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A sculpture from a visual database of Paleolithic Art being developed at NYU (page 21).
ACADEMIC COMPUTING AND NETWORKING AT NYU is edited and published by New York University's Academic Computing Facility (ACF). It is intended to include information about computing and networking activities at NYU's various schools, departments and administrative units.

Copies of Academic Computing and Networking at NYU are mailed to University faculty and staff and are also available from the ACF's Documentation Office (Room 306 Warren Weaver Hall). Students holding ACF individual computer accounts are included automatically in the newsletter's mailing list.

Contributions from sources within the University are invited for consideration by the editor, call 998-3036 for more information. Unless otherwise indicated, articles are authored by members of the ACF staff.

Those odd notes below many of the by-lines in this issue of the newsletter are electronic mail (E-mail) addresses. If you do not use E-mail but would like to, see the box in the Networks and Network Services section of this newsletter.

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Ancient Studies, Foreign Language Learning, and Virtual Reality

At NYU's Fall '91 Colloquia on Scholarly Computing

Speakers in the humanities, language learning, and auditory visualization were featured in NYU’s Fall '91 colloquia on the uses of computer technology in higher education. The colloquia bring faculty and researchers from universities around the country — including NYU — to speak on innovative uses of computers in which they are involved. Presentations at colloquia during the 1990-1991 academic year brought speakers in such fields as chemistry, music, and public policy research, to discuss faculty-authored multimedia instructional software and other applications in humanities, sciences, language instruction and arts. (For reports on these, please see the November 1990 and the January, March/May, and September 1991 issues of this newsletter.)

The series, which attracted capacity attendance in the Fall ‘91 semester, is sponsored by the Academic Computing Facility (ACF) and the Faculty of Arts and Science (FAS), with support from the IBM Corporation and Apple Computer, Inc.

For information on the Spring '92 series of colloquia, please see the item on page 6.

Ancient Studies

At the first colloquium of the fall semester, Dr. Peter C. Patton reported on uses of computers and supercomputers for instruction and research in the humanities, and particularly in the study of languages and cultures of the ancient Mediterranean and Near Eastern worlds.

Dr. Patton drew many of his examples from work done in a graduate interdisciplinary program at the University of Minnesota’s Center for Ancient Studies, where students of ancient history, languages, and culture learned to use contemporary computer and supercomputer technology to make “progress into the past”. Dr. Patton directed the Center for several years prior to becoming Vice Provost for Information Systems and Computing at the University of Pennsylvania.

Dr. Patton began by demonstrating a grammatical concordance program which has been applied to Sanskrit, other early Indo-European texts, and the Greek New Testament. Concordance building was perhaps the earliest use of computers for research in the humanities, Dr. Patton noted. Therefore, it may serve to illustrate how advances in information technology can benefit scholars in languages and the humanities, freeing them to pursue research questions that once might have been too arduous to undertake.

For example, in 1748 it took 17 years to complete a concordance of the Bible. In 1955, that time was reduced to 1,000 hours with the use of a Univac I, an early mainframe computer. With subsequent developments in computer technology, that time was reduced further to 19 minutes on a CDC mainframe in 1981, and then to 20 seconds on a Cray-2 supercomputer in 1986. Those 20 seconds could, in turn, be pared to two seconds on a new Cray supercomputer planned for 1992.

Computer analyses of ancient Sumerian and Akkadian tablets, performed as part of a Sumerian dictionary project at the University of Pennsylvania, were among the other examples which Dr. Patton presented. As part of yet another project, a computer analysis of Catoh’s book on agriculture was used to produce an economic model of the Roman wine and olive plantation cycle.

Additional examples included instructional programs in archaeology, ancient Sumerian and Egyptian grammar, and the use of NASA satellite data to locate ruins of ancient civilizations. A current project involves a study of the frankincense trade in the ancient Middle East. This will be done partly through computer analyses of recently discovered cave inscriptions that include previously (continued on following page)
dents' linguistic backgrounds. While some instructional programs simply continue traditional methods in a computerized form — for example, by emphasizing passive drill exercises — many others are making important changes in the way languages are taught and learned.

Dr. Patrikis demonstrated a number of multimedia programs for instruction in Arabic, Chinese, French, German, Russian and Spanish. Many of them were faculty-authored and all of them were written for the Macintosh. An increasing number of instructors, he noted, are developing new language instructional materials using HyperCard, a program provided free with every new Macintosh computer.

A la rencontre de Philippe, developed at the Massachusetts Institute of Technology as part of the Athena Project, was perhaps one of the most highly developed interactive language tutorials presented, combining video, sound, animation and a theatrical "script" with which the student interacts. Philippe, played by a French actor, is thrown out of his girlfriend's apartment. The student's job is to help Philippe find an apartment, and it involves navigating Paris, reading French newspaper ads, responding to answering machine messages, and so on. The program, which employs a videodisk, will be commercially available in several months.

Hanzi Assistant, a CD-ROM product created at Dartmouth College, makes available for study 5,000 traditional Chinese characters and 2,000 simple characters. It demonstrates the drawing of Chinese characters and offers opportunity for practice and examination. Hanzi Assistant has many user-settable options, such as selecting a male or female voice for the pronunciation of characters or pinyin translation of characters. Kanji Assistant, for practicing Japanese characters, is under construction.

Language learning using computers is not restricted to languages other than English. A videodisk prepared at Brown University, for example, uses Citizen Kane to teach English contractions to students learning English as a second language.

The Consortium for Language Teaching and Learning is an assembly of eleven private research universities (Brown, Chicago, Columbia, Cornell, Dartmouth, Harvard, MIT, U. of Pennsylvania, Princeton, Stanford, and Yale) which has supported more than 150 projects in more than 40 languages over the past five years. A list of projects and of some of the software developed with Consortium support is available from the ACF's Information Services Group (998-3036).

Auditory Imagery, Scientific Visualization, and Virtual Reality

Auditory imagery for scientific visualization and for "virtual reality" — the simulation via computer of real events and environments — was the topic presented by Professor Gary Kendall, a

(continued on page 31)
Computer-Aided Instruction in Chemistry

Computers have a potentially large application in Computer-Aided Instruction, (CAI). For some of our physical chemistry courses, the Chemistry Department has developed several techniques for using CAI and we recommend their use to other teachers, particularly in the physical sciences. Here I describe two techniques, one combining computer-generated animations with video tapes and the other an extension of the use of the HyperCard program, and then comment on their role in instruction.

We have been using these techniques regularly for the past two years and find that they are very successful and have a definite place in the teaching process. They are used in an undergraduate class of 25 students and a graduate class of 15 students. Both techniques have involved the use of Apple Macintosh computers.

Videotape and Animations
Two extensive 18-minute animations with voice-overs are regularly used to demonstrate future sets of experiments in prelabs. Some of the instruction takes the form of videotapes that require a half-hour of class time to view. Computer-prepared materials are also used in lectures and are then placed on the university-wide network so that students can review them later.

For example, Experimental Methods, a chemistry laboratory course, consists of up to four small laboratory sections in which students are distributed among a many as five different experimental set ups at a given time; in such a situation, arranging individual introductory instruction for each student on each instrument is impossible. For several of the more specialized setups we introduced video taped lecture demonstrations which contain a brief live lecture, then some animation of the setup, lab demonstrations, and finally an appendix dealing with data treatment. Demonstrations are presented of the assembly, operation, and disassembly of instruments. Topics covered by the computer-generated animations include internal operation of instruments, such as special valving, models for the underlying theory and recommended data treatment. These were prepared separately using the program Director and then edited into the video tapes. Each student is expected to view the relevant tape on a VCR in the week preceding the performance of the experiment.

HyperCard Environments
The second technique we have found effective is the use of the HyperCard environment on the Apple Macintosh to produce materials which allow students to perform interactive experiments in chemistry independently. HyperCard appears to the user as a sequence of images and text and provides controls allowing the user to navigate through that sequence. It is also capable of handling modest animations. We have expanded HyperCard so that students can analyze and plot the results of their experiments by branching out to a spreadsheet program (WINGZ) or a computational program (Mathematica).

WINGZ was chosen as the spreadsheet because its button and scripting capabilities, similar to those offered by HyperCard, make it possible to jump from HyperCard to a previously written spreadsheet showing a graph. The user is asked to select values for a variety of desired parameters by clicking on a button and the graph is immediately updated. For example, in a section studying the control of a thermostat, values can be entered for the heater, cooling coils, proportioning band, set point, droop and derivative corrections. The output is the graph of the temperature in three places in the system as a function of temperature. The student can manipulate the settings at will to get a feeling for the nature of this kind of control system. Upon returning to Hy-
Even casual inspection shows the enormous range of possibilities for instruction, especially in the sciences. It is necessary, however, to place CAI in perspective with the rest of the instruction process.

Where and when are books and lectures to be preferred or not preferred over CAI techniques?

(continued from preceding page)

perCard, branches may be explored dealing with analytic mathematical approximations to the system, properties of temperature sensing elements and so on.

For calculations, Mathematica can be started from the HyperCard stack. Unstructured calculations can be made directly, or a Mathematica "notebook" (a prepared module of text and/or calculations and/or graphics) set up for the desired purpose can be used. For example, if the integration of equations representing "chaotic" systems is to be studied, a simple animation representing the evolution in time and space of a gas in a cubic container would be supplied as a demonstration in Mathematica.

It is also possible to arrange in HyperCard for an external videotape or videodisk player to play any chosen segment either on a TV monitor or in a window on the computer screen.

**When Is CAI Best?**

Even casual inspection shows the enormous range of possibilities for instruction, especially in the sciences. It is necessary, however, to place CAI in perspective with the rest of the instruction process. Where and when are books and lectures to be preferred or not preferred over CAI techniques?

There are several places where interactive computer-based techniques have the advantage.

**Dynamic models.** We often deal with discussions about the time and space evolution of quantities, ranging from the motion of molecules to the growth of organisms. Graphical representations, in which the parameters can vary and the time scale changed at will, are incomparably better than verbal descriptions alone.

**Computational aids.** In lectures, relations are commonly simplified to permit analytic mathematical representation; this often limits discussions unrealistically. Thermodynamic calculations on real systems, non-linear equations, intractable integrals, Fourier transforms, and so on can be used if a quick means of calculation is at hand as part of the instructional materials.

**Manipulation of mathematical relations.** The capability of symbolic calculation embodied in Mathematica permits handling by the student of materials too awkward or time-consuming in conventional instruction. Thus, inversion of spin matrices, Taylor expansion and simplification, inversion of series, sets of simultaneous equations and so forth can easily be explored by the student as branches from the main line in CAI material.

