



SPCS Newsletter

St. Paul Computing Services

October, 1988

University of Minnesota

CONTENTS

Electronic Postmaster	1
New Data Entry Equipment	2
New Disk Drives	2
New Temporary Disk Allocation	2
Rate Decrease	2
SPCS Open House	2
Communications	
TELNET and FTP Components	3
of TCP/IP at SPCS	
St. Paul MicroLab	4
MICROLAB Changes	4
Software Notes	
SPSSx	5
SAS	5
ARCHIVE	5
Fall Short Courses	6
Project ASSIST Fall Workshops	8
Consulting Corner	8
Holiday Hours	9
Newsletter Directory	9

Electronic Postmaster

An Electronic Postmaster database containing information about users at all University of Minnesota host systems will soon be available at SPCS. You will be able to look up your U of M colleague's electronic and paper mail addresses, or obtain information about U of M mainframe computers that have users represented in this electronic directory. The database will contain information from SPCS, ACSS, and Duluth.

The information stored in the database includes the user's name, userid and host computer identification. Users have the option of including their department, college/position, work address, and work phone in the database. Users may also choose to include their home address and home telephone number in the database.

Features of the SPCS Electronic Postmaster include:

- Capability to add, change, or delete your own entry in the Postmaster database. If you have accounts on other (non-SPCS) mainframe hosts at the U, you will have to access that hosts' Postmaster.
- Query ability, to find out what other computer systems have Electronic Postmasters.
- Interactive access from the PROJECT-GROUP Directory menu.
- Non-interactive access in two ways:
 - 1) You will be able to send a search request to the Postmaster with a TELL command, and receive a mail reply in your reader.
 - 2) You will be able to send a search request to the Postmaster in a MAIL file, and receive a mail reply in your reader.

Future enhancements include:

- Ability to send a note from the detail display screen after doing an interactive search.
- Ability to select a name from the search results screen and add it to your own personal directory.

This Postmaster Directory is similar to Postmasters on other University systems (ACSS has one), and it will look different from the local directories you have access to from the PROJECT-GROUP Directory menu. Remember, it contains information about users from MANY University systems, not just SPCS!

The Electronic Postmaster will be available in early Fall Quarter, 1988. A Documentation Note with a complete description of how to use the Postmaster will be available then. Watch the System Notes for the exact date!

New Data Entry Equipment

SPCS recently installed a new Data Entry Key Disk system: a TARTAN, manufactured by Recognition Equipment Incorporated. We are indebted to the Minnesota Dairy Herd Improvement Association (DHIA), with whom we have enjoyed a close working relationship since 1963, for the financial arrangements and support that made this acquisition possible. This state-of-the-art Data Entry technology has many additional capabilities over the previous Data Entry system. Some of these are:

1. Online interactive access to any mainframe within the University Internet structure and remote job entry file transfer.
2. Word processing capability.
3. Direct attachment to an IBM microcomputer (indirectly to Macintosh) for upload/download file transfer (5 1/4" or 3 1/2" floppy diskettes).
4. 1600 bpi magnetic tape output (ASCII or EBCDIC).
5. Hardcopy listings.
6. Error checking: ranges, length, minimum, maximum, and character type, for example.
7. Miscellaneous facilities: table lookups, accumulators, automatic incrementing and constant insertion, and trial balancing, for example.
8. Numerous file, device, and communications utilities.

Please come and see our new Key Disk system during our Open House on October 13th and 14th. Discount coupons for first-time data entry users will be available at the Open House.

For information about current turn around time, cost estimates, or other questions, contact Linda Pichner or Cleo Medlock at 624-7297.

Data Entry Services
8:00 A.M. - 4:30 P.M., M - F
Room 6, North Hall

New Disk Drives

SPCS recently acquired new disk drives. These IBM 3380 minidisk drives are state-of-the-art mass storage devices and will replace the older, less efficient disk drive models. As the SPCS staff moves files from the old style of disk drive

(3370 type), many users will notice a slight change in their minidisk sizes. See the Documentation Note 4, "Managing CMS Minidisk Space," for further information on minidisk sizes, block sizes, and efficiencies.

New Temporary Disk Allocation

Look for a logon announcement during the Fall Quarter about a new TDISK exec and a change in the command format for acquisition of temporary disk space.

