



<http://www.sas.com/>

# SAS as a Reporting Tool

Carmen Williams

Ray Pospisil

ND HEUG

April 2006

SAS and all other SAS Institute Inc. product or service names are registered trademarks or trademarks of SAS Institute Inc. in the USA and other countries.

# Getting Started Using SAS

- What is SAS
- Examples of what we use SAS for at UND
- Importing files
- Creating a SAS dataset
- Basic SAS Procedures (Proc Sort, Proc Print, Proc Freq, Proc Means)
- Demonstration of some SAS examples
- Next steps

# What is SAS?

SAS is an application which offers an array of tools that users can use to uncover and analyze information. SAS can produce simple reports to complicated Web input forms; it has data warehousing capabilities and analytical applications. SAS has users in government, education, utility companies, business and financial management, and the healthcare industry.

SAS is offered over numerous platforms and offers a multitude of products. In our office we primarily use Base SAS and SAS Graph in version 9.

# Examples of what SAS is used for at UND Registrar's Office & Institutional Research

- Everyday query/report requests
  - Names & addresses of students in a program
  - Faculty data
  - Course data
- Recurring jobs (i.e. 3<sup>rd</sup> week, last day to drop, grade time)
- Student evaluation of faculty
- Retention and graduation rates
- Surveys – extract students & track/tabulate responses
- Numerous tables, graphs, maps, calendars
- Produce datasets for later use (Cohorts, Graduates, Withdrawn Students)
- And outputs as text, HTML, pdf, rtf, csv, direct emails

# Importing files

SAS can read a variety of files. It's sometimes easier to work with a SAS dataset, but here are some examples of other file types that SAS can read:

- **Importing a text file:**

```
data temp;
  length grade $2;
  INFILE "x:\all051.txt" LRECL=200 PAD;
  input callnum $1-4 callchk $5 instrref $6 Class $7 why $8 grade1 9 form $38
  Q1 10 Q2 11 Q3 12 Q4 13 Q5 14 Q6 15 Q7 16 Q8 17 Q9 18 Q10 19; run;
```

- **Importing an Excel file:**

```
proc import out=nsse datafile='s:\Surveys\NSSE\asof_032105.xls' dbms=excel97 replace;
  getnames=yes; run;
```

- **Importing an Access file:**

```
proc import out=responses table="HealthAffairs" dbms=access replace;
  database="s:\Special Projects\HealthAffairs.mdb"; run; Demo - example 1
```

# The look of a SAS session

The screenshot displays the SAS software interface. The main window is titled "SAS" and contains a menu bar (File, Edit, View, Tools, Run, Solutions, Window, Help) and a toolbar with various icons. On the left, the "Explorer" window shows the "Contents of 'SAS Environment'" with categories: Libraries, File Shortcuts, Favorite Folders, and My Computer. The central "Log - (Untitled)" window displays the following text:

```
NOTE: Copyright (c) 2002-2003 by SAS Institute Inc., Cary, NC, USA.  
NOTE: SAS (r) 9.1 (TS1M3)  
       Licensed to NORTH DAKOTA UNIVERSITY SYSTEM-SYSTEMWIDE-INTERNAL, Si  
NOTE: This session is executing on the XP_PRO platform.  
  
NOTE: SAS initialization used:  
      real time          2.26 seconds  
      cpu time           0.73 seconds
```

Below the log window is a window titled "example1" containing the following code and output:

```
* --- PC-SAS demo/example1                               Feb 11, 2006  
                                                         Carmen Williams -  
  
Proc import out=enrld replace  
      datafile= 'c:/sas/ndu_0040_sr_law.xls'; run;
```

The bottom of the interface shows a taskbar with icons for "Results", "Explorer", "Output - (...)", "Log - (Unti...", and "example1". The system tray at the bottom right displays the path "C:\WINDOWS\system32" and the cursor position "Ln 1, Col 1".

# Creating a SAS dataset

A more permanent solution for “storing” SAS data and eliminates having to import a file each time.

```
libname admin 's:\sas\extracts';  
creates faculty files from excel file 111804 cjw;
```

```
proc import out=temp1  
  datafile="s:\faculty\faculty051 pivot.xls"  
  dbms=excel97 replace; sheet="sheet1";  
  getnames=yes; run;
```

```
data admin.faculty_2004 ;  
  set temp1; run;
```

# Basic SAS PROCS

```
Proc sort; by lastname firstname; run;
```

```
Proc print n d; id name; var emplid acad_plan address1 city st zip;  
title1 Students Enrolled for Fall 2006 (report id: IR enrld  
students);
```

```
Proc freq;  
tables subject*class_nbr / list;  
title1 Number of class by subject (dept); run;
```

```
Proc means;  
class level;  
var cgpa; run;
```

# What's available for SAS Support?

- ITSS/HECN offers PC-SAS licenses and assistance
- UND Users Group – a group that shares “SAS tips & tricks”
  - Carmen Williams – 777-2456 [carmenwilliams@mail.und.nodak.edu](mailto:carmenwilliams@mail.und.nodak.edu)
  - Carol Drechsel – 777-2487 [caroldrechsel@mail.und.nodak.edu](mailto:caroldrechsel@mail.und.nodak.edu)
- Red River Valley Users Group (meetings in Moorhead, MN)  
<http://www.und.nodak.edu/org/rrvsug/>
- North Dakota SAS Users Group - Bismarck (state gov) group just getting started (contact Arlen Harmoning [aharmoni@state.nd.us](mailto:aharmoni@state.nd.us))
- Independent consultants & books, SAS web training, SAS Institute, SAS on-line documentation, SAS reference books, SAS OnlineTutor
- MWSUG & SUGI (annual conferences at the regional & national level)