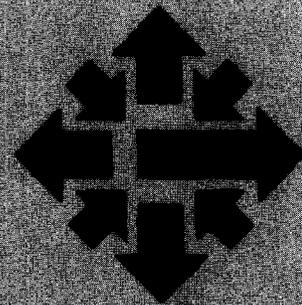


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# University Computer Center Newsletter

University of Minnesota  
Twin Cities

August 1984  
Volume 18, Number 8



## NSF Funds CRAY Researchers

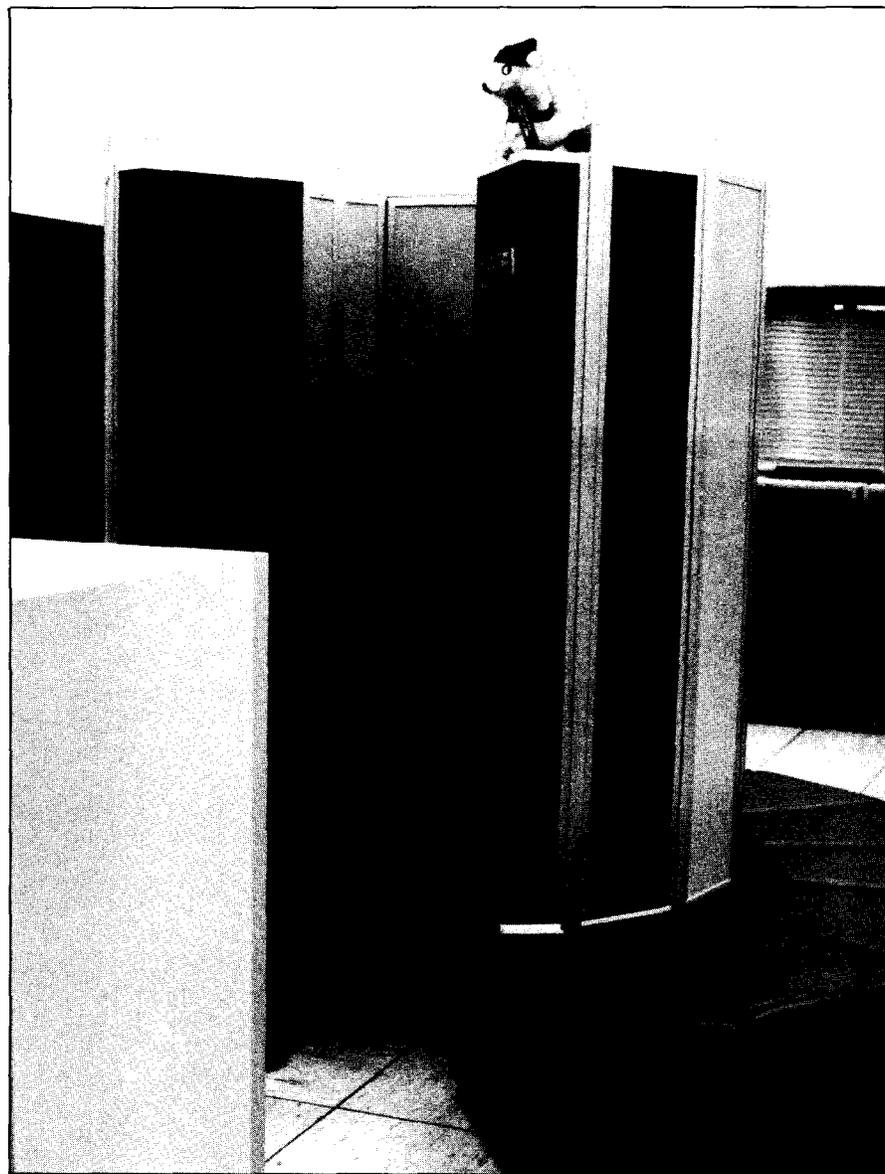
Our CRAY-1 has a new group of users: researchers from around the country who have been granted supercomputer time under an agreement with the National Science Foundation (NSF). The agreement, which runs from July 1, 1984 through June 30, 1985, is part of the current phase of NSF's supercomputing initiative.