Rate Decrease

Disk space and connect time charges have been reduced for the 1988 fiscal year (July 1, 1988 through June 30, 1989). The new minidisk rate structure is listed below.

Megabytes Size	Rate	Bytes	Cost/month
<10	.000011	1,000,000	\$11.00
>10<25	.000009	1,000,000	9.00
>25<50	.000007	1,000,000	7.00
>50<100	.000005	1,000,000	5.00
100+	.0000025	1,000,000	2.50

The new cost of a 465 block minidisk will be \$5.24 per month, for example:

$$\begin{aligned} &= 465 \text{ blocks} * 1024 \text{ bytes per block} \\ &= 476,160 \text{ bytes} * .000011 = \$5.24/\text{month} \end{aligned}$$

We've lowered our connect time charges for prime time hours, from \$2.00/hour to \$1.75/hour (a 12.5% decrease). We've also lowered our connect time charges for offhour time, from \$1.50/hour to \$1.30/hour.

SPCS Open House

We are hosting our first annual Open House October 13th and 14th (Thursday and Friday), from 10:30 to 4:00. Stop in and visit us!

Demonstrations will be held in the User rooms (90 Coffey Hall), at the Help Desk, and in the SPCS Micro Lab (basement of St. Paul Central Library). There will be online demonstrations

on the SPCS Mainframe and on PCs of various software and applications, including SAS and NOMAD2. Handouts will be available, and our staff members will be on hand to discuss our services and show you around.

COMMUNICATIONS

TELNET and FTP Components of TCP/IP at SPCS

TELNET and FTP are two components of the TCP/IP utility that is available for remote logon and file transfer. TCP/IP (Transmission Control Protocol/Internet Protocol) is a set of communication protocols. Among the major users of this system are United States government agencies and major universities. TCP/IP can be used in communications between locally attached networks (personal computers) as well as between mainframe hosts thousands of miles apart.

TELNET allows interactive logon to distant host systems. For example, if you have an account on a computer at Cornell University, you could logon and use that account from your office at the University of Minnesota.

FTP (File Transfer Protocol) allows the transfer of files and file management (list and erase) from SPCS to any other host that supports FTP. To use FTP you need to know the userid, logon password, and, on VM systems, the disk password for the account you want to use.

SMTP (Simple Mail Transfer Protocol) and the .ddn command in PROFS access the TCP/IP system for communicating with non-BITNET hosts. The use of the .ddn command from PROFS and the PROJECT-GROUP screens was presented in the June 1988 SPCS newsletter.

The Internet name of some of the U of M mainframes are:

SPCS (IBM 4381)	vm1.spcs.umn.edu
ACSS (VAX)	vx.acss.umn.edu
ACSS (Encore)	ux.acss.umn.edu

To access the TCP/IP product disk, you must enter the GETPROD command as follows:

```
getprod tcpip
```

Online help files are available on the TCP/IP product disk. To get help for the format of the TELNET and FTP commands, you may enter HELP TELNET or HELP FTP from CMS. To get help on a TELNET or FTP subcommand (e.g., GET or PUT), you must enter HELP FTP GET or enter the HELP command from within an FTP session.

To initiate a remote logon to another host system, use the TELNET command. For example,

```
telnet vx.acss.umn.edu
```

If a communications line is free, you will be connected to the ACSS VAX, and you may logon and check your mail, run a program, or do what you like. When you logoff the remote system, you will be returned to the SPCS system, and you must logoff from our system before leaving your terminal. To issue a TELNET command (such as HELP or QUIT) once you are in a TELNET session, you must press any PF key between PF4 and PF12 to bring up the ENTER TELNET COMMAND prompt. The TELNET HELP command will display a list of commands for which there is help.

If you want to transfer a file (for example, from SPCS to the VAX), you need to execute the FTP program. After using the GETPROD command to access the TCP/IP utility, enter the following:

```
ftp vx.acss.umn.edu
```

If a communications line is available, you will be prompted for the userid and password for the account that you wish to copy the file to. To copy a file from SPCS to the VAX, enter the PUT command as follows:

```
put fn.ft.fm vaxfn.vaxft
```

where **fn** **ft** **fm** stand for the SPCS filename, filetype, and filemode of the file. When you have completed your file transfers, enter the QUIT command to return to your SPCS account. Enter the HELP command from within FTP to display a list of the FTP commands. Enter HELP *command* (e.g., HELP put) to get help on a specific command.