**Self-paced instruction.** This is very convenient, but does not differ significantly in instructional advantage from books. The ability of the instructor to add branches of any sort at will, however, makes it possible to address simultaneously students at several levels of ability in a way which is not practical with a textbook (at least not those available for undergraduate instruction). The main line of instruction can be designated easily by means of a menu. Browsing opportunities (which may include questions, problems or graphical materials) are easily added and changed. The better or more curious student can expand the studies as far as desired.

Books can be set up along similar lines, but standard undergraduate text books usually are not, and it is unrealistic to expect undergraduates to browse through a variety of books that are not readily available and signposted.

**Forcing introspection.** These CAI techniques also make us think carefully about what we are doing and how we are accomplishing it. Examining these questions and deciding which manner of implementation is best often leads to a considerable improvement in the teaching process.

**Getting Started**

Finally, I must note a significant obstacle to the development of computer-aided instructional materials; namely, what chemists call activation energy—the extra push required to get a reaction started. The class time required for using these materials is negligible, and students familiar with com-
Mathematics Department Experiments with Computer Assisted Teaching

Calculus Students Use Analyzer at ACF Labs

The Mathematics Department (FAS) experimented this past fall with the use of microcomputers and suitable software to assist in teaching Calculus I to mathematics and non-mathematics majors. We used Analyzer 3.0, a program written for the Macintosh by Beverly West and Douglas Alfors of Cornell University and obtained by the ACF, at our request, for instructional use at its labs.

The program is powerful and easy to use; it would surely get an A on any Calculus I final. For the students, it brought the idea of a "function" to life. Tasks of visualization became trivial. Other ideas such as limits and asymptotes took on concrete meanings.

A twenty-minute tutorial, offered by the ACF at prearranged times early in the semester, was enough to introduce students to the Macintosh and to get them started using Analyzer. The students were assigned a few Analyzer homework problems — for example, to find the roots of an equation (by zooming in on the graph, not by using Analyzer's automatic root finder). They did these problems at their convenience, at the ACF's microcomputer labs. As the semester progressed, Analyzer homework problems were assigned from time to time, whenever visualization was important. A few students used the software more often, for example to check their homework.

The impact of such software is best encapsulated by the following incident. One day, not far into the semester, I was trying to explain what it means to say that, as x tends to zero, the limit of sin(x)/x equals one. A student raised his hand and said: "I don't understand what all the fuss is about. The limit is the value of the function at x = 0. If you don't know the value, use the computer to find it." This generated a discussion, of course, about how the computer generates graphs, and how it is smart enough not to sample sin(x)/x at x=0. But as far as I'm concerned, this student had understood the main point. He understood it in a particularly concrete and self-evident way due to his experience with Analyzer.

The experiment appears to have been a modest success. The experience gained will be important this spring as the Mathematics Department reviews its choice of textbook — and the future use of microcomputers — for calculus instruction.

—Robert Kohn

(Benson Sundheim is a Professor in the Department of Chemistry (FAS).)

The graphs of $y=x^2$ and $y=e^x$, also produced with Analyzer. By zooming in on the graph, students can easily see that the graphs cross when $x$ is about -.703. By zooming out, they can also deduce that there are no other intersections.

(Chemistry, continued from preceding page)

In the Chemistry Department, I have assembled most of the items required for this purpose: video camera, lighting, VCR, computer, video boards, color scanner, and a variety of graphics, animation and editing programs. By making these readily available to the University community, I hope to reduce the initial reluctance of colleagues to take the plunge. The Academic Computing Facility also provides expert technical assistance. Computer based materials may be used on local, dedicated machines or on the University-wide network of machines with the programs distributed on the servers. Therefore, no capital outlay is required to get started.

A brief survey of other universities reveals that techniques of this sort are becoming widespread. A certain amount of program sharing with colleagues at other schools is often possible, as is the admixture with commercially available segments. Thoughtful teachers should give full consideration to the possible use of these new techniques in their classes.

—Benson Sundheim

(sundheim@acfl10.nyu.edu)

(Benson Sundheim is a Professor in the Department of Chemistry (FAS).)

The graphs of $y=sin(x)/x$ along with its first and second derivatives (the dotted graphs). The derivatives were computed automatically using Analyzer, which can also give them as formulas.
Mathematica is Focus of New Interdisciplinary Course

Software Grant to Computer Science and ACF Boosts Study of Modern Computing Concepts

A new NYU course will use Mathematica, the interactive software package from Wolfram Research, Inc. (WRI), to introduce modern computer science concepts and mathematics to undergraduate and graduate students in computer science and other disciplines, particularly physics, chemistry, economics, and finance.

Initiated by the Computer Science Department (CIMS and FAS) and taught by Professor Bud Mishra, the course will employ software awarded jointly to Computer Science and the Academic Computing Facility, specially for this purpose, under WRI's Educational Grant Program. Students will use Mathematica on the Macintosh Iie's at the ACF's microcomputer lab in the Education Building.

Prof. Mishra chose Mathematica as an ideal tool for demonstrating how modern computing has moved from a simple numerical mode of thinking into a multi-media environment where computations involving numerics, symbolics, graphics, animations and sounds are closely integrated. Students will be shown how modern high-level programming languages, like that employed with Mathematica, integrate whole spectrums of programming styles and concepts, and will learn about some of the challenges associated with these new capabilities. Mathematica's ability to link with various other environments and languages, and its consequent usefulness as a prototyping language, will also be explored. Examples from physics, chemistry, finance and other disciplines will be used to help students apply Mathematica to their particular fields.

The multiple copies of software needed for this course were supplied under a grant awarded particularly for Professor Mishra's course. Under the terms of the grant, WRI has provided a matching copy of Mathematica for every copy purchased by NYU. The grant proposal was submitted jointly by Professor Mishra and Ed Friedman of the ACF. For further information on Mathematica and the WRI grant program, contact Ed Friedman (friedman@nyu.edu, 998-3051).

—Reported by Bud Mishra (Computer Science, FAS) and Ed Friedman (ACF) (mishra@nyu.edu and friedman@nyu.edu)

New Colloquia Are Planned for Spring '92

Now in their third year, NYU's increasingly popular colloquia on uses of computers in higher education will continue during the spring of 1992. Sessions in the Fall '91 semester enjoyed capacity attendance (see p.1). As we go to press, the schedule for the Spring '92 semester is still being planned, but six new presentations are anticipated.

The colloquia focus on innovative uses of computers in university instruction and research. The Spring '92 series is expected to include presentations on foreign language teaching, geographic information systems, anthropology research, and other topics of interest.

Sponsored by the Faculty of Arts and Science (FAS) and the Academic Computing Facility (ACF), with support from the IBM Corporation and Apple Computer, Inc., the colloquium series is open to all NYU faculty, staff and students.

Also planned for the Spring '92 semester is a series of more technical talks co-sponsored by the ACF, the Courant Institute of Mathematical Sciences, and other academic units of the University, depending on the topic. Presentations being arranged as we go to press focus on such topics as computer-based techniques for visualizing and analyzing scientific data from different disciplines and varying sources.

For further information...

Announcements of each event will be mailed to NYU faculty several weeks prior to its presentation, and will also appear in the NYU Today Hotline, the biweekly publication of the NYU Information Center. For additional information, please call the ACF at 998-3333.
New Arts and Media Studio Provides High Tech Environment for Artists

ACF facility is targeted toward use in photography, painting, sculpture, cel animation, music composition, set and lighting design, journalism, and other disciplines.

While the Arts and Media Studio will be used for some class meetings, most of the time it will be available to individual students working on creative projects. Because of the unique nature of many of the devices it offers, systems are available on a priority and reservation basis to students in studio and production classes. Student access requires faculty sponsorship in the form of a class account or — for those students in traditional studio classes that would not normally entail use of computer-based tools — an individual student account.

For further information...
To find out more about this new ACF service, or for ideas on how computer-based technologies might be applied to particular projects in Arts and Media, please contact ACF staff member Philip Galanter at 998-3041 or by E-mail (galanter@nyu.edu).

Equipment in the ACF Arts and Media Studio: Partial List

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<th>MULTIMEDIA</th>
<th>IMAGING</th>
<th>ANIMATION</th>
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<tr>
<td>Mac Quadra 700 with 20 MB RAM</td>
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<td>2 MB Internal Video RAM, Ethernet Transceiver</td>
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<td>CD-ROM/CDDA Drive</td>
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<td>Raster Ops 19&quot; Trinitron [1024 x 768, 24 bit color]</td>
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<td>E-Machines Futura MX NuBus Video Card</td>
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<td>E-Machines 16&quot; Trinitron [640 x 480, 24 bit, internal]</td>
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<td>AudioMedia NuBus Board (CD quality audio)</td>
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<td>Sound Blaster Plus (20-bit sound)</td>
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<td>Apple M61 Interface</td>
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The Arts and Media Studio will also include four NeXT computers, located at the Education Building site, to be used primarily for computer music applications. See text for more details. Ed. Bldg. refers to equipment located in the ACF Arts and Media Studio, Education Building, second floor. WWH refers to equipment located in the ACF Faculty Microcomputer Lab or the ACF Visualization Center, at Warren Weaver Hall, third floor.
building. The NeXT computers are to be site on the second floor of the Education Building. The NeXT computers are to be used primarily for computer music applications. (See, for example, the article on SEHNAp Music Technology Program on p. 13.) The Macintosh Quadra 700 computers are clustered into three groups for use in animation, imaging, and interactive multimedia, although considerable overlap in users and applications is expected.

The Quadra 700 is the fastest computer currently available from Apple, and each will include a large full 24-bit color monitor (usually 832-by-624 pixels), 20 megabytes of memory, a large hard disk, and a Syquest disk drive. (For more information on the new Quadra computer see the article on p. 22.) The typical student will bring and take away work on a floppy or Syquest disk, treating the hard disk as a scratch space. Sound and image files can be quite large; thus the need for a data medium such as the Syquest. (See Why Artists Need High Tech Computers.) Several higher capacity, and more expensive, alternatives to the 45 MB Syquest have recently been introduced, and as dominant formats emerge, ACF facilities will support them.

**Image Production**

Tailored for work with still images, three of the Mac Quadra 700 computers support full 24 bit color, with one providing a larger 1024-by-808 pixel screen that is driven by a special accelerated graphics card. Attached to these systems are three medium resolution 24-bit color scanners, two of which are used with paper materials and the other with 35 mm slides. A drive for use with CD-ROM based image publications is available on one of the systems.

