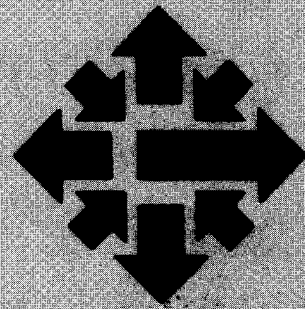


University Computer Center Newsletter

University of Minnesota
Twin Cities

January 1983
Volume 17, Number 1



Notes from the Director

In an attempt to discover where the University Computer Center is going in these times of technological innovation and economic uncertainty, we spoke with UCC's director, Dr. Peter Patton, about recent developments and future plans as he sees them. We brought along questions we'd heard voiced by users and staff members, as well as a few of our own.

When asked about UCC's purchase of the CRAY-1 supercomputer (which indicated to some people a commitment to a few large users at the expense of many smaller ones), Dr. Patton reiterated his commitment to the entire University community and elaborated on the primary reason for the CRAY's purchase: it is an extremely cost-effective machine. Not only can it solve large problems too difficult (or time consuming) for other machines to handle, but it can also solve small problems with super efficiency. All those who use the CRAY should find their costs cut significantly.

Dr. Patton believes that computing's future lies in two areas—supercomputers like the CRAY and microcomputers, which will soon have the capacity of small mainframe computers. The demands on UCC services will shift even more into the user services area. Many people untrained in computing are purchasing personal computers, some of them with extremely sophisticated capabilities. Part of UCC's resources may be devoted to "start-up" support and consulting: helping those who need tutorial assistance



Peter Patton

when they purchase a micro-computer.

Our short courses, too, will change their focus as we do our best to anticipate the needs of our user community. And it's also possible that we may have to restructure our documentation so that essentially the same material is available for different audiences whose computing knowledge varies widely.

The Computer Center has experienced serious cutbacks, like all units of the University. Our funding from the University has always been limited to educational computing, and recent University retrenchment has eliminated funds for research grants to promote new usage. Thus UCC is seeking other kinds of income so that we can continue to grow and to serve our users as well as we possibly can. Public service research computing on the CRAY, for instance, generates income that can be put to work to enhance our facilities and services for all users and provide funds

for unsponsored research grants to faculty.

In addition to the income we generate, our plans for the future include assisting researchers in all fields to obtain grants that will pay computing costs for their projects. This assistance may take the form of inserts for grant proposals that outline our costs and services, and projects like our *Grant Proposal Primer*, which will aid researchers in putting together proposals that include computing.

In the long run Dr. Patton hopes that the University Computer Center will become involved in a government-university-corporate research consortium that promotes technological innovation in a variety of areas, including his own research interest, application generators, a new kind of software that develops specific applications without custom programming.

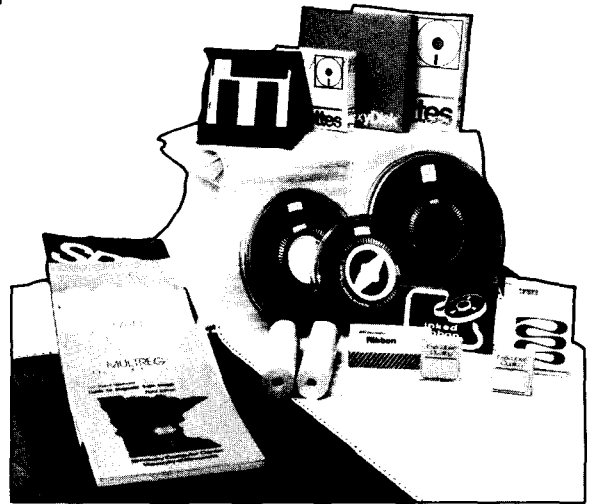
Dr. Patton remains optimistic about the future of computing in general and of UCC in particular. He believes that UCC has a special responsibility to the total University community, both those who demand stability and those who seek innovation: maintaining the tension between those two forces provides an atmosphere conducive to both creativity and productivity. By developing ways to support research that encourages innovation, while at the same time providing the necessary stability for successful operation, he believes that UCC will continue to offer the hardware,

Patton to 6

COMPUTER STORE

for all your computing needs

- floppy disks, cards, paper
- short course registration
- microcomputer access cards
- software
- documentation

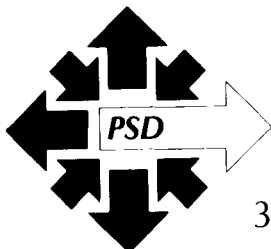


**211 Experimental Engineering
East Bank, University of Minnesota
373-4877 9-3 M-F, 5-7 M-Th**

**DOUBLE AND SINGLE SIDED DISKS
5¼ and 8 inch sizes
double density
SUPER LOW PRICE**

P ROFESSIONAL S ERVICES D IVISION

graphics development:	computer graphics for data presentation
statistical analysis:	full range of services available
system analysis and design:	analysis of existing systems; design of new systems
financial analysis:	forecasting, accounting
data base development:	design and implementation using state-of-the-art technology
tape conversion:	conversion of off-site tapes to UCC internal format
customized programming:	COBOL, FORTRAN, Pascal for virtually any application
research applications:	scientific or social research environments



If you qualify for a University Computer Center account, and are interested in our services, please contact us.