In response to a growing concern over lack of access to supercomputing resources for researchers, an NSF task force established in 1983 began to investigate ways to improve the situation. The task force solicited proposals from facilities with supercomputers that could provide immediate access to those with NSF grants. Minnesota's proposal was approved and we were designated as one of three NSF supercomputer sites.

NSF continues to plan for future supercomputer access. This spring, the foundation established an Office of Advanced Scientific Computing to oversee this effort. Several articles in the April, 1984 issue of *Communications of the ACM* discuss both NSF's current and long-term initiatives in this area.

Those researchers with current NSF grants who feel that their research could benefit from the use of supercomputing resources have been asked to submit requests for such funding. These requests will be processed as quickly as possible, and our first NSF users will be those whose requests are approved.

NSF has also requested new proposals for research projects that use supercomputing resources. These proposals will go through NSF's peer



Richard Hotchkiss

review process, and those whose proposals are approved will become our users sometime in the future.

We are pleased to welcome all NSF grant recipients to our user community. (Lenief Heimstead)

# MEMO... FROM THE COMPUTER

## CB Family Will Be Removed Sept. 3

We will remove the CB family on UCC's CYBER systems on Monday, September 3. We will copy CB files onto the CA family. If you never enter the CB family at log-in time, never specify CB on a USER statement, and never use the FAMILY statement, this will not affect you.

Two different families of permanent files reside on the CA computer today: the CA and CB families. The CB family exists for historical reasons: until last year, there was a CB computer. For several years, the files on the CB computer (the CB family) were shared with the CA computer. Users on the CB computer could only use files in the CB family. Users on the CA computer could use files in either family. When we decommissioned the CB computer, the CB family was left active on the CA computer for a transition period.

The CA family is the default on the CA computer. You access the CB family in one of the following ways:

- Specify CB in response to the FAMILY prompt at log-in.
- Use the control statement FAMILY(CB) after you log-in on the CA family.

- Run a batch job with a user statement in the form:  
**USER,username,passwd,CB.**
- Use a User statement like the one above at any time in a batch or interactive job.

The upcoming change affects only those who use the CB family in one of these ways. The problem you are most likely to encounter is that you may use the wrong password when we remove the CB family. Each family has a distinct file that contains the valid user numbers and their associated passwords. If you actively use both families, you probably remember your password on each. They may even be identical. But if you have only used the CB family, you may not remember your password on the CA family. After September 3, only the CA family will exist, and you will be able to use only the user number/password pair that works on CA. Now would be a good time to be sure you know the password for your CA family user number. If you need assistance, call our HELP-line, 376-5592.

UCC will automatically copy all the files stored on the CB family to the CA family. When you use the CA family after September 3, you will find both your CA and CB family files there. If you had a file with the same name on both families, only the CA version is available. The CB file is on a special CB family backup tape. You can have that file reloaded by calling either the HELP-line or our permanent file restoration line, 376-5605. There is no charge for this special reload operation.

After September 3, the CYBER system will ignore the CB parameter when it is entered as the third parameter on a USER statement or when it is entered in response to the FAMILY prompt at log-in time. You should remove it from USER statements in procedure files and from automatic log-in processors.

CB family users who do not implement the changes we suggest here will not be able to use the system after September 3. If this happens, contact the HELP-line.

(K. C. Matthews)

# Organizing Your Interactive Session with Procedures

When you log on to one of the CYBER systems, a slash (/) tells you that the system is ready to accept commands from the terminal. At that point, all the resources of the system are available to you. You can issue one of more than a hundred operating system commands, each qualified by perhaps a dozen parameters. Depending on the limits imposed on your account, you may switch from one disk pack, machine, compiler, or application package to another. You may call up, for example, SCSS, BMDP, M77, MINNLIB, PASCAL, XEDIT, PL/1, GPSS, CPDEBUG, SIMULA, or SPICE. Each of these acronyms is a complex system in itself. The choices begin to seem endless.