Each system is equipped with a 660 MB hard drive allowing ample space for work with large image files. Each system also has a Wacom Tablet that allows the use of a wireless stylus as an alternative to the mouse and keyboard. Along with placement and motion, the stylus responds to pressure allowing software to simulate various natural effects. In a paint package, artists can create animations for use in animation, imaging, and interactive multimedia, although considerable overlap in users and applications is expected.

The Quadra 700 is the fastest computer currently available from Apple, and each will include a large full 24-bit color monitor (usually 832-by-624 pixels), 20 megabytes of memory, a large hard disk, and a Syquest disk drive. (For more information on the new Quadra computer see the article on p. 22.) The typical student will bring and take away work on a floppy or Syquest disk, treating the hard disk as a scratch space. Sound and image files can be quite large; thus the need for a data medium such as the Syquest. (See Why Artists Need High Tech Computers.) Several higher capacity, and more expensive, alternatives to the 45 MB Syquest have recently been introduced, and as dominant formats emerge, ACF facilities will support them.

**Why Artists Need High Tech Computers**

One of the ironies of designing computer-based tools for artists is that one quickly discovers that the normal and reasonable demands artists typically make of the technology can easily exceed those of traditional scientific and business users. Part of our surprise may be due to our taking for granted the capacity of our own senses and the way artists strive to fully use that capacity through traditional media.

Take sound and music as an example. The standard used in the design of CDs was intended to match the capacity of human hearing, and technology similar to that used for CD audio will be available in the Macintosh and NeXT systems found in the ACF Arts and Media Studio. To get a bit technical, in round numbers, CD quality stereo sound requires two channels of 88,200 bytes per second, or about 10.6 MB of disk space per minute of recorded sound. Thus, students using the ACF's new Arts and Media Studio will find that the typical pop song will fill the better part of a removable Syquest disk.

Artists working with visual materials make larger demands on disk space. Scanned still images from an industry standard Nikon LS-3500 used with 35mm film are 4,096 by 6,144 pixels with 24 bits of color, or about 75.5 MB per slide. The ACF's LS-3510 scanner available to faculty at Warren Weaver Hall is a follow-on product that produces scans equal to or better than the 3500.

Using equipment found in the ACF Arts and Media Studio, students will scan images at lower resolution, but file sizes of 20 to 40 MB will still be typical. Students will store multiple images and interim versions on the local hard disk for purposes of compositing and backup. Thus, the need for a 600 MB hard disk will be typical, even though the end result will usually fit on a single 45 MB Syquest disk.

Those working with moving images make still larger disk space demands. Fully rendered frames of television-like video animation are typically 640 by 480 pixels with 24 bits of color at 30 frames per second. This comes to about 27.6 MB per second, or about 1.66 GB for a minute of animated sequence.

Those creating animations for use with computer-based multimedia presentations can work with lower frame rates, less color resolution, or fewer pixels, but those targeting videotape as an output medium face the above reality. Emerging tools for image compression will be used to not only save disk space, but also to overcome data bandwidth limitations currently found in personal computers, thus allowing the real-time display of digital video.

Artists make similar demands on other aspects of a desktop computer. Programs which move tens or hundreds of megabytes require correspondingly fast CPUs, and are best used with large amounts of physical memory. In addition, there are real-time aspects which are CPU-intensive, such as audio playback, onscreen video from hard disk, and the displaying of strokes drawn with a moving stylus and simulated ink flow and paper characteristics. Programs such as Adobe Photoshop, which are used to manipulate images, use number-crunching algorithms to apply various filters and effects, and three-dimensional systems like Renderman can take minutes or even hours to render images depending on the complexity of the scene. Thus, typical artistic requests can result in a heavy computational load.

The Quadra 700s in the Arts and Media Studio are the fastest Macintosh computers currently available, and are outfitted with the 20 MB maximum of physical memory. The NeXT computers also provide the fastest processor currently available from NeXT, and are fitted with ample memory. The ACF Arts and Media Studio will provide a useful and robust environment for classes which make extensive use of computer-based tools for production-oriented classes.

—Philip Galanter
NYU Students of Computer Music Composition To Use NeXTs at ACF Arts and Media Studio

The Music Technology program at SEHNAP offers instruction in MIDI programming, computer music composition, recording techniques, and other topics relating new technology to music production and performance. Research is currently focused on interactive music systems, digital signal processing, and the integration of images and sound. The NeXT machine represents a powerful platform for exploration of these areas, with its onboard Motorola 56001 digital signal processing chip, high-resolution display, and extensive software support for MIDI applications and compact disc quality digital audio.

Robert Rowe intends to exploit these capabilities at the ACF Arts and Media Studio as an integral part of SEHNAP coursework. Dr. Rowe, a newly-appointed Assistant Professor and Associate Director of the Music Technology program at SEHNAP, recently completed a Ph.D. in Music and Cognition from the MIT Media Laboratory. Previously, Dr. Rowe studied and composed at the Institute of Sonology in Urecht, Holland and at the IRCAM in Paris.

NeXT Technology and Computer Music

In the commercial music production world, computers are used to control electronic keyboard instruments such as synthesizers and samplers via Musical Instrument Digital Interface (MIDI). Such systems are typically used with software packages designed to meet the needs of the traditional pop, jingle, or soundtrack composer, but are not open systems that allow experimentation. The Macintosh tends to dominate among professionals using this kind of turn-key system.

University computer music centers often take a different path, and create and use software tools that allow composers to go beyond what is available off-the-shelf. Rather than triggering commercial synthesizers, computers are used to execute number-crunching algorithms that directly compute the actual waveforms to be heard. Because this is usually not done in real-time, composers can design virtual instruments of arbitrary complexity, and are not constrained in their search for new timbres.

Software is also created to allow new forms of notation, algorithmic composition, real-time interactive performance and improvisation.

The NeXT computer has proven to be dominant at university computer music centers for this kind of work. Software packages from several computer music laboratories are being reviewed and extended to equip a cluster of NeXTs in the ACF Arts and Media Studio with an integrated environment offering computer-assisted instruction in digital signal processing, algorithmic composition, and multimedia. This will provide some important instructional advantages. For example, graphic plots of time- and frequency-domain representations of sound become much more meaningful when they are presented in conjunction with the sound itself.

In addition, the Macintosh computers in the ACF Arts and Media Studio will support some of the more popular commercial MIDI software packages.

—Philip Galanter and Robert Rowe (rower@acfl.nyu.edu)

(continued from preceding page)

for example, a pen tool might draw a wider or thinner line in response to changing pressure, or an air brush tool might respond by varying the spray density.

A similar system, available to faculty at the ACF Faculty Microcomputer Lab, provides the above capabilities, plus a high resolution Nikon 35 mm slide scanner for more demanding applications. Users at both locations have access to paint programs, processing programs such as Photoshop, and page layout programs such as Quark Xpress.

Animation

Tailored for work with three-dimensional animation software, two of the Mac Quadra 700 computers are equipped with second screens that display a standard television-sized image in both interlaced and non-interlaced modes. This means that students are able to view their animations as both computer and video images, and can design around problems that are often introduced by displaying computer graphics on a television.

Each of these systems has a 1.2 GB hard drive which holds more than 30 seconds of fully rendered video. Each system will also have a Wacom Tablet.

Because rendering three-dimensional graphics is very compute intensive, students can reserve a given machine to run a rendering job overnight and, the following morning, can copy the rendered frames to a digital audio tape (DAT) as data for later video transfer. Individual test frames, or animations which are smaller in size or frame rate, can be rendered during the day and used directly.

Interactive Computer Music Concert

On March 9, 1992, the faculty of the Music Technology program (SEHNAP) will join with the NYU Contemporary Music Ensemble to present a concert of interactive computer music. All of the works on the program will combine live instrumental performance with real-time computer responses, including transformation of the instrumental sounds, computer improvisation, and synchronized video imagery. For more information, contact Joel Krantz at 998-5437.

(continued on following page)
New Computer Animation and Imaging Studio Is Opened at TSOA

Photography and film students studying digital imaging and computer animation at the Tisch School of the Arts and students from the Computer Science Department will be using a recently completed computer-based production studio at 721 Broadway. The new facility, which formally opened on November 14, is the result of an ongoing collaboration between TSOA and the Computer Science Department (CIMS), and was made possible through a NYNEX Corporation grant. Additional assistance, including Ethernet connections to the NYU campus-wide network as well as consultation in compatibility and connectivity issues, was provided by the Academic Computing Facility (ACF).

The new facility is operated under the auspices of the TSOA Departments of Animation and Photography and was initiated through a collaboration among Assistant Professors Kenneth Perlin (Computer Science, CIMS) and Lorie Loeb (Film and Television, TSOA) and Professor Thomas Drysdale, Chairman of the TSOA Department of Photography. Equipment at the studio includes two Macintosh IIs donated by Apple Computer, Inc., one IBM PC-compatible 386 microcomputer, four SUN workstations (including two color SPARCstations obtained through Prof. Perlin’s NSF Presidential Young Investigator Grant), an Amiga 2000 lent by the ACF, facilities for video production, laser printers, a Microtek color/grayscale scanner, and various software. Photography majors also utilize a workstation furnished with an IBM platform, a TARGA board for digital imaging, a video-scanning camera, and a Montage film recorder, at times in conjunction with a Macintosh FX-based electronic publishing system located in an adjacent facility.

One of the applications used at the new studio, Scratch, was designed by Professor Perlin with help from Professor Loeb. It allows users to create animations in a highly intuitive fashion. Professor Loeb is an award winning animator. Professor Perlin helped design the ground breaking computer graphics in the 1982 Disney film “Tron.”

---Newsletter staff

(continued from preceding page)

Along with generating videotapes, three-dimensional animation software can be used to generate clips played directly off the hard disk for interactive multimedia.

A similar system, available to faculty at the ACF Visualization Center, provides the above capabilities, plus the ability to lay sequences off to video tape on a frame-by-frame basis. Users at both locations have access to modeling, animation, and rendering software such as MacroMind 3D, Swivel, Renderman, and more.

Interactive Multimedia

Tailored for work with interactive multimedia, three of the Macintosh Quadra 700 computers are set up to handle full motion video sources for display in a screen window. Individual frames or sequences of video can be recorded to the hard disk, integrated into multimedia presentations, and accessed interactively. One system also has hardware and software for use with MIDI-based music equipment.

Each of these systems has a 660 MB hard drive and a LaserDisc player as a source of real-time interactive video. Audiodata cards allow the computers to record and play back CD-quality audio. Each system also has a CD-ROM drive which can also be used as a source of interactive prerecorded audio using standard music CDs. Decks for use with audio and VHS cassette tapes are also available.