A Documentation Note with further information will be available in October.

ST. PAUL MICROCOMPUTER LAB

Room B50 Central Library 624-3269

The SPCS Microcomputer Lab is open to U of M students, staff, and faculty. Entry to the lab requires a Microcomputer Access Card (available for \$30.00/quarter at the St. Paul Bursar's Office). High quality printing is available using the Apple Laser Writer Plus, HP LaserJet Plus, or the HP ColorPro plotter. To use one of these printers, you'll need a Printer Access Card; they are available for \$1.00 (good for 10 pages) at the Bursar's Office. The lab is operated on a first-come, first-served basis. Each user is limited to 2 hours/session, with a 2 hour waiting period between sessions.

Software available in the lab:

<u>IBM</u>	<u>Macintosh</u>	<u>Apple IIe</u>
Minitab	MacWrite	Appleworks
Statistix	Word	MousePaint
GLIM	File	MouseWrite
WordStar	MacPaint	
WordStar 2000	Chart	
WordPerfect	Multiplan	
Lotus 123	MacPascal	
dBase III	MS-BASIC	
Turbo Pascal	MacSpell+	
PC Paintbrush	MacTerminal	
	TinCan	

System configuration

- 12 IBM PCs with 640K memory
- 1 IBM PC/AT with 512K memory
- 6 Macintosh Plus with Mb memory
- 2 Apple IIe with 128K memory
- 2 PS/2 Model 50

MICROLAB Changes

The good news from the SPCS Micro Lab (located in the basement of the St. Paul Central Library) is the announcement of **NEW EXTENDED HOURS**, beginning September 24th:

Monday through Friday: 8:00 a.m. to 10:00 p.m.
Saturdays: 10:00 a.m. to 2:00 p.m.
Sundays: 6:00 p.m. to 10:00 p.m.

More good news: we're adding two IBM Personal System II Model 50 micro computers. Features include 640K RAM, a 20 megabyte internal hard drive, a 1.4 megabyte floppy disk drive, graphics capability, and color graphics monitor.

The bad news is that University administration has raised the price of the Micro Lab access cards from \$20.00 to \$30.00 per quarter. This increase in price is needed to offset the cost of acquiring new equipment (such as the IBM PS II Model 50's) and staffing the lab for extended hours.

STAT CLINIC

**125g Classroom Office Building
625-3121**

The Statistical Clinic is staffed by graduate students in the School of Statistics and supervised by faculty members of the Applied Statistics Department. They provide statistical consulting to researchers at the University of Minnesota, generally without charge. Assistance on appropriate experimental design and methods, data analysis, and interpretation is provided by the Clinic.

SOFTWARE NOTES

SPSS^X

SPSS^X Release 3.2 will be installed and available as the FUTURE version of SPSS^X during fall quarter. Features of SPSS^X 3.2 include:

- A Macro facility that allows you to create your own SPSS^X commands from existing ones.
- The MATRIX DATA command creates an active file from matrix materials entered in raw data form.
- The NLR command performs nonlinear regression analysis.
- The SET command has five new subcommands that enable you to customize currency formats for your own application.
- The DISPLAY, VECTOR, and REPORT commands have been enhanced.

The new SPSSX User's Guide 3rd Edition documents the new release. This manual is available from SPSS Inc. and the University bookstores.

Two new add-on products have been installed with the newest release of SPSS^X: LISREL VI and TRENDS. LISREL VI is a program that analyzes linear structural relations. Documentation is available in USERPROC LISREL: Using LISREL VI within SPSSX (available from SPSS Inc.) and the LISREL User's Guide (available from Scientific Software). Copies of the documentation are available for reference in 90 Coffey Hall. TRENDS includes facilities for time series analysis, including basic curve fitting and exponential smoothing through sophisticated ARIMA models. TRENDS is documented in the SPSSX Trends manual (available from SPSS Inc.).

SAS

SAS version 5.18 will be installed and available as the FUTURE version during fall quarter. When this version of SAS has been tested, an announcement will be made as to the date that this release will become the current version. The changes and enhancements offered by this release of SAS include:

- Special missing values A-Z in a transaction data set update the master data set to that special

missing value.