376-1764 • 227 Experimental Engineering • 208 Union St. S.E.

The Fiscal Picture at UCC

Like many University departments, UCC prepares a budget during spring quarter for the next fiscal year. In early 1981, we anticipated that new services (CRAY and VAX) we would offer in the 1982 fiscal year would allow us to continue budgeting a 20% increase in revenues and corresponding expenses. The projected increase was below the 22% average we had achieved in the previous five fiscal years.

Needless to say, the recession and cutbacks in grants to universities changed the final picture of fiscal 1982: instead of increasing by 20%, revenues were down five percent (a revenue difference of \$1,275,000) from fiscal 1981. As we became aware of the problem, we reduced expenses and used a hiring freeze to cut full time equivalent employees from 148 at the beginning of the fiscal year to 128 at the end. These reductions in expenses (about \$725,000) left a deficit of \$550,000. In addition, the expense of the CRAY installation (\$325,000) made the final fiscal 1982 deficit approximately \$875,000.

To generate the revenues we needed to eliminate that deficit during fiscal 1983, we prepared and are executing an austere budget. This means that several long-term projects such as a laser printer and comprehensive broadband communications must be postponed until the next fiscal year. We are still implementing projects, such as lower maintenance costs and phone service charges, that will reduce final expenses. In addition, many standard UCC projects and services are being done on a "best effort" basis by our reduced staff; as a result, software installation dates have been delayed and other services are more limited or slower than in past years.

The good news is that for the first half of fiscal 1983, we have been making our \$75,000/month debt retirement payments and we have sold our VAX/UNIX system for \$150,000 to ensure that the 1982 deficit will be eliminated. We are

Exhibit 1. Summary of equipment allotments to CYBER system and computing grants

Summary fiscal years	Non-recurring equipment fund allotment	Computing grants for research	
1967-69	\$420,000	\$540,941	
1969-71	840,000	648,572	
1971-73	730,000	485,814	
1973-75	450,000	301,019	
1975-77	400,000	389,345	
1977-79	250,000	414,442	
1979-81	200,000	353,296	
1981-82	100,000	188,513	left to grant
Total	3,390,000	3,321,942	68,058
1982-83 (est.)	0	188,000	
	3,390,000	3,509,942	

looking for additional ways to lower our CYBER service costs and to pass on such savings to you. To achieve this end, we have sent out a request for bid on a CYBER mainframe to replace the dual CYBER 730/74 sometime this spring or early summer. If revenues continue at the current pace, we should be able to move on to some of our deferred projects and services.

Research Funding Grants

UCC's grants program for research computing has been based on the non-recurring equipment fund that the University provided to University Computer Services. That is, the University Computer Center receives an allotment specifically for equipment; in return it provides an equivalent dollar value of service at no cost to research users. The total value of the grants to users can be equal to the accrued value of the non-recurring equipment allotment. A cumulative summary appears in Exhibit 1.

Starting in fiscal 1983 (July 1982), the non-recurring equipment fund allotment has been eliminated as a result of budget cuts. Our University Computing Services director, Dr. Frank Verbrugge, in consultation with his Computer Advisory Committee and computer center directors, has looked to other sources of revenue to fund research computing at the University. They determined that differential revenue (the difference between the

charge for public service use of the University's computers and internal use) could finance these grants until a more solid fiscal arrangement could be made. Exhibit 2 delineates this increase in revenues from 1977-1982. For UCC, this differential revenue has been steadily increasing since the installation of the CYBER 172 in 1978. We previously used these funds to provide subsidies to instructional computing and for innovative new projects that did not have committed revenues. The use of this differential for research grants sets up a causal relationship that means more research grants will be available only if more public service use is made of the University's computers.

Exhibit 2. Increase in Differential revenue.