All three systems support full 24 bit color 1024 by 768 pixel screens, and can also accept full motion video sources for display in a screen window. Individual frames or sequences of video can be recorded to hard disk, integrated into multimedia presentations, and accessed interactively.

A similar system is available to faculty at the ACF Faculty Microcomputer Lab. Users at both locations have access to software such as HyperCard, Director and MediaMaker from MacroMind, Deck, SoundDesigner, and more.

In addition to the above, the ACF is currently exploring alternatives for high quality color hardcopy output, improved computer-to-video transfer services, and expanded support for graphics workstation based animation. These topics, as well as specific faculty projects and classes using these facilities, will be reported in future issues of Academic Computing and Networking at NYU.

---Philip Galanter

Summer Internships Available at LucasArts

LucasArts, a subsidiary of Lucasfilm Ltd., providers of products and services to the entertainment industry, is recruiting interns for the summer session. Internships are available in the LucasArts Computer Graphics Department, which produces special effects for film using high-end three-dimensional computer graphic technology. Juniors, seniors or masters candidates are accepted.

LucasArts offers internships to students who wish to pursue careers in visual effects and sound design, television commercials, public space entertainment, interactive game software, audio systems, and educational multimedia products.

The summer internship is a paid nine-week program in which students work full-time at the company’s Marin County, California location. Fall and spring internships are also available.

The summer session begins in mid-June. Application forms are available from the ACF Information Services Office (Room 306 Warren Weaver Hall); they are due March 30.

---reported by Ed Friedman

(friedman@acfcluster.nyu.edu)
Computing at the Law School

New Internet Resources for Artificial Intelligence and Law

Legal and Computer Professionals Exchange Ideas Via Two Networked Conferences

Artificial intelligence (AI) has been a topic of growing interest in both computer science and jurisprudence. Why the interest in applying AI to law? There are at least two motivations. The first is the challenge of building AI systems based on strikingly different methods of reasoning than those associated with science or engineering. Law is founded on precedence and persuasion, rather than deductive logic. Designing a valid computational model of legal reasoning presents many novel challenges to AI wizards. In certain respects, applying AI to law is akin to the current work in natural language processing. Both attempt to model systems which exceed the confines of traditional logic in dramatic ways.

The second motivation is that law is a field of major social and economic importance in the real world. Moreover, there is a widespread perception that current legal methods are unsatisfactory or at least too costly. Thus successful legal AI projects can dream of attracting serious funding and other forms of support. This prospect becomes ever more realistic as more and more new lawyers fully trained in database methods are unsatisfactory or at least too costly. At least, so far.

Designing a valid computational model of legal reasoning presents many novel challenges to Artificial Intelligence wizards.

which tends to keep them from becoming overly abstract. At least, so far.

Laser Printer Tips

The increasing use of recycled toner cartridges around the Law School and University make it important to review a few simple tips for conserving toner and maintaining laser printers.

One way to prolong the life of a fading toner cartridge is to take it out of the printer and shake it from side to side a few times. This redistributes the toner particles and helps to avoid streaks of white on printouts. Shaking a dying cartridge often results in many more pages of printout.

Another way to prolong the life of a toner cartridge with Hewlett-Packard printers is to set the print density dial to a lower setting. This dial controls the darkness of the printed page. Often it is set darker than necessary, resulting in black streaks on printouts. To adjust the print density, first locate the density dial. Then turn the dial to the desired setting. The darkest setting, "one", will use toner most rapidly; a setting of "five" is usually adequate.

Whether or not you are using a recycled cartridge, you should clean your printer periodically. Cartridges frequently leak toner particles into your printer, which can cause streaked printouts and reduce the life of your printer. Compressed air will quickly remove any excess toner; cans of compressed air are available at most computer supply stores. The transfer corona wire (which prepares the photosensitive drum surface for printing) also should be cleaned periodically with a cotton swab and rubbing alcohol. Locations and cleaning directions for this wire vary in different printers, so you must refer to your user's manual for instructions.

—Donald Chesnut

(Donald Chesnut is the manager of the MicroSupport Services Department of the School of Law.)

Academic Computing and Networking at NYU, January 1992, page 11
ACF's New Mac Lab Moves to Ed Building

PCs at 14 Washington Place, More Machines at Both Sites

As we go to press, the ACF is expanding and reorganizing the PC and Macintosh resources offered at two of its computer labs. The 14 Washington Place lab will re-open for the spring semester as a PC lab, while the Education Building location — formerly a PC site — will house a Macintosh lab, a new Macintosh classroom, a PC classroom, and a new state-of-the-art multimedia studio for use by classes in the arts and media.

New higher-end machines are being added to both labs, and starting in the spring semester, there will be faculty office space at both labs. Here, faculty members whose classes are using ACF computers can reserve hours to meet with their students to more conveniently discuss assignments that are being completed at the labs.

At the Ed Building

The ACF's Education Building site — formerly a PC lab — will become primarily a Gateway Building location. That will house a Macintosh lab, a new Macintosh classroom, a PC classroom, and a new state-of-the-art multimedia studio for use by classes in the arts and media.

New higher-end machines are being added to both labs, and starting in the spring semester, there will be faculty office space at both labs. Here, faculty members whose classes are using ACF computers can reserve hours to meet with their students to more conveniently discuss assignments that are being completed at the labs.

Computer Classrooms

About six of the Macintosh IIsi's and 14 of the IIsi's at the Education Building lab will be located in a new Macintosh classroom, which, along with flat-panel projection equipment, will be available to faculty for occasional class sessions (see box for reservation information). A second ACF classroom of approximately 24 IBM PS/2s (Model 55) will remain at the Education Building site and will also be available for periodic use by faculty.

New NYU Courses Offered in Computer Applications for People with Disabilities

Computers serve as prostheses for the disabled population that compensate for deficiencies in cognitive and sensory-motor skills. They can have a significant impact on the lives of people with disabilities. They can enhance the learning process, create new employment opportunities, and provide fun and exciting games for children and adults who, as a result of their impairment, cannot engage in ordinary play activities.

The first course exposes students to the state of the art of adaptive computer technology. The second focuses on the clinical areas of interest to the course participants. These areas include, but are not limited to, uses of computers in assessing and teaching cognitive skills to cognitively impaired children and adults, use of computers in the work area, alternative ways for physically disabled individuals to access the computer, and use of the computer for communication enhancement.

In summer 1992, the second course will be offered as a Summer Institute. This will be a one-week intensive course and will start on June 22 and end on June 26. Courses are open to occupational therapists as well as others interested in adaptive computer technologies for disabled people.

For more information, please contact Professor Dina Loeb, Department of Occupational Therapy, at 998-5854.

Dina Loeb
Department of Occupational Therapy

To reserve an ACF computer classroom or office-hour space:
Faculty members who wish to reserve the ACF's Macintosh or PC classroom for an occasional class session should contact ACF consultant Howard Fink at 998-3339.
To reserve space to meet with individual students in classes using ACF computers at the Education Building Lab, instructors should contact Howard Fink; for the 14 Washington Place lab, please contact ACF consultant Jae Fried (998-3436).

Augmented PC Resources

The recently renovated 14 Washington Place lab will now be devoted exclusively to the use of IBM-type PCs. The 60 machines at this site will include ten new higher-end PC clones — Gateway 2000s — that are very fast PCs with 33 MHZ 486 processors and 8 MB of memory, as well as higher-resolution, Super-VGA video capabilities.

In addition, the ACF is upgrading the memory of all 50 IBM PS/2s being brought over from the ACF's Education Building lab. This will enable the 15 Model 55s and (continued on following page)
(Mac Lab, continued from preceding page)

the 35 Model 70s to more easily handle memory-consuming applications like Windows, ATLAS*Graphics, and AutoCAD.

The ACF's PC classroom will remain at the Education Building lab (see above).

New Software

The collection of software available to users of the ACF's four computer labs will include a number of new items requested by faculty for instruction or research, including Stat and three packages mentioned earlier, ATLAS*Graphics, Macromind Director, and AutoCAD. For a complete list, visit one of the labs, or contact the ACF at 998-3333. To discuss the addition of software to this collection, faculty members should contact Gary Chapman at 998-3045.

—Estelle Hochberg

(hochberg@acfluster.nyu.edu)

Statistical Software Available Under Site License from the ACF

Educational Savings on SPSS and SAS for PC, and on SYSTAT (for Mac and PC)

The ACF has just obtained site licenses for the DOS and Macintosh versions of SYSTAT for distribution to members of the NYU community. The ACF has also been licensed to distribute major components of SPSS/PC+ and the SAS Applications System under MS-DOS for several years. These site licenses make it possible for NYU graduate students and full-time faculty and staff to purchase these popular statistical packages at considerable savings. All of the software has also been installed for use on the PC's and Macs at the ACF's microcomputer labs.

SYSTAT for the Mac and PC

SYSTAT is a comprehensive package that offers an extensive collection of statistics, graphics and data management capabilities. Both menu-driven and command-level interfaces are offered and may be used within the same session, as desired. Version 5.0 for DOS machines and Version 5.1 for Macintoshes are available.

Under the ACF's new site license, NYU faculty, staff and graduate students may purchase both the base system, including SYGRAPH, SYSTAT's integrated graphics subsystem, at an educational charge of $125 plus an annual renewal fee. Availability and pricing for add-on SYSTAT modules are being explored by the ACF, as we go to press.

SPSS/PC and SAS

Components of SPSS/PC+ Version 4.01 covered under the site license are the Base System and the Statistics, Advanced Statistics, and Data Entry modules. The available components of the SAS System Version 6.04 include Base SAS and SAS/STAT. Additional modules (SAS/EIS, SAS/FSP, SAS/GRAPH, SAS/IML, SAS/ASSIST) can be obtained by special arrangement and at additional cost.

Obtaining the Software

Printed descriptions of the packages and their modules are available at the ACF's Faculty Microcomputer Lab (see below). The software is distributed at the ACF along with basic installation instructions; complete manuals produced by the software vendors can be purchased at the NYU BookCenter. Reference copies of manuals are also available at the ACF's microcomputer labs.

At the ACF's Instructional Micro Labs, Spring '92

NYU students, faculty, and staff may use ACF microcomputers under three types of accounts, at no charge to the individual: private microcomputer accounts, individual ("research") accounts, and class accounts. The latter two types of account are issued for specific academic purposes and allow priority access to ACF computers.

Obtaining an ACF account:

For private microcomputer use, simply bring your current, valid NYU ID to any of the labs listed below; no account application procedure is required. Individual and class accounts (also called priority access accounts) are obtained through the ACF's Accounts Office (Room 305 Warren Weaver Hall, 998-3035). For priority access accounts, a special form must be filled out and, for students requesting an individual account, an instructor's signature is required. Please contact the Accounts Office for details.