But in most cases you know what you want to do when you sit down at a terminal. You want to create a file or run a program or print out some text. You do not choose from a wealth of possibilities to respond to the slash; instead, you want to translate your intentions into commands.

For example, suppose you want to print a file. You might check your catalog of permanent files to see if the file is there and to remember its name correctly. You then make the file local and copyshift it to remove text from column one so that the printer can print the file correctly. Then you want to route the file to the printer and get the output delivered to a bin at Experimental Engineering.

To accomplish this simple task, you issue the following sequence of commands in response to the slash:

```
/CATLIST
/GET,FILE1
/COPYSBF,FILE1,FILE2
/ROUTE,FILE2,DC=LP,EA=A9,UN=EA,
BIN=350
```

Your intention to print a file (in this example, FILE1) has turned into this sequence of commands. You may remember them from habit or you may look them up in a manual to enter them correctly.

```
.PROC,PRINT*I,F'FILE NAME'=(*F),
UN'SITE FOR OUTPUT'=(EA,BC,EB),
BIN'BIN NUMBER FOR OUTPUT'=(*A).
.HELP.
```

This procedure copyshifts and routes a local or permanent file in full ASCII to one of three locations.

```
.HELP,F.
```

The name of the file to print and route.

```
.HELP,UN.
```

The site you want your printout delivered to: EA = Experimental Engineering, BC = Lauderdale, and EB = West Bank.

```
.HELP,BIN.
```

The bin number for your output. Bin numbers 97-144 at Lauderdale, 155-271 at West Bank, and 328-471 at Experimental Engineering.

```
.ENDHELP.
```

```
.IFE,FILE(F,..NOT.LO),PO.
```

```
$ACQUIRE,F.
```

```
.ENDIF,PO.
```

```
$RENAME,ZZZZFRD=F.
```

```
$REWIND,ZZZZFRD.
```

```
$COPYSBF,ZZZZFRD,F.
```

```
$ROUTE,F,DC=LP,EC=A9,#UN=UN,#BIN=BIN.
```

```
$RENAME,F=ZZZZFRD.
```

Exhibit 1. PRINT Procedure.

```
.PROC,FILES*M"DO YOU WANT TO",
OPTION=(1"CREATE A FILE?",
2"EDIT A FILE?",
3"PRINT A FILE?").
```

```
.HELP
```

This procedure allows you to create, edit, or print a file.

```
.HELP,1
```

This choice calls the Xedit program to begin writing text on a file.

```
.HELP,2
```

This choice calls up an existing file and allows you to change, add, or delete text using Xedit.

```
.HELP,3
```

This choice allows you to print any of your files.

```
.ENDHELP
```

```
.IFE,OPTION.EQ.1. $BEGIN,CREATE.
```

```
.IFE,OPTION.EQ.2. $BEGIN,EDIT.
```

```
.IFE,OPTION.EQ.3. $BEGIN,PRINT.
```

Exhibit 2. FILES Menu Procedure.

There is an easier way to translate your intention into output in a bin at Experimental Engineering and, generally, to deal with the complexities of our systems. If you

have been following the discussion of procedures in recent *Newsletters*, you might already have written a procedure that prints out files. It might look like that in Exhibit 1.

With procedure PRINT in a file named PROCFIL, you enter the following command at your terminal to print something:

```
/begin,print
```

and the procedure PRINT prompts you for the necessary information:

```
FILE NAME? FILE1
SITE FOR OUTPUT? EA
BIN NUMBER FOR OUTPUT? 350
```

You do not have to remember commands and parameters for those commands, or the order in which to enter them. And if you don't remember the site codes, for example, you simply type a question mark in response to the prompt to elicit the help text.