Fiscal year	Differential revenue
1977-78	\$ 48,382
1978-79	113,298
1979-80	161,360
1980-81	187,819
1981-82	210,825

University Supported Use and Services

Direct University support supplies about 20% of our income. This income is used only for educational purposes and is a major component in making UCC a University-wide facility. Most of this support takes the form of batch and interactive computer use in undergraduate classes and in individual graduate thesis

Exhibit 3. University support for educational computing. (Table in \$1000 units)

	1980	1981	1982	1983 (est.)
Support funds	1158	1222	1459	1639
Costs:				
Computer Use				
MERITSS service (number of ports)	390 (130)	540 (180)	624 (208)	547 (228)
Graduate Thesis Grants (number)	282 (965)	312 (1142)	397 (1353)	350 (1700)
Batch classroom & development accounts	157	151	112	200
Computer Services				
Micro support	95	105	115	140
CAI development	125	115	105	0
Humanities & curriculum development	200	100	70	75
Student consulting, short courses	50	55	60	65
Pascal & other student languages	50	50	0	0
Instructional support	100	100	90	80
Overhead costs	207	175	170	150
Total costs	1656	1703	1743	1607
Difference: Overage/(deficit)	(498)	(481)	(284)	32

grants. These costs have increased in recent years (see Exhibit 3). Graduate student thesis grants, for example, are much more likely to come close to or reach our grant limit.

But as a result of University-wide cutbacks, our support from the University has not kept pace

with increased costs. As a result, we have had to eliminate or modify various services. Computer assisted instruction (CAI) development was eliminated at higher University levels, but we moved our CAI personnel to our microcomputer group to continue CAI support at a lower level.

And the \$32,000 "overage" we anticipate in 1983 is already budgeted as educational computing's contribution to help eliminate the larger UCC deficit discussed above.

(Lawrence A. Liddiard)

SYSTEM NEWS/NOTES

Grants for Research

To start off the new year right, here's our monthly report on where the cash is—places where you might find the funds necessary to finance your research.

- The National Science Foundation (NSF) is accepting proposals for special research initiation awards for new investigators in Information Science and Technology.

- Industry/university cooperative research projects and centers are considered by NSF anytime.
- Proposals for university or industry-university research by new faculty in engineering may include equipment and computer time costs. NSF's proposal target date is January 15.
- Projects that use computers to teach modern foreign languages

more effectively and to analyze international issues are encouraged by the Education Department under Undergraduate International Studies and Foreign Language grants.

- Guidelines for the National Institute of Health Training in Health Sciences and Computer Technology are being rewritten and will be available in February or March 1983.

(Vicky Walsh)

CORRECTION

The writeup that provides details of the UCC MINNLIB library's conversion to the CRAY is WRITEUP(CRAY= UCCLIBS) not WRITEUP(UCCLIBS) as announced in the November Newsletter.

VAX Service

MOVING NOTES

Our VAX/VMS computer, currently located in Shepherd Labs, will move to our Lauderdale facility on the weekend of January 29-30. The system will not be available for use at that time. It will be brought down early Satur-

day and should be reassembled by Sunday night. We hope to resume normal operations on Monday, January 31. Telephone numbers for interactive access will not change. Site locations for routed output (Shepherd Labs/Lauderdale) may change. A Systems Note with more information will be available in mid-January.

IMS Journal

NEW VERSIONS OF SYSTEM 2000 AND SIR TO BECOME CURRENT

It is time to start converting your System 2000 2.60 data base applications to version 2.80. For Quest (Natural Language) users this requires only logging into the new version. PLI users must re-compile their programs using the new PLEX precompilers. For more details, obtain the Version 2.80 newsletter available at the computer store. Version 2.80 will become current in September 1983.

SIR version 2 is the new, enhanced version of the SIR DBMS package. To use version 2 on existing SIR applications, a conversion utility called transport must be run. Current procedures must be converted by hand. Complete information on conversion and the transport utility is available at the computer store. Version 2 will become current in June 1983.

For instructions on how to access these products, see Exhibit 4.

SIR LOCAL USERS GROUP MEETING

A preliminary meeting to set up a SIR users group will be held Wednesday, January 26th from 4-5 p.m. in 313 Akerman Hall. Anyone who is currently using or who plans to use the SIR data base management package is welcome.

RECORD MANAGER CHANGES

We will hold a special seminar to describe the conversion procedure needed to convert from CYBER Record Manager Advanced Access Methods Version 1 (AAM1) to Version 2 (AAM2) at 2:15 p.m., February 4, in 15 Architecture.

At the present time, AAM1 and the newer AAM2 are coresident in the system. (COBOL 5 programs have been using AAM2 for years.) But during spring break, AAM2 will be made the default package across the whole system. Also, when the NOS 2 products are installed, AAM1 will no longer be supported. AAM1 will be com-

Exhibit 4. How to access System 2000 and SIR products.