What's available at the labs in Spring '92: The following microcomputer equipment is available at the ACF's instructional computer labs. All systems are connected to local networks linked to the campus wide network NYU-Net, and are connected locally to Novell-based file servers and laser printers. Each site has two or more laser printers. A large collection of software (over 60 packages) is available. For hours of operation, please see inside back cover; for usage restrictions, if any, please see notes below.

Third Avenue North Residence hall, basement (62 computers)*:

• 32 IBM and IBM-type computers with mouse and VGA color monitor
• 30 Apple Macintosh SE computers, with two floppy drives

Education Building, second floor (82 computers)*:

Please see accompanying article and page 11 for details on the Arts and Media Studio equipment which is not included in the following.

• 38 Macintosh IIti computers with hard disks and color monitors
• 20 Macintosh Ilt computers with hard disks, color monitors, and 16 MB memory
• 24 IBM PS/2 computers, model 535XX, with mouse, VGA color monitor

Tisch Hall, Room LC-8 (46 computers)*:

• 12 IBM PS/2 computers, model 535XX, with mouse, VGA color monitor
• 15 IBM PS/2 computers, model 30, with monochrome monitor
• 19 Macintosh Plus computers with hard disks

14 Washington Place (60 computers)*:

• 10 Gateway 2000 computers with 486 processors and 8 MB of memory and Super-VGA monitors
• 15 IBM PS/2 computers, model 535XX, with mouse, VGA color monitor
• 35 IBM PS/2 computers, model 70, with mouse, VGA color monitor; 25 with numeric coprocessor and joystick.

*Current available to private microcomputer users and to instructional/research users (students and faculty with individual and class accounts) during all hours of operation (see inside back cover).

*Available to private micro account holders from 8:30 a.m. to 1 p.m., Mon. - Fri., and to instructional/research users (students and faculty with individual and class accounts) during all hours of operation (see inside back cover).
To obtain a copy of any of these packages, please make an appointment with the staff of the ACF Faculty Microcomputer Laboratory, 998-3044. You must supply the diskettes. SPSS/PC+ is distributed in 360K format on 21 double-density 5.25-inch or 3.5-inch diskettes. The SAS System is distributed in high-density format only on 18 high-density 3.5-inch diskettes. You will need 5 double-density 3.5-inch diskettes (or ten 5.25-inch diskettes) for the PC version of SYSTAT, and 6 double-density diskettes for the Mac version.

Each of the packages may be obtained for $125, with a required annual renewal fee of $50. The annual fee enables the ACF to fund the continued licensing of these products so that you will receive all updates, upgrades, and bug-fixes.

Individuals may make payment with a personal check; departmental purchases can be paid via a transfer of funds. Fund transfers can be arranged by contacting Carole Rowe at the ACF at 998-3046.

Eligibility and terms. Graduate students and full-time faculty and staff of New York University are eligible to obtain copies of these programs from the ACF. When obtaining these packages, you will be asked to sign an agreement assenting to the terms outlined above, to refrain from distributing the software to other individuals, and to cease use of the software if you leave the University, as stipulated by our site license agreement with the software vendors.

Consulting services. The ACF provides consulting services to assist you in the use of these software packages. For help with this software, please contact the ACF statistical consultants in Tisch Hall Room LC-7, 998-3434. Please note that recipients of these site-licensed copies should contact NYU consultants rather than the software vendors themselves.

—Gary Chapman

Updated Anti-Viral Programs from the ACF

Recent updates to the popular SCAN and F-PROT anti-viral programs for IBM-type PCs are now available through the ACF's INFO system. You can login via Kermit to INFO (dial-in to 995-3600, connect to INFO and then select DOWNLOADS) and download these files. They can also be obtained via "anonymous ftp" to the ACFcluster ("cd msdos") or on disk from the ACF's Microcomputer Lab (998-3044).

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Anti-viral software for Macintoshes is also available from the ACF. For further information, connect to INFO as described above or call the ACF Microcomputer Lab at 998-3044.

—Gary Chapman

New at the ACF Faculty Micro Lab

The ACF Faculty Microcomputer Lab, located in Room 312 at Warren Weaver Hall, has new equipment and software for the Spring '92 semester designed to mirror the offerings in the ACF's new Arts and Media Studio (see article beginning on page 7) as well as four Macintosh PowerBook computers — one model 100, two model 140s, and one model 170. The PowerBooks, Apple's new notebook computers, are available for faculty members to examine in the Lab.

The ACF Faculty Micro Lab is a place where NYU faculty, research, and administrative staff can learn about different kinds of microcomputer hardware and software and obtain expert advice in the selection and use of personal computers, workstations, departmental networks, and related products. Visits to the Lab are by appointment. Please call 998-3044 to arrange a time. Hours between noon and 8pm, Mondays through Fridays, are usually available.

—reported by Gary Chapman (chapman@acfcluster.nyu.edu), Stephen A. Rittersporn (rittersporn@acfcluster.nyu.edu).
Electronic Conferences: Linking Scholars Via Network

Science, Linguistics, Education, Eastern Europe, Visual Arts, and More Are Discussed Over International Links

Electronic conferences like the BITNET discussion "lists" allow scholars at universities around the world to exchange information and views quickly and conveniently via international networks and electronic mail (E-mail).

Previous issues of this newsletter have featured academic discussion lists focusing on Chaucer, Shakespeare, Jane Austen, evolutionary research, ancient texts, women's studies, and more. In this issue, we present a few more lists that we thought might be of interest, some of them newly created, some of them not.

The accompanying box tells you how to subscribe to these lists, using E-mail. Users of ACF mainframes and minicomputers automatically have access to E-mail. Other members of the NYU community can obtain ACF Electronic Mail Accounts, which are available to all faculty, staff and students with valid NYU ID's (see page 17 for details).

New Discussion Lists

The following is a list of newly established scholarly conferences that might be of interest to members of the NYU community. Unless otherwise noted all E-mail addresses are BITNET addresses.

- Science and Technology. A public forum for canonical scientific and technological conversations with the goal of linking academic networks with mass media. The idea is to provide a forum for the dissemination of information of scientific events into the public arena. The list accepts submissions in Spanish, Portuguese and English. Subscription address: LISTSERV@UHECVM List name: xxi

- New Paradigms in Education. This list is dedicated to experimenting with and exploring means of education. It asks the question: what are the new paradigms in education and how can they be implemented. Subscription address: LISTSERV@VALUSC.EDU (internet) List name: NEWEDU-L

- Soviet Union. This is a moderated discussion list of events in the Soviet Union related to BITNET, Internet, and telecommunications in general. Subscription address: LISTSERV@UBVM List name: EUARN-L

- Computers and Electronics in Eastern Europe. A new list devoted to discussion of computers, computer communications and electronic developments in Eastern Europe. It is an attempt to help the new networks in these areasARTCRIT

- Academic Software Development. A forum for discussion of all aspects of academic software development. Topics range from courseware to research and reviews. Subscription address: LISTSERV@WUVMD List name: ACSOFT-L

- Visual Arts. A discussion forum open to anyone interested in the visual arts. Topics will reflect the diversity of art critical discourse: postmodernism, Marxist and feminist theories, curatorial practices, funding and any issue which affects artists, critics and art viewers. Subscription address: LISTSERV@YORKVM List name: ARTCRIT

- Higher Education. This list is for open communication concerning issues of higher education within the Association for the Study of Higher Education (ASHE). Subscription address: LISTSERV@UCVM List name: ASHE-L

- Computing in the Humanities. An international electronic discussion group for computing humanists and for those who support the application of computers to scholarship in the humanities. Topics include technical questions about hardware and software, problems in humanistic scholarship, and the administrative difficulties and philosophical issues arising from the application of computing to the humanities. To subscribe send a note with a brief biography (continued on page 17)
Project Gutenberg Makes the Classics Available Free Via the Internet

Volunteers Are Building a Network-Accessible Collection of Non-Copyright Books

Electronic books are making big news these days — with a front-page article in The Wall Street Journal, a piece by New York Times computer "maven" John Markoff, and recently the new Sony portable CD-ROM disk reader. The idea of providing books and other publications electronically is not new. Magazine and newspaper articles, for example, have been available through database services in full text format for a number of years. However, access to electronic information via such commercial services has typically been costly.

What is new is the availability of copyright-free books and documents in electronic form that are being distributed for free. "I want a world where this stuff is available, where you can walk into a public library and get 90% of the information you need copied on a disk that you don't have to return," says Michael Hart, the founder and Director of the Project Gutenberg National Clearinghouse for Machine Readable Texts.

Building Electronic Collections

Using the Internet and volunteer help, Hart, an adjunct professor at Illinois Benedictine College in Lisle, is determined to create a vast electronic library of 10,000 volumes of documents, books and other works that have fallen into the public domain. He hopes to give away a trillion books by the start of the next century.

The purpose of Project Gutenberg is to encourage the creation and distribution of English language electronic texts. "To create such a library would take the work of less than one out of ten of a conservatively estimated 100,000 libraries in the U.S. alone, if each created one full text. If all the libraries co-operated, it would require less than 10% of a volume per library. The result could be a truly public library of 10,000 books which would each be usable on any of the 100 million computers we are targeting," says Hart.

His monthly Project Gutenberg newsletter goes out to about 10,000 computer addresses. The newsletter contains items on new releases, information on how to obtain texts and so on. Hart says he gets about a quarter of a megabyte of E-mail a day from people looking for electronic texts, proofreader's corrections and the like.

Copyright Issues

Hart restricts the Gutenberg Project to works in the public domain and is a stickler about copyright. Mary Brandt Jensen, head of the law library at the University of South Dakota, conducts most of his copyright searches.

So far, most electronic text work has been carried out by private individuals who, on their own time and at their own expense, either type in a work or use a scanner and OCR (optical character recognition) software.

Hart believes that electronic texts (continued on page 18)

To find out more about Project Gutenberg...

- To subscribe to the Project Gutenberg newsletter, follow the directions on page 15 for subscribing to lists, substituting GUTENBERG for the list name and UHCVMD.BITNET for the node. Or you can send E-mail to GUTENBERG@VMC.CSO.UIUC.EDU where the only line of the message is SUBSCRIBE GUTENBERG YOUR_NAME. The Project Gutenberg newsletter is also available as the Usenet newsgroup BIT.LISTSERV.GUTENBERG.

- To retrieve a file via E-mail, first send the following line by itself in an E-mail message to ALMANAC@OES.ORGST.EDU: SEND GUTENBERG CATALOG. You will receive instructions on how to send further requests and a list of the available files.