Once you have written a number of interactive procedures, you may want to group them together and reference them by means of menu procedures. For example, you might have several procedures that deal with files, one that creates a file (the procedure would execute the command XEDIT,filename,C), one that calls a file to edit (the procedure would execute the command XEDIT,filename,P) and one that prints a file. The menu procedure in Exhibit 2 calls all three. Procedure FILES produces the following text on your screen:

```
DO YOU WANT TO
```

1. CREATE A FILE?
2. EDIT A FILE?
3. PRINT A FILE?

```
SELECT BY NUMBER OR TYPE Q TO QUIT?
```

We need only extend the use of menu procedures one more step to dispense with operating system commands altogether. You can create a procedure that causes a master menu to appear on your screen when you log on the system. This menu calls secondary procedures, like the FILES procedure in Exhibit 2, which in turn call interactive procedures, like PRINT in Exhibit 1.

For example, if you commonly deal with files, run programs, inquire about the status of your files, and inquire about your account (and most users do these things), you could construct a procedure like the one called CHOOSE in Exhibit 3. Each option in

```
.PROC,CHOOSE*M "DO YOU WANT TO",
OPTION=(1"WORK WITH FILES?",
2"FIND OUT ABOUT YOUR FILES?",
3"COMPILE/RUN A PROGRAM?",
4"FIND OUT ABOUT YOUR ACCOUNT?",
5"RETURN TO THE OPERATING SYSTEM?").
```

```
.HELP
```

This is a login menu that presents general options for work you want to do on the computer. Typing a question mark after the number of your selection will produce an explanation of that option.

```
.HELP,1
```

This choice calls up a menu that will allow you to create, edit, or print your files.

```
.HELP,2
```

This choice calls up a menu that will allow you to list all your permanent files, list full information about one file, and list information about local files.

```
.HELP,3
```

This choice calls up a menu that allows you to compile and run Fortran or Pascal programs.

```
.HELP,4
```

This choice calls up a menu that allows you to check the limits on your account and to find out accounting information.

```
.HELP,5
```

This choice returns you to the operating system.

```
.ENDHELP
```

```
.IFE,OPTION .EQ. 1. $BEGIN,FILES.
```

```
.IFE,OPTION .EQ. 2. $BEGIN,INFO.
```

```
.IFE,OPTION .EQ. 3. $BEGIN,PROGRAM.
```

```
.IFE,OPTION .EQ. 4. $BEGIN,ACCOUNT.
```

```
.IFE,OPTION .EQ. 5. $REVERT,NOLIST.
```

```
$BEGIN,CHOOSE.
```

Exhibit 3. CHOOSE Menu Procedure.

```
DO YOU WANT TO
```

1. WORK WITH FILES?
2. FIND OUT ABOUT YOUR FILES?
3. COMPILE/RUN A PROGRAM?
4. FIND OUT ABOUT YOUR ACCOUNT?
5. RETURN TO THE OPERATING SYSTEM?

```
SELECT BY NUMBER OR TYPE Q TO QUIT ? 1
```

```
DO YOU WANT TO
```

1. CREATE A FILE?
2. EDIT A FILE?
3. PRINT A FILE?

```
SELECT BY NUMBER OR TYPE Q TO QUIT ? 3
```

```
FILE NAME? FILE1
```

```
SITE FOR OUTPUT? EA
```

```
BIN NUMBER FOR OUTPUT? 350
```

```
DO YOU WANT TO
```

1. WORK WITH FILES?
2. FIND OUT ABOUT YOUR FILES?
3. COMPILE/RUN A PROGRAM?
4. FIND OUT ABOUT YOUR ACCOUNT?
5. RETURN TO THE OPERATING SYSTEM?

```
SELECT BY NUMBER OR TYPE Q TO QUIT ?
```

Exhibit 4. Menu and Interactive Procedures Combined.

CHOOSE references another procedure that calls up a group of similar commands. Note too that by ending the procedure with the command **BEGIN,CHOOSE**, you make the main menu reappear on your screen after other procedures have been called and executed; all your procedures become part of a recursive system.