System 2000		
Version	Immediate Access/SC	COBOL/FORTRAN Interface
2.60	S2000.	PLIFOR, PLIFORS, PLIFORL PLICOB, PLICOB, PLICOBL
2.76	FETCH,S2000. S2000.	- NONE -
2.80	FUTURE,S2000. S2000.	FUTURE,PLXFOR. PLXFOR. FUTURE,PLXFORS. PLXFORS. FUTURE,PLXFORL. PLXFORL. FUTURE,PLXCOB. PLXCOB. FUTURE,PLXCOBS. PLXCOBS. FUTURE,PLXCOBL. PLXCOBL.

SIR		
Version	Interactive	Batch
1.1I	PAST,SIR. SIR,IA.	PAST,SIR. SIR.
1.1N	SIR,IA.	SIR.
1.1N	FUTURE,SIR. SIR,IA.	FUTURE,SIR. SIR.
2.1	FETCH,SIR. SIR,IA.	FETCH,SIR. SIR.

pletely removed from the system in October 1983.

Conversion from AAM1 to AAM2 is simple and can be done with the FORM utility. The seminar will include several examples of file conversion.

(Steven A. Reisman)

COBOL 4 TO DISAPPEAR

COBOL 4 will be removed from the CYBER systems in October 1983. All existing programs must be converted to use COBOL 5 by that time. Control Data Corporation terminated support of COBOL 4 in October 1978. We have continued to keep it around because of the instability of the earlier releases of COBOL 5. For the past year or so, COBOL 5 has shown excellent stability; therefore, we, too, will terminate COBOL 4 support.

BUSINESS PRODUCTS RELEASE SCHEDULE

In the May 1982 *Newsletter*, we published a time table for upgrading the CDC business products including CYBER Record Manager. It also involved changing from NOS 1 products to NOS 2 products.

There has been a delay in obtaining the NOS 2 software, and consequently we're modifying our schedule.

January 1983: NOS 1 release level 552 products are current, and NOS 1 release level 573 products are available as FUTURE. Level 528 products are still available as PAST.

March 1983: During spring break, the 573 products will become current, the 552 products will be removed from the system. At that time the NOS 2 products will be available as FUTURE.

June 1983: NOS 2 products will become current and NOS 1 level 573 products will become PAST.

October 1983: COBOL 4 and Record Managers's Advanced Access Methods Version 1 will be removed from the system. (See the accompanying article.)

COBOLTS TO DISAPPEAR TOO!

Several years ago we modified our CYBER interactive system to create a COBOL subsystem. This provided for interactive entry and execution of free-field COBOL5 source programs. Use of this system has been very low. Thus, we will be removing it from the system during spring break in March.

CRAY News

FUTURE AND PAST

We now have a FUTURE and PAST control statement feature on the CRAY-1.

This mechanism, similar to that on the CYBERs, lets us establish a "life cycle" for different versions of software products. At the same time, it makes it easy for you to access a new or old product, along with all the special versions of libraries and loaders that may go with it, with one simple control statement.

We install new versions of software, perhaps still undergoing testing, as FUTURE products. You establish this software as your working version with a simple COS control statement: **FUTURE,productname**. Similarly, we keep old versions of software as PAST products for the few users who may still require them until they are retired altogether.

To access the FUTURE version of

the CRAY FORTRAN compiler (CFT version 1.10) and the FUTURE library and loader necessary to run it, for example, you would use the following control statements.

```
/JOB  
/NOSEQ  
JOB.  
/ACCOUNT.  
FUTURE,CFT.  
CFT.  
LDR.  
/EOR  
program
```

This example shows a job file sent to the CRAY with the interactive SUBMIT command. It uses reformatting directives under NOS 1.3 (called NOS 485 or "release 4"). The control statement structure will change slightly when we go to NOS 1.4 (called NOS 552 or "release 5"). See WRITEUP(CRAYINF) for more information.

The CRAY job logfile states which versions of all applicable software it has accessed. These

FUTURE and PAST control statements supercede the calling sequences for future and past versions of CFT shown in previous *Newsletters*.

FUTURE and PAST entries are available for CFT and Pascal. If there are other products you think would make appropriate PAST and FUTURE entries, please let us know.

(Susan Steffen, 376-5602)

All Systems Bulletins

USERS' MEETING

We will hold our first general users' meeting of 1983 on Wednesday, February 9, from 3:15-5 p.m., in Mayo 100 on the Minneapolis east bank campus. Agenda items to date include system upgrades (Lawrence Liddiard), budget and the CRAY-1 (Peter Patton, director), and user services (Richard Hotchkiss). A question-and-answer session will follow the presentations.

BIBLIOGRAPHERS UNITE!

An open meeting to discuss bibliographic data base needs will be held Thursday, January 20, 1983 from noon-2 p.m., in 113 Shepherd Labs. Call Vicky Walsh (373-5780) for more information.