- Project Gutenberg texts can be retrieved via anonymous FTP from the following sites. Unless otherwise noted, the login name is anonymous and the password is guest.

  - MRN.CNEXT.CSO.UIUC.EDU — Type cd/extext to access the correct directory.
  - OES.ORGST.EDU — Login as anonymous but use your E-mail address as the password; then type cd/pub/almanac/guten.
  - THINK.COM — Type cd/public after logging in.
  - QUAKE.THINK.COM — Type cd pub/etext.
  - WSMR-SIMTEL.ARMY.MIL — Type cd PD1:<MSDOS BOOKS>
  - WUARCHIVE.WUSTL.EDU — Login as anonymous and use your E-mail address as the password.
New Guide to Internet Resources

A recent ACF newsletter announced an updated edition of NYSERNet's New User's Guide to Useful and Unique Resources on the Internet. This guide is available for examination from the ACF's Documentation Office, Room 306 Warren Weaver Hall.

Personal copies of the Guide may be ordered directly from NYSERNet, Inc. Send a check or money order for $25.00 to New User's Guide, NYSERNet, Inc., 111 College Place, Syracuse, NY 13244-4100.

Obtaining an E-Mail Account...

The ACF's Electronic Mail Accounts are available free of charge to NYU faculty, staff, and students. Electronic mail (E-mail) is also available automatically to individuals with accounts on ACF mainframes and minicomputers. NYU students, faculty and staff members may apply for E-mail Accounts at any of the ACF microcomputer labs (see inside back cover for locations and hours). You will need to complete a very brief application form and to show your current, valid, NYU I.D.

Faculty and staff members, if they prefer, may also request E-mail Accounts by letter. Please use departmental letterhead showing the department's address and phone number, and include your name, title, campus address and campus phone number.

Please send your request to the Academic Computing Facility Accounts Office, Room 306, Warren Weaver Hall. For additional information on ACF computer accounts, please contact the ACF Accounts Office, at 998-3035.

Altogether, the AIL-L and LAW-L conferences are a useful way to stay on top of a rapidly maturing field. -Stuart Spore

(Stuart Spore is at the NYU Law Library)
spore@acfcluster.nyu.edu

(indexing based on human judgments on the 'meaning' of documents. How this would work in an online environment is a subject of considerable debate. The most plaintive of the messages concerning CALR was one making the point that there was simply 'too much' documentation and that the ultimate solution to the problem was convincing the legal profession to find a 'principled way of ignoring most ... legal authority.'

Altogether, the AIL-L and LAW-L conferences are a useful way to stay on top of a rapidly maturing field.

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(Conferences, continued from page 15)
A European Database Service Via Network

ASTRA is a free service for the distribution of public domain information, offered through the European network EARN, to which there are both Internet and BITNET connections from NYU's campus network. ASTRA provides network access to databases in such fields as chemistry, geology, informatics, pedagogy, and history. Both users and potential providers of databases are invited to contact ASTRA.

At present, ASTRA databases are mainly bibliographic databases that are managed with the ISIS and STAIRS systems. ASTRA's structured databases are managed by a SQL access system, along with the FOCUS and SAS languages.

For more information on ASTRA, issue the following commands.

VM/CMS users: TELL ASTRADB AT ICNUCEVM GET ASTRA INFO
VAX/VMS users: SEND ASTRADB @ICNUCEVM GET ASTRA INFO

The ASTRA user interface may be retrieved with the following command.

VM/CMS users: TELL ASTRADB AT ICNUCEVM GET ASTRA EXEC
VAX/VMS users: SEND ASTRADB @ICNUCEVM ASTRAVAX

If you would like to tell the ASTRA Working Group about databases and interest groups on your node, you may contact them at ASTRADB @ICNUCEVM, CNUCE.CNR.IT and they will send you their questionnaire.

—from an ASTRA release.

United Nations Development Program Brought Burmese Networker to Study at the ACF

From May through December 1991, the Academic Computing Facility played host to a visiting Burmese government employee, U Shwe Dha, who was sent to NYU under the auspices of the United Nations Development Program (UNDP) to study data communications. A maintenance engineer for an IBM mainframe in his native country, U Shwe Dha, better known around NYU as Ronnie, was at NYU to study Novell networks and wide area networks in order to implement a pilot networking program for his government. While in the United States, he procured a file server for his organization.

U Shwe Dha says that he learned a lot of things while he was at NYU, but was mainly interested in Novell Netware. He took courses in voice and data communications, data communications and design, and Novell networks. At NYU, U Shwe Dha was attached to the ACF's Data Communications Group. "In this trip I learned a lot about products and facilities of data communications in the United States," says U Shwe Dha.

While in the United States, U Shwe Dha also attended seminars on networking in Cincinnati, Chicago and San Francisco, including a seminar run by the Black Rock Corporation. In 1986, he attended courses at the IBM Education Center in Toronto, Canada for three months and a two week course at IBM in Bangkok on the maintenance of IBM mainframes.

U Shwe Dha left New York shortly before Christmas, returning to Burma and his son and his wife, who was expecting their second child.

(Gutenberg, continued from page 16)

will make much academic work easier. Texts, for example, could be searched to find quotations or key words. Special computer programs might be used to analyze and compare electronic texts to determine, for example, who the author of an anonymous work might be.

Hart's sole responsibility at Illinois Benedictine College is to build a collection of electronic material. The campus library stores full electronic texts of non-copyright books that students can download onto disks and keep. These can be obtained by individuals at other institutions via network connections (see box).

Hart now has about 1,000 texts in various stages of planning, typing, proofreading and copyright analysis. Recent releases have included Paradise Lost, Peter Pan, The Book of Mormon, and The Federalist Papers.

Hart is looking for volunteers to donate electronic texts. He can be reached by E-mail at HART@VMD.CSO,UIUC.EDU.

—from an ASTRA release.

(Gutenberg, continued from page 16)

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—from an ASTRA release.

Corrected Address for Online Directory of Scholarly Conferences

An article on page 14 of the September issue of this newsletter listed an incorrect network address for the online Directory of Scholarly Electronic Conferences. The correct address is listserv@kentvm.kent.edu or, from the ACFcluster, in "%listserv@kentvm.kent.edu". We apologize for any inconvenience this typo may have caused.

Incidentally, a bound hardcopy version of the Directory has been published and is available for reference from the ACF's Documentation Office (Room 306 Warren Weaver Hall, 998-3036).
Spatial Analysis and Mapping To Be Focus of New NYU Group

New Multidisciplinary Group of Faculty Will Promote Use of Geographic Information Systems at NYU

Faculty from diverse University departments met this past November to explore the need for resources at NYU for generating electronic maps and analyzing spatial data. Also at the meeting were several Academic Computing Facility (ACF) staff members with interests in social science and cartographic software and data. The meeting confirmed the growing use — in many disciplines, for both research and instruction — of the new Geographic Information Systems (GIS) software for the management, display and analysis of computer-based archives of spatial data.

Attendees at this first meeting came from a number of departments and schools, notably Metropolitan Studies (FAS), Economics (FAS), Medicine, Urban Planning (Wagner), Educational Administration (SEHNAF), and Sociology (FAS).

Among the widespread uses for GIS software discussed at the meeting were applications in such fields as:
- Urban Demographics and Planning
- School Administration and Planning
- Economics
- Epidemiology
- Political Science
- Urban Archaeology
- Marketing, Real Estate, and Finance.

The group also focused on the use of the U.S. Census Bureau's TIGER Line Files, which cover the entire U.S., for mapping and analysis of the enormous 1990 U.S. Decennial Census database.

GIS Software Obtained by ACF

As a result of the interest shown at the meeting, the ACF has acquired several copies of ATLAS*GIS for use at its computer labs by NYU faculty and students.

ATLAS*GIS is a well-integrated package that gives the user interactive control over digitized maps and data.

(continued on following page)
Data Sets Recently Acquired by the ACF’s Data Base Archive

The following are some of the data sets that have been acquired by the ACF’s Data Base Archive since the report in the March/May 1991 issue of this newsletter. (The ICPSR numbers, included below for your convenience, are reference numbers assigned by the Inter-University Consortium for Political and Social Research, the organization from which these files were obtained.)

- General Social Surveys, 1972-1990
  (Cumulative file). A file containing data from 17 years of administering the GSS by the National Opinion Research Center. Each year a new “topical module” is added to the survey in order to study some topic in more detail; The 1990 topical module concerns race relations. Some other topics have included occupational prestige, religious socialization, behavior & beliefs, and sociopolitical participation. (ICPSR 9505).


- Panel Study of Income Dynamics, 1968-1987. This survey focuses on economic status, economic behavior, attitudes and demographic information and how it changes over time. There are 6 data files. (ICPSR 7439).

- Survey of Working Conditions, 1969-1970. This survey of 1,533 respondents focuses on many facets of a worker’s job situation. Some 660 variables capture information regarding expectations for the job, compensation, and supervisors, and frequency and severity of work related problems, including any mental or physical health problems. (ICPSR 3507).

- National Assessment of Educational Progress [United States], 1970-1980. Every year between 75,000 and 100,000 students nationwide partake in this survey to assess the knowledge, skill, understanding and attitudes of American students. This study has 22 sets of files. (ICPSR 8072).

- National Survey of Black Americans, 1979-1980. This data file contains over 1400 variables regarding the Black American experience. This comprehensive survey covers topics ranging from demographic information to employment, self-esteem, access to services, crime, community contact, the effects of race on the job, interaction with family and friends, racial attitudes, race identity, group stereotypes, and race ideology. (ICPSR 8512).

- Evaluation of Minnesota’s Felony Sentencing Guidelines, 1978-1984. This study of the impact of Minnesota’s felony sentencing guidelines focuses on its effect on prosecutorial charging practices, plea negotiations and sentencing decisions. This data file also includes information on the offender, the offense and other case characteristics. (ICPSR 9235).

The ACF’s Data Base Archive (DBA) acquires and stores data files for instructional and research purposes at NYU. Assistance in the use of these data files is provided by DBA staff to NYU faculty, researchers and graduate students. The DBA currently holds and catalogues some 700 studies represented by over 2000 data files. More are being acquired continually at the request of researchers at NYU. For additional information on the DBA’s services, or for help in making use of them, please contact ACF consultants Bob Yaffee (998-3402) or Bert Holland (998-3401). Full descriptions of all DBA holdings may be seen by using ACF’s INFO system, and selecting FACILITIES, and then DATABASES.