- The LIBNAME statement to associate a libref with a SAS data library is documented.
- The CATOUT, CIMPORT, CPORT, and DISPLAY procedures have been moved from the AF product to base SAS.
- The definition of the SAVE statement in the DATASETS procedure has changed.
- The FORMAT procedure allows you to create user written formats.
- The FREQ procedure accepts negative values for the WEIGHT variable.
- The TAPECOPY procedure now supports IBM 3480 tape cartridges.
- There has been an enhancement of the LOGLIN statement in the CATMOD procedure.
- Additional options are available for the TABLES statement in the FREQ procedure.
- The use of the BY statement in procedure NLIN is documented.
- There is a new procedure MODECLUS that clusters the observations in a SAS dataset using any of several algorithms.
- Support for the IBM 7171 Protocol Converter. PC SAS users will be able to upload and download SAS data sets.
- In the SAS/GRAPH product there are new options for the GOPTIONS statement, new map data sets, new fonts, and additional device drivers.

Technical Report P-175 documents the changes and enhancements to the SAS System for Release 5.18 under CMS. This manual is available for reference in 90 Coffey Hall and for sale from SAS, Inc. and the University bookstores.

SPCS has also acquired the license for the SAS/IML product. IML is the Interactive Matrix Language for SAS that replaces PROC MATRIX. Because there are many differences between PROC MATRIX and SAS/IML, all users of IML should consult the SAS/IML User's Guide (Appendix 3) for a list and explanation of the differences.

ARCHIVE

Look for an announcement during October about a new ARCHIVE utility. Files in the current ARCHIVE will be transferred by SPCS. Documentation will be published, describing the new system.

FALL SHORT COURSES

User Orientation

An introduction to St. Paul Computing Services for new and prospective users, offering a general overview of SPCS's hardware, software, and services. Subjects include: batch and interactive computing, terminals supported, user accounts, processing charges, and assistance and/or documentation available. After the presentation, the orientation speaker will conduct a short tour of the Computer center.

Introduction to CMS

An introduction to the Conversational Monitor System, an operating system that allows a user to edit and save files, submit batch jobs, and run jobs interactively. SAS and NOMAD2 (a data base management system) may be accessed interactively through CMS.

CMS MAIL Utilities and BITNET

This demonstration will cover the CMS commands used to send messages and files to other computer users at SPCS, and, through BITNET, to other universities. BITNET is an international network of over 400 research and educational institutions to which electronic mail, files, and messages may be sent.

CMS Advanced Topics I

Previous registration in CMS class required. This class will cover the use of tapes at SPCS, commands to request information about the computing environment, and the SPOOL command.

CMS Advanced Topics II

Previous registration in CMS class required. This class is an introduction to the CMS programming languages REXX and EXEC 2. Learn to make the power of these languages work for you -- save time, reduce errors, and relieve tedium. Previous programming experience may be helpful, but is not necessary.

SAS (Statistical Analysis System)

Previous registration in CMS class required. This class will cover the Statistical Analysis System, a comprehensive statistical package that provides software tools for data storage and retrieval, report writing, general programming, and graphics.

Introduction to SAS/GRAPH

Previous registration in SAS class required. SAS/GRAPH is a graphics package (fully integrated with the rest of the SAS system) that has procedures that produce pictures, utilities for enhancing pictures, and a mechanism for storing and replaying pictures. This course will introduce the user to the capabilities of SAS/GRAPH for displaying data as 2D or 3D plots, charts, maps, text slides, and contour plots.

PC SAS Overview

This course covers some of the basic features specific to the PC version of SAS.

YTERM Demonstration

An introduction to YTERM, a terminal emulation software package for IBM PCs and compatibles. YTERM's terminal emulation will be covered, as well as its features for transferring files between the SPCS mainframe and your PC and for printing mainframe files on a printer attached to your PC. SPCS distributes YTERM for a small charge and highly recommends it to those who use their IBM PC or compatible as a terminal for the SPCS mainframe.

TinCan Demonstration

An introduction to TinCan, a terminal emulation software package for Apple Macintosh computers. TinCan's terminal emulation will be covered, as well as its features for transferring files between the SPCS mainframe and your Macintosh and for printing mainframe files on a printer attached to your Macintosh. SPCS distributes TinCan for a small charge and highly recommends it to those who use their Macintosh as a terminal for the SPCS mainframe.