ST. PAUL COMPUTER CENTER SHORT COURSES

The St. Paul Computer Center will offer three short courses this quarter. The first is a single session orientation to the St. Paul Computer Center. The second, SAS, covers the SAS statistical analysis system, a comprehensive

statistical package available on SPCC's IBM 4341. The third course, MUSIC, introduces the MUSIC interactive operating system, which allows you to edit and save files, submit batch jobs, or run jobs interactively. For those who would like to access SAS remotely via an interactive terminal, MUSIC allows you to submit jobs to SAS and get the output back on a disk file. The course schedule is as follows for the Minneapolis campus:

```
SPCC Orientation  
Jan. 20 (Th) 3:15-5 p.m.  
Architecture 35  
SAS  
Jan. 24-28 (MWF) 3:15-5 p.m.  
Architecture 10  
MUSIC  
Jan. 31-Feb. 4 (MWF) 3:15-5 p.m.  
Architecture 10
```

There is no charge for any of these courses. If you would like to be added to SPCC's mailing list, please call our main office, 373-0987. SPCC hours are 7 a.m.-10 p.m. Monday through Friday, and 8 a.m.-4:30 p.m.

Saturday. The user room is located in 90 Coffey Hall; the HELP-line phone number is 376-4602 (10 a.m.-4 p.m.).

(Ron Schultz, 373-0987)

SLIDES ONLY \$5

As a result of your interest in and use of our advanced graphics capabilities on the VAX/VMS system, we will continue our reduced rate policy on D47 color slide processing for an indefinite time. The cost is only five dollars for slides produced on the Dicommed with the ENQUEUE command. Take advantage of this price reduction on high-quality graphic output. You'll be pleased with the results.

Patton from 1

software, and services our community needs.

If you have questions about what's happening at UCC, come to our first users' meeting of 1983 on February 9. See the notice on page 6 of this issue.

(Chris Gordon & Vicky Walsh)

Winter Quarter Short Courses

NOTE: Caret (^) indicates a new course.

HOLIDAY: Monday, February 21 is a University holiday; no classes will be held.

REGISTRATION: You can register for courses at the UCC Computer Store, 211 Experimental Engineering. Mail registrations are accepted for an additional \$1 fee per class.

A self-service terminal for registration is located outside the Computer Store. You may pay course fees with cash, check, University journal voucher, or charge them to your non-instructional UCC user account.

If you have questions about our short courses or about registration, call Jerry Stearns, 376-8806.

INTRODUCTORY COURSES

PRICES: U. Student \$10, U. Staff \$20, Non-University \$30

010	Introduction to Computer Terms Jan. 5-7 (WThF)	3:15-5 p.m.
^020	A Taste of Computing Jan. 10-14 (M-F)	3:15-5 p.m.
050	NOS (CYBER Operating System) Jan. 17-Feb. 2 (MWF)	3:15-5 p.m.
080	Introduction to Microcomputers Jan. 18-Feb. 1 (TTh)	3:15-5 p.m.
055	Interactive System Commands Feb. 1-10 (TTh)	3:15-5 p.m.
040	Introduction to VAX/VMS Feb. 7-16 (MWF)	1:15-3 p.m.
^100	Text Editing at UCC Feb. 14-18 (MWF)	3:15-5 p.m.
150	Introduction to Programming Feb. 15-Mar. 3 (TTh)	3:15-5 p.m.
^110	Text Formatting at UCC Feb. 22-Mar 3 (TTh)	3:15-5 p.m.
130	XEDIT Feb. 23-Mar. 4 (WF)	2:15-4 p.m.

ADVANCED COURSES

PRICES: U. Student \$20-30, U. Staff \$30-50, Non-University \$50-100

610	Intermediate FORTRAN Jan. 17-28 (MWF)	3:15-5 p.m.	\$25-\$35-\$60
640	Beginning Pascal Jan. 18-27 (TTh)	3:15-5 p.m.	\$20-\$30-\$50
650	COBOL Jan. 18-Feb. 18 (TTh)	3:15-5 p.m.	\$30-\$45-\$70
520	SIR (data base management) Jan. 31-Feb. 11 (MWF)	3:15-5 p.m.	\$30-\$40-\$60
530	SPSS (statistical package) Feb. 7-10 (MTWTh)	2:15-3:30 p.m.	\$25-\$40-\$65
645	Advanced Pascal Feb. 8-17 (TTh)	3:15-5 p.m.	\$20-\$30-\$50
510	Intro to System 2000 (data base management) Feb. 14-Mar. 4 (MWF)	3:15-5 p.m.	\$30-\$40-\$50
580	Graphics Feb. 15-24 (TTh)	3:15-5 p.m.	\$20-\$30-\$60

A SPECIAL FREE SEMINAR will be held to describe how to convert from CYBER Record Manager Advanced Access Methods Version 1 to Version 2. It will meet February 4, from 2:15-4 p.m., in Architecture 15. The seminar will include several examples of file conversion. The affected products are available on the CYBERs as FUTURE, and will be implemented as CURRENT during spring break. Steven Reisman, instructor.

