustments**  
Qiling Shi, *NCI Information Systems Inc.*  
*PS06*

**Using SQL Joins to Perform Fuzzy Matches on Multiple Identifiers**  
Jedediah J. Teres, MDRC  
*PS07*
The Statistics and Analysis section covers the use of SAS® in applied statistical, analytical, epidemiological, and survey methods across a variety of industries, such as consumer packaged goods, health care and pharmaceuticals, government, and advertising. Papers illustrate both business and research implementations. Most papers illustrate approaches to satisfying a research or business need, including an analytic or statistical method for addressing the need and demonstrating a SAS implementation of that method.

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A Comparison of PDLREG and GAM Procedures in Measuring Dynamic Effects  
Patralekha Bhattacharya, Thinkalytics  
SA01

Dynamically Evolving Systems: Segmentation and Cluster Analysis Using Time  
David J. Corliss, Marketing Associates  
SA02

Proc Mixed - Right Options to Get the Right Output  
Shilpa C. Edupganti, Eliassen Group  
Sheetal Nisal  
SA03

Quantile Regression with PROC QUANTREG  
Peter Flom, Peter Flom consulting  
SA04

Baseball with Popcorn, Statistics and SAS - What A Mix  
David W. Franklin, TheProgrammersCabin.com  
SA05

An Optimal Search Process of “Eigen Knots” for Spline Logistic Regression  
John Gao, PointRight  
Cheryl Caswell, PointRight  
SA06

Confirmatory Factor Analysis and Structural Equation Modeling of Non-cognitive Assessments Using PROC CALIS  
Steven L. Holtzman, ETS  
Sailesh Vezzu, ETS  
SA07
Feature Selection and Dimension Reduction Techniques in SAS
Sassoon Kosian, EXL Service
Varun Aggarwal, EXL Service

An Animated Guide: An Introduction to Latent Class Clustering in SAS
Russ M. Lavery, Independent Contractor

Implementing a Customer Lifetime Value Framework in SAS
Krishna Mehta, Thinkalytics

How to Increase Sales of Orthopedic Equipment in United States: Factor and Cluster Analysis Using SAS and R
George Obsekov, American College of Radiology

On Deck: SAS/STAT® 9.3
Maura Stokes, SAS