PROCOMM Demonstration

An introduction to PROCOMM, a terminal emulation software package for IBM PCs and compatibles. PROCOMM's terminal emulation will be covered, as well as its Kermit features for transferring files between the SPCS mainframe and your PC.

Introduction to NOMAD2

An introduction to NOMAD2, a database management system. NOMAD2 is a fourth generation language that may be used for data management, retrievals, application programming, report writing, and graphics.

Fall Short Course Schedule

User Orientation will be held in 125 Coffey Hall on September 29, from 3:00 to 5:00.

1988		October					SPCS
Sun	Mon	Tues	Wed	Thurs	Fri	Sat	
						1	
2	3 CMS (Day 1) 3:00 - 5:00	4	5 CMS (Day 2) 3:00 - 5:00	6 Mail/BITNET 3:00 - 5:00	7 CMS (Day 3) 3:00 - 5:00	8	
9	10 CMS (Day 4) 3:00 - 5:00	11 YTERM Demo 3:00 - 4:00	12 SAS (Day 1) 2:00 - 4:00	13 TinCan Demo 3:00 - 4:00 Open House	14 Open House	15	
16	17 SAS (Day 2) 2:00 - 4:00	18 PROCOMM 3:00 - 5:00 CMS (Day 1) 3:00 - 5:00	19 SAS (Day 3) 2:00 - 4:00	20 CMS Adv. 2:00 - 4:00 CMS (Day 2) 3:00 - 5:00	21 SAS (Day 3) 2:00 - 4:00	22	
23/30	24/31 SAS/GRAPH 2:00 - 4:00	25 CMS (Day 3) 3:00 - 5:00	26 CMS Adv. II 2:00 - 4:00	27 PC SAS 3:00 - 5:00 CMS (Day 4) 3:00 - 5:00	28	29	

1988		November					SPCS
Sun	Mon	Tues	Wed	Thurs	Fri	Sat	
		1 SAS (Day 1) 10:00-12:00	2	3 SAS (Day 2) 10:00-12:00	4	5	
6	7	8 SAS (Day 3) 10:00-12:00	9	10	11 NOMAD2 3:00 - 5:00	12	
13	14	15	16	17	18	19	
20	21	22	23	24 Thanksgiving	25	26	
27	28	29	30				

PROJECT ASSIST FALL 1988 WORKSHOPS

Project Assist is a service organization providing free consultation and assistance to faculty members who are developing computer-based instruction. Project Assist staff will offer the following workshops during Fall Quarter 1988:

Evaluating Instructional Software

This workshop introduces criteria for evaluating the quality of instructional software. To illustrate these criteria, examples of instructional software are presented for participants to critique.

Assessing the Need for Computer-based Instruction

This workshop examines the various factors to consider when deciding whether or not to use instructional software. Participants will be provided with a framework for decision-making.

Developing Computer-based Instruction

This workshop acquaints participants with the process of software development. From identification of an instructional problem through evaluation of the final product, decisions must be made which influence the quality and instructional impact of the courseware.

All workshops are free of charge. Times and dates will be announced. For information, please call Project ASSIST at 626-1090.

CONSULTING CORNER

Q. Can you spot the trouble(s) in the following SAS statements?

```
DATA TEMP;  
  SET VARIETY.MIDWEST;  
  IF GENOTYPE = 2 THEN VAR1 = 0  
  AND VAR2 = 5;
```

```
DATA AA;  
  SET RAW.DATA;  
  IF REP = 5 OR 6;
```

A. Both the logical expressions need to be rewritten so there is no ambiguity when SAS evaluates an observation. Only one statement should be executed for a true condition. A better way to write it would be to use a DO group followed by an ELSE statement:

```
DATA TEMP;  
  SET VARIETY.MIDWEST;  
  IF GENOTYPE = 2 THEN DO;  
    VAR1=0;  
    VAR2=5;  
  END;  
  ELSE statement;
```

In the second example, watch out when using the OR operator with IF statements.

```
IF REP=5 OR 6;
```

is not the same as:

```
IF REP=5 OR REP=6;
```

The first statement is always true. $X = 5$ is evaluated first and the result may be 5; however, the 6 is evaluated as $6 = 6$, and since $6 = 6$ is always true, the whole expression is true. The second IF statement is not necessarily always true. Reference: P. 225, SAS User's Guide: Basics.

```
DATA AA;  
  SET RAW.DATA;  
  IF REP = 5 THEN statement;  
  IF REP = 6 THEN statement;
```

Q. I'm looking for ways to cut down on computing time as well as my own typing mistakes. Are there any ways to write variables in an abbreviated form in SAS?