With all your procedures collected in a file named **PROCFIL**, separated by **EOR** marks, you need to add another procedure called **LOGIN** at the beginning of that file in order to bring up your main menu on the screen when you log on. It could be as simple as this:

```
.PROC,LOGIN.  
$BEGIN,CHOOSE.
```

The operating system looks for a file named **PROCFIL** when you log on and executes procedure **LOGIN** automatically if it appears at the beginning of the file. With log-on, main menu, secondary menus, and interactive procedures in your **PROCFIL**, the interaction in Exhibit 4 would take place from the time you logged on.

This scheme for organizing the operating system is especially useful for beginners. If other people use your account to work on particular projects and deal with only one or two software packages, you could write a log-on procedure and menus that make their work a great deal easier. If you are responsible for teaching novices, even informally, the fundamentals of computing, these kinds of procedures, because they simplify very complex systems, could be useful. And certainly, if you find yourself entering long, repetitive series of commands, you can save yourself the trouble by writing procedures to execute them for you.

The advantages of procedures are clear. With them:

- you can organize the operating system commands into groups that are most important to your work;
- you can simplify the formats and parameter lists of operating system commands down to a single choice among options;
- you have information immediately

available in the help text if you run into trouble; and

- you deal most of the time with natural language rather than the dialect of the operating system.

You can get help with writing procedures by calling the **HELP-line**, 376-5592. The **NOS 2 Reference Set**, Volumes 2 and 3, provides detailed explanations. (Parker Johnson)

## HELP-line

### HOURS EXTENDED

UCC's **HELP-line** is now open a full twelve hours each weekday, from 7 a.m. to 7 p.m. Since some periods will be busier than others, we have installed additional phones so more than one consultant can be available when necessary. The phone number remains 376-5592.



## Math and Statistics Libraries

### EISPACK VERSION 3

On Monday, September 3, version 3 of **EISPACK** will become the current version on the **CYBERS** and **CRAY**. **EISPACK3** has a limited set of modifications to the second edition of **EISPACK**. The modifications eliminate the machine dependent constants and reduce the probability of underflow/overflow difficulties. They also may improve the

execution time efficiency of a few subroutines. They do not, however, introduce any new capabilities, nor do they change any calling sequences. The existing writeup is unaltered.

## Consulting

### STATISTICS PHONE CHANGE

The phone number for the statistics **HELP-line** is now 376-1761. The hours remain 1 to 2 p.m., Monday through Friday.

## Short Courses

### LOTUS 1-2-3

We will offer an additional section of our Lotus 1-2-3 short course from 2:15 to 4 p.m., August 20 and 22 (Monday and Wednesday). The price of the course is \$25 for students, \$35 for staff, and \$60 for non-University participants. You can register for the course in our Reference Room, 140 Experimental Engineering. The class is limited to twenty participants.

## Computer Store

### THE PRICE OF SUCCESS

UCC's Computer Store recently became part of the University bookstore operations. Complete responsibility for the Store and its policies is now the province of the University Bookstores.

The Store itself is now located at the Electronics Desk in the Minnesota Book Center in Williamson Hall. As a result of this move, you can no longer charge purchases to your user number; you must pay with cash, check, or University journal voucher. The only computer-related item not available at Williamson is magnetic tape. You can still purchase such a tape at our Lauderdale facility.

Short course registration now takes place in our Reference Room, 140 Experimental Engineering.

## Grants for Research

### ALFRED P. SLOAN FOUNDATION

In its fifty year history, the Alfred P. Sloan Foundation has awarded grants totaling more than \$367 million. In 1983, the foundation provided grants to approximately 150 institutions that totaled \$15.4 million.