Robert Burnham and Richard Maisel

New NYU Faculty Spatial Analysis Group

A second outcome of the meeting was the formation of an ongoing University-wide group for discussing and facilitating the use of spatial analyses at NYU. The immediate attention of the group will be focused on determining needs for spatial analysis, and on assisting in the planning and acquisition of further resources within the University for performing such analyses.

In addition, the group will focus on the training of members of the University community in spatial analysis techniques. The first step in this will be a training session organized by the ACF on the use of ATLAS*GIS; this will be conducted early in the spring semester. Also being planned are several seminars in advanced uses of spatial analysis and techniques in this area.

—Robert Burnham and Richard Maisel

Robert Burnham is a Professor of Educational Administration in SEHNAP and Director of its Center for Educational Technology and Economic Productivity. Richard Maisel, a Professor of Sociology in FAS, is devising indices of census archives using GIS. Please see "For further information" on preceding page for E-mail addresses and phone numbers.)
NYU Professor Develops Macintosh-Based Visual Database of Paleolithic Art

Database Will Focus on Paintings, Engravings and Other Artifacts from Western and Central Europe

Using off-the-shelf Macintosh hardware and software, NYU Professor Randall White (Anthropology, FAS) is beginning a project to convert his 10,000-plus slide collection of Paleolithic art into a visual database. This database will focus on paintings, engravings and other artifacts from Western and Central Europe from 40,000 to 10,000 years ago — the last Ice Age. Researchers will be able to study aspects of human culture and evolution before heading into the field. Professor White believes that this database will make NYU a focal point for research in Ice Age art.

A Macintosh IIx, a SuperMac monitor capable of displaying millions of colors, a Ricoh Relax magnetic optical disk drive, and 3M rewritable optical disks comprise the basic system that will be used for data storage and retrieval. The 35mm color slides are inputted using a Barney Scan, a special device that scans slides directly into the computer's memory, unlike most conventional scanners which require that the slide be printed first. When scanning is completed, the image appears on the screen, where it can be fine-tuned for color-balance, brightness and contrast, sharpness and other parameters before being saved to disk.

Once scanned, the images can be organized according to origin, color, texture, date or any other criterion, making them more accessible to scholars and students. In addition, the images from the database become available for other purposes, such as creating teaching slides and to produce newsletters or magazines.

To make this database easy to use, Professor White is planning to employ SuperCard (similar to the HyperCard program that comes with all Macintosh computers). SuperCard will allow the database to be organized as a series of index cards, each containing an illustration and relevant data. Researchers using the database will be able to view several images simultaneously; this allows them to make direct comparisons and to explore new relationships. Controls for manipulating images will be available as well, allowing users to database will intensify.

In addition to the database of Ice Age art, the Macintosh computer is also being used for a project in archaeology in which a closed-circuit camera is hooked up to a microscope. Thin sections of animal teeth and other items that are placed under the microscope can be brought up on the screen and captured with Quicksimage 24 from Mass Systems for further analysis.

The Ice Age art database is in the initial stages of development. Look for more details in future issues of the newsletter.

Karen Strauss
strauss@acfcluster.nyu.edu

For more information...
For an article in which Professor White's work is featured, see U.S. News & World Report, September 16, 1991, pages 53-60, and, in particular, the sidebar "First Murals: Art and Survival in the Ice Age" on page 59.
To find out more about the computer technology being used by Prof. White, call the ACF Faculty Microcomputer Lab at 998-3034.
Bobst Library Offers New CD-ROM Reference Services

This fall, Bobst added several new research tools on CD-ROM to its collection. These self-service computerized indexes are installed on "stand-alone" microcomputers in the Bobst reference centers. CD-ROM stands for "compact disk - read only memory". The disks contain data, digitally encoded onto a laser optical disk, which can be "read" or played multiple times but cannot be changed or erased by the user.

Recent additions are the Expanded Academic Index and National Newspaper Index, the General Business File, and the Modern Language Association Bibliography On Disk. Not new to Bobst, but recently updated, ERIC, an index to all aspects of the field of education, now covers 1966 to the present.

The Expanded Academic Index and National Newspaper Index can be found in General and Humanities Reference Center, main floor and also in the Coles Science Center, ninth floor; the General BusinessFile and ERIC are in the Business and Social Science Reference Center, sixth floor; and the MLA Bibliography is in the General and Humanities Reference Center, main floor. All are available during the reference centers' hours of service.

The Library continues to provide access to a host of other CD-ROM products including ABI/Inform, Dissertation Abstracts Online, Government Publications Index (GPO), Public Affairs Information Service (PAIS), and PsycLIT.

Beginning to arrive in the Business and Social Science/Documents Center through the Federal Depository Library program are census materials on CD-ROM from the Government Printing Office (GPO). Unlike commercial products, most GPO disks do not come with search software but can be used with dBase III or compatible database management software. Additional information from GPO includes the National Trade Data Bank with extensive import-export statistics, the Toxic Release Inventory, and the Congressional Record.

The Center now provides access to the 1990 State census disks with general population information. Additional demographic data from the 1990 census will be shipped over the coming year.

—Nancy Kranich and Lise Dyckman

(Nancy Kranich is Director of Public Services and Lise Dyckman is Instructional Services Librarian at the NYU Libraries.)

New guides to computerized information sources at Bobst

To help patrons using Bobst's growing collection of computerized information sources, the Library has updated and revised three guides in its Information Bulletin series:

- Information Bulletin 6A, "Computerized Information Resources", gives an overview of resources available in Bobst;

These, and all Library Information Bulletins, are available in the Bobst Library Reference Centers and at the Bobst Information Desk. Feel free to pick up copies the next time you are in the Library.

Dialog Classmate Service at Bobst

Bobst Library is continuing to offer all current NYU students and faculty self-service access to Dialog Information Service's Classmate Instructional Program.

Dialog Classmate provides online access to 112 databases in a wide range of subjects, including health sciences, social work and sociology, history, news and current events, psychology, philosophy, chemistry, business, literature, politics and economics. Most databases provide citations, some include abstracts, and full text is available in a few selected databases (for example, newspapers).

To participate, NYU students and faculty must first attend an introductory workshop on online search techniques. Upon completion of the workshop, the Library will provide each workshop attendee with a free password good for one hour of searching. Additional one-hour passwords may be purchased by users.

Introductory workshops will be offered in the Spring 1992 semester, starting in the second week of February (ask at a Reference Desk for details). For those who have used Dialog Classmate but feel a little rusty, there will be a series of three refresher workshops to help them refine their search skills.

—Nancy Kranich and Lise Dyckman
New Macintosh Computers Available at the NYU BookCenters

Features of the PowerBook notebook computers, Macintosh Quadra series and the Macintosh Classic II

Macintosh PowerBook personal computers are small, lightweight systems — known as notebook computers — that let you take your work with you wherever you go. They weigh under seven pounds and yet are powerful enough to run the same applications as desktop Macintosh computers, and are just as easy to use. They're ergonomically designed, with a built-in trackball (used instead of a mouse) and palm rest that let you work comfortably. Every PowerBook comes with built-in networking and file-sharing capabilities. AppleTalk Remote Access software, which lets you connect to another Macintosh computer and an AppleTalk network via modem, is also included. This gives you full access to your office network resources and desktop systems from any telephone line.

PowerBook 100. The PowerBook 100 has a backlit super-twist display and a 20-megabyte internal hard disk. The PowerBook 100 uses a 16-megahertz 68000 Processor and comes with 2 megabytes of memory, expandable to 8 megabytes. To keep weight to a minimum, it uses an optional external Apple SuperDrive. An internal modem is also optional. It measures 8.5 by 11.1 by 1.7 inches and weighs 5.1 pounds. The battery for the PowerBook 100 lasts 2.5 to 4 hours.

PowerBook 140. The PowerBook 140 is more powerful with its 16-megahertz 68030 processor, internal SuperDrive, and either a 20 or 40-megabyte internal hard drive. An optional internal fax/data modem is available, and comes with 2 megabytes of memory, expandable to 8 megabytes. It measures 9.3 by 11.3 by 2.3 inches and weighs 6.8 pounds. The battery for the PowerBook 140 lasts 2.5 to 3 hours.

PowerBook 170. The PowerBook 170, with a fast 25-megahertz 68030 processor, built-in 68882 math coprocessor, and 4 megabytes of installed memory, expandable to 8 megabytes, is the most powerful computer in this series. A backlit active matrix display gives a crisp and clear display. It includes a 40 megabyte hard disk and an internal fax/data modem. Measuring 9.3 by 11.3 by 2.3 inches, it weighs 6.8 pounds. The battery for the PowerBook 170 lasts 2.5 to 3 hours.

The Macintosh Quadra Series

Quadra 700. The Macintosh Quadra 700 provides maximum performance in a desktop Macintosh. Taking full advantage of the latest system design improvements in NuBus and SCSI technology and with its 25-megahertz 68040 processor, it offers nearly double the performance of the Macintosh IIx. It has built-in support for all Apple displays, including the AppleColor RGB 13" (256 colors) and the Macintosh 21-inch Color Display (16 colors). With the video RAM option, color support can be increased. The Quadra 700 has built-in support for Ethernet, which makes high-performance networking a standard feature. Two NuBus slots can be used for special options, such as a video-capture card or a card for controlling laboratory instruments. The Quadra 700 has an Apple SuperDrive and accommodates an 80, 160, or 400-megabyte internal hard disk. It comes with 4 megabytes of RAM, which can be expanded to 20 megabytes.

Quadra 900. Like its smaller sibling, the Macintosh Quadra 900 offers the latest advances in high-performance microprocessor, SCSI, and NuBus technology. The Quadra 900 also has five NuBus expansion slots, allowing you to add even more options. It has four internal expansion bays that can accommodate a variety of storage devices, including an additional Apple SuperDrive, high-capacity hard disk drives, CD-ROM drives, removable cartridge drives, and optical drives. The Quadra 900 includes many of the same standard features of the Quadra 700, including the same 25-megahertz 68040 processor and built-in Ethernet support. It comes with 4 megabytes of RAM, which

(continued on following page)
New Software Available at Educational Discounts at NYU BookCenters

The Book Store has many software packages on sale with educational discounts; below is a partial list. Educational discounts are offered by software publishers and can greatly reduce software prices from their list prices. For example, WordPerfect for Windows for IBM PCs and compatibles lists for $495, but is available from the BookCenters for $135. Aldus SuperPaint 3.0 for the Apple Macintosh lists for $225, but is available through the BookCenters for $99. Contact the BookCenters for a prices and details.

Departmental Software

Many software packages are available as special multiple user packages containing multiple sets of the software or licenses enabling the software to be used on a fixed number of computers. These departmental and lab packages are available at special prices and typically contain multiple sets of disks and one set of documentation. Some of these packages are described here. For additional information, please contact the BookCenters.