A. Numbered names of the form, x_1, x_2, \dots, x_n can be abbreviated to x_1-x (to represent all variables from x_1 to x_n). A range of variables can be abbreviated as $x--a$, representing all variables from x to a . Some special SAS names are NUMERIC_,

CHARACTER, and _ALL_ represent all numeric, all character, and all variables, respectively.

For example, the VAR statement given below:

```
VAR NAME WEIGHT HEIGHT AGE PULSE BP
QUES1 QUES2 QUES3 QUES4 QUES5;
```

Could be rewritten as:

```
VAR NAME--QUES5;
```

If just the variables QUES1 through QUES5 were needed, you could call for them as:

```
VAR QUES1-QUES5;
```

Reference: P.18, SAS User's Guide: Basics.

Holiday Hours

Thanksgiving

Reduced service begins at midnight on November 23 and continues until November 26.

Christmas

Reduced service begins at midnight on December 22 and continues until December 27 at 7 AM.

New Year's

Reduced services begins at midnight on December 29 and continues until January 2 at 7 AM.

"Reduced Service" means that tapes will not be mounted, printed output will not be distributed, and the Coffey Hall user area will be closed.

Newsletter Directory

We've compiled a listing of still-current articles published in past newsletters below. These files are available on the SPCS Bulletin Board through the Project Group Menu. Remember: you may read, print, and/or download files from the Bulletin Board. A limited number of back copies of SPCS newsletters are available in 50 Coffey Hall.

October 1987

New ACCount STATus Command
New Electronic Communication System Available
Online Consulting
Software
SAS/AF Available

January 1988

Electronic Communication
A Guide to the Ethical and Legal Use of Software for Members of the Academic Community
ACCcount STATus Command Update
Software
PC SAS Renewals
Online Consulting

April 1988

VM/SP Release 5.0 at SPCS
Time Grant Account Renewal
LINKACC Changes
SAS CBT Courses
Software
New Release of TinCan (3.0)
General Information - Version 6.03 PC SAS
Changes in Release 6.03 (PC Base and STAT)
PC SAS/GRAPH (6.03) Available

June 1988

Command Changes (GET changed to GETPROD)
New CMS EXEC Class
Documentation Note 23: ACCSTAT
Software That Destroys
Software
CMS Release 5.0
NOMAD2 Version 4.5
PC SAS Version 6.03
Good-bye Computer Cards
Services
IBM Higher Educational Software Consortium
Time Grant Renewal
Beyond BITNET
TPRINT Problems

General Information

Main Office	50 Coffey Hall	M - F	8:00 - 4:30	624-7788
Help Desk	90 Coffey Hall	M - Th	9:00 - 5:00	624-6235
		F	9:00 - 4:00	
	140 Blegen Hall	M	2:00 - 5:00	624-5278
		Th	10:00 - 1:00	
Stat Clinic	125g COB	T - Th	9:00 - 12:00	625-3121
		T - Th	2:00 - 4:00	
Micro Lab	B50 Library	M - F	9:00 - 4:30	624-3269
Data Entry	6 North Hall	M - F	8:00 - 4:30	624-7297
Interactive Dialup Operations				624-4220
				624-3482

- Computer Hours**
- From 8:00 a.m. Monday to 4:00 p.m. Saturday (except 5:00 a.m. to 5:30 a.m. Tuesday through Saturday)
 - Sunday 2:40 p.m. to 10:00 p.m.

Note: User rooms (90 Coffey Hall) are open during Computer Hours, but after 6 p.m. and on Saturday and Sunday, the outside doors to Coffey Hall are locked. You can still get to the User Room through the tunnel from the St. Paul Campus Library or the Student Center. If these entrances are closed, special admission may be arranged by calling Operations.

The University of Minnesota is committed to the policy that all persons shall have equal access to its programs, facilities, and employment without regard to race, religion, color, national origin, sex, handicap, age, or veteran status.

St. Paul Computing Services
50 Coffey Hall
1420 Eckles Ave.
St. Paul, MN 55108

WALTER LIBRARY
UNIVERSITY ARCHIVES
11 WALTER LIBRARY
MPLS CAMPUS