The foundation's grant programs support research in the natural sciences, mathematics, economics, and technology. In addition, the foundation supports research fellowships at both the pre- and post-doctoral levels. In 1982, the foundation launched its New Liberal Arts program; its purpose was to incorporate applied mathematics and technology into a wide range of college courses. After awarding grants to thirty small colleges, the foundation expanded the program this year to include predominantly black colleges, and in 1985 plans to make grants available for university-based projects.

The foundation has no deadlines or application forms. A brief letter of inquiry, rather than a fully developed proposal, is often an applicant's first step. Letters of application should include the work you propose to do, information on its cost and duration, and, in the

case of new applicants, the tax status of the organization that would administer the grant.

Grants of \$20,000 or less are usually made by the foundation's staff. Proposals that request more than \$30,000 are reviewed five times each year by the foundation's board of trustees.

For further information and copies of the foundation's 1983 annual report, contact:

Alfred P. Sloan Foundation  
630 Fifth Avenue  
New York, New York 10111  
(212) 582-0450

*(Federal Grants  
and Contracts Weekly)*

## All Systems Bulletins

### LABOR DAY HOURS

Our operating hours during the Labor Day weekend will be as follows:

	DOWN		UP
CRAY	Midnight	Sun. 9/2	6 p.m. Mon. 9/3
CYBER CA	1 a.m.	Mon. 9/3	6 p.m. Mon. 9/3
CYBER ME	3:30 a.m.	Mon. 9/3	6 p.m. Mon. 9/3
CYBER MD	Midnight	Sun. 9/2	6 p.m. Mon. 9/3
VAX	1 a.m.	Mon. 9/3	6 p.m. Mon. 9/3
Exp. Eng. I/O station	4 p.m.	Sat. 9/1	8 a.m. Tue. 9/4

### FOR SALE

Terak 8512 microcomputer. Eight-inch, 8510 dual disk drive with double density option. Three years old. \$2500. Call Tom Stein, 376-9049.

## PHONE NUMBERS

<p>Access:</p> <p>CYBER(CA)—10, 30 cps .....376-5730              —120 cps .....376-5706</p> <p>MERITSS(ME)—10, 30 cps .....376-7730              —120 cps .....376-7120</p> <p>VAX/VMS(VA)—(autobaud) .....376-9770</p> <p>Budgets .....373-2521</p> <p>Computer-Aided Instruction .....376-2975</p> <p>Computer Hours (recorded message) .....373-4927</p> <p>Consulting</p> <p>    HELP-line .....376-5592                  7 a.m.-7 p.m., Monday-Friday</p> <p>    Business Data Products .....376-1761                  1-3 p.m., Monday-Friday</p> <p>    Statistics Packages .....376-1761                  1-2 p.m., Monday-Friday</p> <p>    Data Bases .....376-1761                  10-11 a.m., Monday-Friday</p> <p>    Microcomputers .....376-4276                  10-12 a.m. and 2-4 p.m., Monday-Friday</p> <p>    Humanities Computing .....376-2944                  2-3 p.m., Tuesday &amp; Wednesday</p> <p>    Text Processing .....376-2944                  1-4 p.m., Monday-Friday</p> <p>Contract Programming .....376-1764</p> <p>Data Base Applications .....376-1764</p> <p>EDUNET Liaison .....373-5780</p>	<p>Engineering Services .....376-1023, 376-8153</p> <p>Equipment Purchase/Information .....376-8153</p> <p>Experimental Engineering I/O .....373-4596</p> <p>Graphics Software .....376-5592</p> <p>HELP-line .....376-5592              7 a.m.-7 p.m., Monday-Friday</p> <p>HOURS-line (recorded message) .....373-4927</p> <p>Information, Experimental Engineering .....373-4360</p> <p>Information, Lauderdale .....373-4912</p> <p>Instructional Labs .....376-2703</p> <p>Instructional Services .....373-7745</p> <p>Lauderdale Computer Room .....373-4940</p> <p>Lauderdale Services .....373-4995</p> <p>Lauderdale Services Manager .....373-7538</p> <p>Lauderdale Users' Room .....373-4921</p> <p>MECC Liaison .....373-7745</p> <p>Newsletter Subscription .....373-4912</p> <p>Permanent File Restoration .....376-5605</p> <p>Professional Services Division (PSD) .....376-1764</p> <p>Project Assistance .....376-1764</p> <p>Reference Room .....373-7744</p> <p>Remote Batch (RJE) Services .....376-2703</p> <p>Short Courses .....376-8806</p> <p>Shuttle Bus Service .....376-3068</p> <p>System Status (recorded message) .....373-4927</p> <p>Tape Librarian: see Lauderdale Services</p> <p>Text Processing Services .....376-2943</p> <p>User Accounts .....373-4548</p>
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## OPERATING HOURS