COURSE DESCRIPTIONS

Many UCC Short Courses have prerequisites. Without prerequisite classes, or an equivalent background, you may not be able to comprehend the material and keep up with the instructor's presentation. This knowledge is your responsibility. The instructor will not be able to slow down because of a participant's lack of

background. These course descriptions also list any UCC documents given free to participants in each course.

INTRODUCTORY COURSES

010 INTRODUCTION TO COMPUTER TERMS

Introduces the neophyte to the meanings and uses of basic com-

puter terms, taken from a wide disciplinary range including software and hardware, applications, languages, data communications, and terminals. This course should be taken by the novice before any other UCC Short Courses.

020 A TASTE OF COMPUTING

Everyone should attend the first

session, then choose other sessions according to your computing needs.

DAY 1: Facilities and Services—Richard Franta, instructor. Equipment, terminal locations, user accounts, job submissions, the Computer Store, necessary forms, etc. Any potential user of our systems should attend this session. *UCC's Guide to CYBER Batch Computing*, *Guide to CYBER Interactive Computing*, and *Facilities and Services Guide* are included.

DAY 2: Programming Languages—Andy Mickel, instructor. Information and history of programming languages in general. What programming languages are available on which systems; which languages are best suited for what kind of specific applications; languages taught in Short Courses.

DAY 3: Math & Engineering Programs—Mike Frisch, instructor. Mathematics and engineering programs and libraries at UCC; what they are, where they are available, and a taste of how to use them.

Statistical Packages—Patricia Bland, instructor. General statistical packages and specialized program applications; what packages are available on which systems, and what they can do.

DAY 4: Data Base Management Systems—Cheryl Vollhaber, instructor. Discussion of the two major data base packages available on our systems—System 2000 and SIR—and what they can do. Differences between them, and what kind of situations for which each is best suited. Where to go for help, and information on the Short Courses for each package.

Graphics—John Cornelison, instructor. An introduction to graphics facilities and services at UCC. What packages are available on which systems, and their capabilities; which packages are best suited to particular applications; how much computer background knowledge is necessary.

DAY 5: Text Processing—Vicky Walsh, instructor. Overview of text processing facilities at UCC; text editing, text formatting, and programs available to perform each task; which system is best suited to a particular type of text processing; output devices available; Short Courses offered to assist in learning text processing on our systems.

Non-Traditional Computing—Vicky Walsh, instructor. Uses of computers in non-math/science fields and the humanities. The emphasis is on "word-crunching" or non-numerical applications of computers to Liberal Arts or similar problems. Discussion of the major analysis packages available at UCC, and which packages could be used for what kind of problems.

040 INTRODUCTION TO VAX/VMS

VMS operating system overview: command syntax, file structure and management, system utilities (HELP, MAIL, etc.), logical names and symbols, procedure files and submitted batch jobs, program development, tape usage. Prerequisites: UCC introductory courses through "Intro to UCC" or equivalent knowledge.

050 NOS (CYBER Operating System)

Introduction to the hardware, software, commands, and conceptual background to the CDC Network Operating System. Topics covered include: system configuration, files and jobs, permanent files, program execution, tapes, and specialized terms and control language. "Intro to Computer Terms" and "Intro to UCC" attendance assumed.

055 INTERACTIVE SYSTEM COMMANDS

Discussion of CYBER interactive system concepts of primary file, TELEX, interactive command processing, notes and warnings about use of the system. Intended for the interactive user with limited experience. *UCC's Guide to CYBER Interactive Computing* and *Guide to CYBER Batch Computing* included.

080 INTRODUCTION TO MICROCOMPUTERS

A general introduction to today's personal microcomputers. Covers terminology and a short history of both the hardware and software. Also an overview of commercially available machines, peripherals, and software. Intended for non-computer people learning how to use micros or thinking about purchasing one.

130 XEDIT

Overview of XEDIT, the editor on the CYBER systems: XEDIT is a line-oriented editor that enables you to create a file, as well as add, delete, locate, change, and modify lines within the file. The file can contain any information, whether text, a program, or data. Attendance at "NOS" and "Interactive System Commands" is assumed. *XEDIT User's Guide* included with course.

150 INTRODUCTION TO PROGRAMMING

Assumes no previous knowledge of programming. Will teach the basic concepts of problem solving with computers: how to define and break down problems, how to create algorithms for their solutions, and convert algorithms into programs using structured, top-down approach. Does *not* teach a particular programming language.