	CYBER (CA)	Low rate	CRAY (CR)	MERITSS (ME)	VAX (VA)
M-F	7 a.m. - 4 a.m.	8 p.m. - 4 a.m.	7 a.m. - midnight	7:45 a.m. - 3:30 a.m.	8 a.m. - 6 a.m.
Sat	4 a.m. - 5:15 p.m.	4 a.m. - 5:15 p.m.	7 a.m. - 5 p.m.	7:45 a.m. - 3:30 a.m.	24 hours
Sun	4 p.m. - 1 a.m.	4 p.m. - 1 a.m.	4 p.m. - midnight	4 p.m. - 3:30 a.m.	24 hours

## PUBLIC LABS—TWIN CITIES CAMPUS

Location	Batch	Interactive	Micro	Location	Batch	Interactive	Micro
<i>East Bank</i>				<i>West Bank</i>			
Arch 160		X	X	BlegH 25		*	
CentH		X		BlegH 90	X		
ComH		X		BlegH 140		X	
DiehIH 270, 207		X		MdbH		X	
EltH 121, 125		X		OMWL 2		X	
EltH N640	X			SocSci 167			X
Exp Eng 140		*					
FolH 14, 14a	X	X*	X	<i>St. Paul</i>			
LindH 26	X	X		BaH		X	
MechE 308		X		ClaOff 125	X	X	
Physics 69		*					
SanfH		X					
TerrH		X					
Vinch 4		X					
WaLib 204		X					

\* Research cluster; access to CYBER CA and VAX/VMS  
 X in interactive column indicates access to MERITSS

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Michael M. Skow, Acting Director

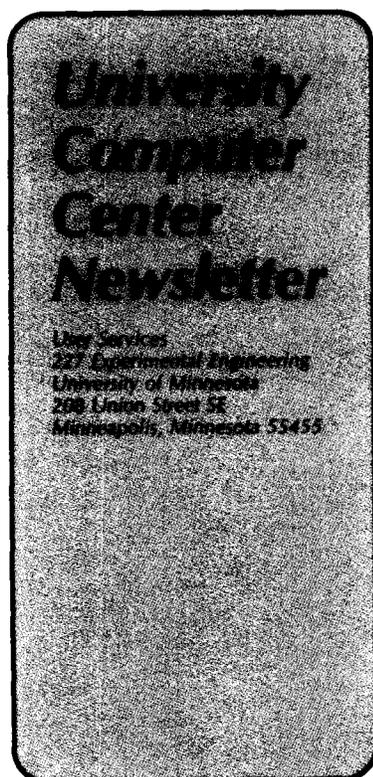
The *UCC Newsletter* is published monthly by the University Computer Center. Deadline for articles is the 10th of the month preceding publication; deadline for short announcements is the 15th. The *Newsletter* is edited and coded for typesetting at the Computer Center, then typeset on a Linotron 202 and printed at the University of Minnesota's Printing and Graphics Arts Department.

Comments, suggestions, articles, and announcements should be directed to the editor, 227 Experimental Engineering, (612) 376-1491.

The University of Minnesota adheres to the principle that all persons should have equal opportunity and access to facilities in any phase of University activity without regard to race, religion, color, sex, national origin, handicap, age, or veteran status.

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