100 TEXT EDITING AT UCC

First session discusses basic concepts of text editing on computers, applicable to any system, covering distinction between line and screen editors, with an introduction to the CYBER editor XEDIT used for text processing applications. Following elective sessions cover other UCC editors: EDT on VAX/VMS, and MMOS and UCSD Pascal editors for micros.

110 TEXT FORMATTING AT UCC

First session covers basic concepts and techniques of text formatting on computers, with discussion of printing devices available at UCC. Following elective sessions present overviews of specific text formatting programs (Scribe, Prose, and Wordstar),

discussion of program use, capabilities, examples of text files and formatted output, document design. *Prose Manual, Scribe Classnotes, and Scribe at UCC* included.

ADVANCED COURSES

510 INTRODUCTION TO SYSTEM 2000 (data base management system)

Design and implementation of System 2000 data base management system. Topics include the Immediate Access Feature, backup and recovery methods, the Queue Access module, and other S2000 aids. Assignments allow students to create and interact with S2000 data bases. CYBER introductory courses or equivalent knowledge assumed.

520 SIR (Scientific Information Retrieval)

A case-oriented, self-contained data base management system that can interface data with both SPSS and BMDP statistical packages. Discussions include data definition, modification, manipulation, and report generator feature, along with respective command types. *SIR Reference Manual* is available at UCC Computer Store.

530 SPSS (statistical package)

Basic structure, job setup, and required statements; data manipulation and selection, commands that control system and internal files, SPSS On-Line interactive version and its differences from batch version. Introductory courses through NOS or equivalent knowledge assumed.

610 INTERMEDIATE FORTRAN

In class exercises and programs emphasize solving problems using FORTRAN-77. Topics include formats, files, multi-dimensional arrays, and subprogram use. Prerequisite: Beginning FORTRAN or equivalent knowledge.

640 BEGINNING PASCAL

Introduces the Pascal programming language. Topics include program organization, control, and simple data types. Examples are presented and problems assignments given. No programming experience is necessary, but introductory courses, and familiarity with UCC systems or equivalent knowledge is assumed. *Pascal 6000 Writeup* included with course.

645 ADVANCED PASCAL

Prerequisite: Beginning Pascal, or equivalent previous experience

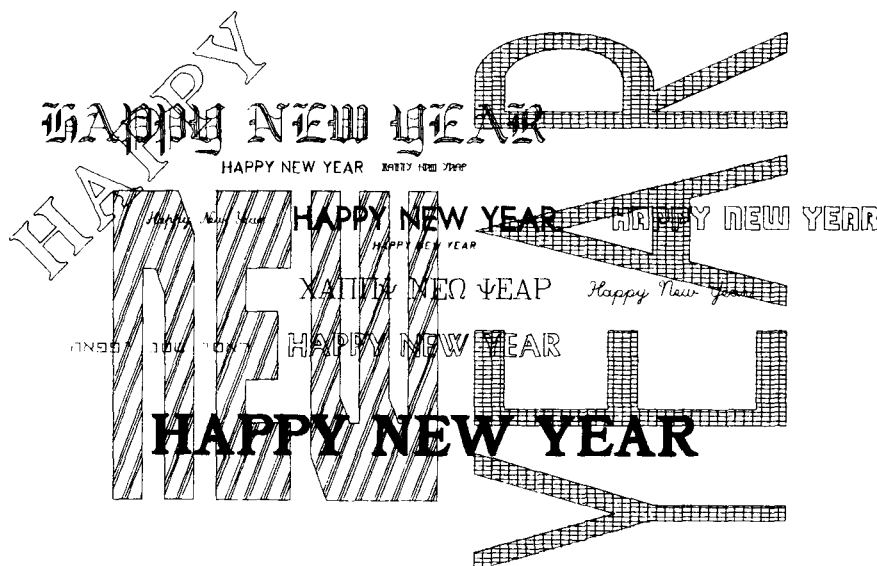
with the Pascal language. Topics include complex data structures, data file operations, large program management, and other techniques. Examples are presented and problem assignments are given. Familiarity with UCC computer systems or equivalent knowledge is assumed.

580 GRAPHICS

Introduction to VAX, CYBER, and CRAY graphics systems and the graphics-oriented commands. Three days covering the general-purpose TELL-A-GRAF, DISPLA, and MNCORE packages. Examples of bar, pie charts, two- and three-dimensional plots, maps. Rudimentary VMS, EDT, NOS, and XEDIT knowledge assumed. Class experimentation encouraged via a planned workshop.

650 COBOL

A structured approach to a programming language for solving business computing problems. Handouts, examples, and assignments cover the four divisions of a COBOL program, statements and verbs in the Procedure Division, and a brief history of the language. No programming experience necessary but CYBER introductory courses or equivalent knowledge is assumed.



Graphic by Harry Hovland

TIME-SERIES SOFTWARE

UNICAST: Univariate Time-Series Analysis and Forecasting Package. Contains 12 different exponential smoothing, moving average, and weighted least-squares models for fitting and forecasting horizontal, linear, quadratic, and seasonal time-series. Includes several model identification and diagnosis utilities, e.g. autocorrelation function, plotting, prediction-realization diagram, error statistics, tracking signal, u-statistics, and alternative methods for discounting previous residuals. MNF compiled binary version available on CYBER 74. Further information and user documentation can be obtained from Jim Cleary, Minnesota House of Representatives; phone 296-5053. No charge.

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PHONE NUMBERS

Budgets	373-2521	HELP-line	376-5592
Computer-Aided Instruction	376-2975	9 a.m.-5 p.m., Monday-Friday	
Computer Hours (recorded message)	373-4927	HOURS-line (recorded message)	373-4927
Computer Store	373-4877	Image Processing	376-2895
Consulting		Information, Experimental Engineering	373-4360
HELP-line	376-5592	Information, Lauderdale	373-4912
9 a.m.-5 p.m., Monday-Friday		Information Systems	376-1764
Business Data Products	376-1761	Instructional Labs	376-2703
1-3 p.m., Monday-Friday		Job Status, ExpEng (recorded message)	373-4994
Statistics Packages	376-5062	Lauderdale Computer Room	373-4940
1-2 p.m., Monday-Friday		Lauderdale Services	373-4995
Data Bases	376-1761	Lauderdale Services Manager	373-7538
1-3 p.m., Monday-Friday		Lauderdale Users' Room	373-4921
Microcomputers	376-4276	MECC Liaison	373-7745
10-12 a.m. and 2-4 p.m., Monday-Friday		Newsletter Subscription	373-4912
Non-Traditional Computing	373-5780	Permanent File Restoration	376-5605
10:30-11:30 a.m., Monday, Wednesday, Friday		Professional Services Division (PSD)	376-1764
TELL-A-GRAF/DISSPLA	376-2663	Project Assistance	376-1764
1-3 p.m. Tuesday, Thursday		Program Librarian	376-1636
Text Processing	376-2943	Programming Languages	376-7290
9 a.m.-noon Tuesday-Thursday		Reference Room	373-7744
Contract Programming	376-1764	Remote Batch (RJE) Services	376-2703
Data Base Applications	376-1764	Short Courses	376-8806
Educational Services	376-3963	Shuttle Bus Service	376-3068
EDUNET Liaison	373-7745	System Status (recorded message)	373-4927
Engineering Services	376-1023, 376-8153	Tape Librarian: see Lauderdale Services	
Equipment Purchase/Information	376-8153	Text Processing Services	376-2943
Experimental Engineering I/O	373-4596	User Accounts	373-4548
Field Engineering	376-7584	User Services	376-3963
Graphics Software	376-5592		

OPERATING HOURS

	Cyber 74/730	Low rate/No frills	Cray	MERITSS (Cyber 172)	VAX
M-F	8 a.m. - 4 a.m.	11 p.m. - 4 a.m.	8 a.m. - midnight	7:45 a.m. - 1:30 a.m.	8 a.m. - 6 a.m.
Sat	4 a.m. - 5:15 p.m.	4 a.m. - 5:15 p.m.	8 a.m. - 5 p.m.	7:45 a.m. - 1:30 a.m.	24 hours
Sun	4 p.m. - 1 a.m.	4 p.m. - 1 a.m.	4 p.m. - midnight	4 p.m. - midnight	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 90	X		
CentH		X		BlegH 91T			X
ComH		X		BlegH 140		X	
DiehH 270, 207		X		MdbH		X	
EltH 121, 125		X		OMWL 2		X	
EltH N640	X			SocSci 167		X*	
ExpE 130	?			<i>St. Paul</i>			
FolH 14, 14a	X	X*	X	BaH		X	
LindH 25, 26	?	X		ClaOff 125	X	X	
MasCan 39	X			NorH 24	X		
MechE 308		X					
Physics 69		*?					
SanfH		X					
TerrH		X					
VinH 4		X					
WaLib 204		X					

* Research cluster; access to Cyber 730 and VAX/VMS

X in interactive column indicates access to MERITSS

? Unknown at the present time

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Director: Peter C. Patton
Editor: Christine Mack Gordon

Comments about the content of this newsletter, or suggestions for changes may be directed to the editor, 235a Experimental Engineering, or call 612/376-9832.

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University Computer Center Newsletter

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