Aldus Five User Lab Packs. For IBM PCs and compatibles, PageMaker 4.0 and Persuasion are available. For Macintosh computers, the BookCenters offer discounts on Digital Darkroom 2.0, Freelance Graphics 3.0, Gallery Effects, PageMaker 4.01, Persuasion 2.0, SuperPaint 3.0, and Super 3D.

Borland Lab and LAN Packs. Available for IBM PCs and compatibles are the Paradox 3.5 Lab Pack, Paradox Multi-Pack Academic, Quattro Pro 3.0 Lab Pack, Turbo Pascal 6.0 Lab Pack, Paradox 3.5 LAN Pack, and Quattro Pro 3.0 LAN Pack. To run on a network, both Quattro Pro and Paradox require a full version on your file server. The Quattro Pro and Paradox LAN Packs include a license for adding one user to a network. In addition, the Quattro Pro LAN Pack includes a complete set of documentation and the Paradox LAN Pack includes two of the six manuals.

Borland (Formerly Ashton-Tate) Lab and LAN Packs. For IBM PCs and compatibles, the BookCenters offer dBase IV LAN, dBase IV Lab Pack, dBase IV Additional Workstations, dBase III Plus, and Framework III LAN.

Fox LAN Packs. For IBM PCs and compatibles: Fox Base+ LAN, Fox Pro LAN. For Macintosh computers: Fox Base+ LAN.


Discounts on individual copies are also available for the following software:
SuperPaint 3.0, from Aldus for the Macintosh; SimEarth, from Broderbund for IBM PCs and compatibles; Lotus 1-2-3, from Lotus for Macintosh; WordPerfect Windows, from WordPerfect for IBM PCs and compatibles.

(continued from preceding page)

is upgradable to 64 megabytes.

The Macintosh Classic II

If you are looking for high performance in a compact desktop, the Classic II might be just what you need. It combines the classic Macintosh features — built-in display, Apple SuperDrive disk drive, and networking capability — with a Motorola 16-megahertz 68030 processor. Because it uses the 68030, the Classic II can take advantage of the virtual memory feature of System 7. The Classic II, almost twice as fast as the original classic, includes a 40 or 80-megabyte internal hard disk. It comes with 2 megabytes of memory which can be expanded to 10 megabytes. The Macintosh Classic II also has sound-input and sound-output capabilities, and includes a microphone.

— Kevin Edwards

For further information . . .
Please contact the NYU BookCenters Computer Department at 998-4672 with any questions about the products listed on these pages or for pricing information.

— Kevin Edwards

(Kevin Edwards is Assistant Manager and Technical Support Coordinator at the NYU Book Centers Computer Department.)

Academic Computing and Networking at NYU, January 1992, page 24
News and Notes from NYU Purchasing Services

The Computer Expo, held on November 1 and sponsored by Dollars & Sense had an excellent turnout as people came to see the latest in software, hardware and computing services offered by the 32 exhibitors. We hope that this Expo gave you the opportunity to view products that may be the answer to your computer needs and those of your department.

Among the most popular exhibits were demonstrations of the new Apple Macintosh PowerBook series of notebook computers and the new top of the line Macintosh Quadras. (For more information about these machines, see the item in the Book Centers Section of this newsletter.) Macintosh software, including System 7, Lotus 1-2-3, Microsoft Excel and PowerPoint, and Claris Works, also was well received.

Microsoft Windows, the graphical environment for IBM PCs and compatibles, was very well represented at this Expo with demonstrations of the new Aldus PhotoStyler and Freehand programs, Lotus 1-2-3 and Ami Pro version 2.0, the brand new WordPerfect 5.1 for Windows and the new Microsft products for Windows, Works, Publisher and Money.

Vendors like IBM, Digital Equipment Corporation, Dell, Dynamic Decisions, Everex, Microcomputer Systems, PC Plus and Zenith Data Systems were on hand to show 386 and 486 computers.

Other notable exhibitors included NeXT, Silicon Graphics, and Sun Microsystems. The Academic Computing Facility provided information on computer services and workshops available at NYU and the Book Centers provided information on educational discounts on hardware and software.

We would like to congratulate all Expo raffle winners. A list of winners is posted in the Purchasing Services department, 269 Mercer Street, fifth floor. Any comments regarding the Computer Expo may be directed to Stephen Krause at 998-1032.

Recycled Laser Toner Cartridges

It has been a couple of months since the implementation of the recycled toner program. I would like your opinions on the performance of the recycled cartridges. Please send your comments, explaining any problems you have encountered, to Stephen Krause, NYU Purchasing Services Division, 269 Mercer St., fifth floor.

Product Demonstrations

If your department is interested in having a piece of computer hardware or software demonstrated please contact the Purchasing Department. Several NYU suppliers have suggested that they can provide demonstrations on some of their product lines if there are enough interested parties. Some upcoming demonstrations will include the Hewlett-Packard ScanJet scanner and Deskjet printer, and CoStar's AddressWriter.

Recycling Used NYIJ Computer Equipment

If your department has hardware or software that it no longer uses or if an upgrade is planned and you would like to find a new home for the old equipment, please let the Purchasing Department know.

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<tr>
<th>Department</th>
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<tr>
<td>Property Management</td>
<td>• Epson LQ1050 printer</td>
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<tr>
<td>Contact Larry Pender</td>
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<td>998-1045</td>
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<tr>
<td>SEHNAP/Arts and Art professions</td>
<td>• IBM PS/2 Model 70 with 2MB RAM, 120MB hard disk, VGA monitor and Artisoft Ethernet card</td>
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<tr>
<td>Contact Troy Downing</td>
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<tr>
<td>998-5700</td>
<td>• IBM PC with 640K RAM, two 360KB 5.25&quot; floppy drives, color graphics adapter, and CGA monitor.</td>
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<tr>
<td>TSOA/Cinema Studies</td>
<td>• SEHNAP is interested in trading the IBM systems for comparable Apple Macintosh machines. Call department for details.</td>
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<tr>
<td>Contact Cathy Holter</td>
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</tr>
<tr>
<td>998-1600</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Apple ImageWriter II</td>
</tr>
<tr>
<td></td>
<td>• Juki Printer daisywheel style</td>
</tr>
<tr>
<td></td>
<td>• Apple II</td>
</tr>
<tr>
<td></td>
<td>• Barco video projector (requires cleaning, tuning, and overhaul)</td>
</tr>
<tr>
<td></td>
<td>• 2 IBM XT's (may require repairs)</td>
</tr>
<tr>
<td></td>
<td>• TSOA is interested in obtaining IBM compatible printers. Please call department for details.</td>
</tr>
</tbody>
</table>
New Agreement with Everex

NYU has entered into a direct relationship with Everex Systems, Inc. for the purchase of Everex’s Tempo line of computers and peripherals. For pricing on the current educational bundles and individual components, call 998-1032.

<table>
<thead>
<tr>
<th>EVEREX</th>
<th>Tempo 386cx/16</th>
<th>Tempo 386cx/20</th>
<th>Tempo 386/25 Upgradeable to 486/25</th>
<th>Tempo 386/33 Modular upgrade</th>
<th>Tempo 486/33 Modular upgrade</th>
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<tr>
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<td>$1795</td>
<td>$2145</td>
<td>$2595</td>
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<td>Bundle 4A</td>
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<td>i386</td>
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<td>Optional</td>
<td>Optional</td>
<td>Optional</td>
<td>Built in</td>
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<tr>
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<td>14&quot; 28 dot pitch</td>
<td>14&quot; 28 dot pitch</td>
<td>14&quot; 28 dot pitch</td>
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<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
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<tr>
<td>Keyboard</td>
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<td>101 Key</td>
<td>101 Key</td>
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<tr>
<td>Software</td>
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<td>MS-DOS 5.0</td>
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<tr>
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<td>3 months</td>
<td>3 months</td>
<td>3 months</td>
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<td>1 year parts and labor</td>
<td>1 year parts and labor</td>
<td>1 year parts and labor</td>
<td>1 year parts and labor</td>
</tr>
</tbody>
</table>

One-year on-site service and three-year extended service contracts are available. Contact the Purchasing Department for further information.

The results of this inquiry will be published in the next issue of Academic Computing and Networking at NYU. Please see accompanying table for products currently available.

The value of each product is decided upon by the departments or persons interested in the disposition or acquisition of it. The Purchasing Department is only putting those who wish to barter in touch with one another. This arrangement applies only to departmental acquisitions. Equipment tagged by the Property Management Office requires that the departments involved in the transaction inform Property Management in writing that the equipment has been relocated. Please contact Stephen Krause with product information. He can be reached by phone at 998-1032 or at the E-mail address listed below.

**Computer Maintenance Agreements**

The Purchasing Services Division has arranged support services with three maintenance companies for the 1991-92 fiscal year. Informational brochures for CMI, Key Systems, and Computerland were mailed out to the University community in November. Each service company offers annual maintenance agreements, repair service on a per-call basis (time and materials), warranty service (on certain manufacturers), and preventive maintenance calls. If you require additional information or copies of the service brochures, contact the Purchasing Services Department.

**Computer Maintenance Inc.** CMI is located at 160 Pearl Street, sixth floor, New York, NY 10005. If you have any questions concerning PC repairs or maintenance please contact John Funkhouser at (212)425-8900.

**Key Systems.** Key is located at 936 Broadway, New York, NY 10010. If you have any questions concerning PC repairs or maintenance please contact Lorraine Muscara at (212)979-1400.

**Computerland.** Computerland Corporation, based in Pleasanton, CA acquired the Secaucus, NJ based Computerland franchise on November 1, 1991. All current service agreements will now be handled through Computerland Corporate located at One Penn Plaza, New York, NY. 10119. Computerland has over 50 service technicians and 20 systems engineers based in NYC. For PC maintenance or repair service Computerland can be reached at (212)269-6600 or (212)213-6446.

—Stephen Krause
Senior Buyer
NYU Purchasing Services Division (krause@accluster.nyu.edu).
Visualization, Graphics, Printing

Free AVS Trial Licenses Obtained through ACF Agreement

Five additional one-year licenses for AVS (Application Visualization System) have been granted for use at NYU under a special agreement between the ACF and AVS, Inc., formerly Stellar, Inc. The new trial licenses enable use of this powerful scientific visualization environment on several different types of high-end desktop workstations.

Copies of the software will be installed on a Silicon Graphics IRIS workstation at the NYU Medical Center for use by the Hippocrates Project; on an IBM RS/6000 at the Chemistry Department (FAS); a Silicon Graphics Personal IRIS at the Robotics Lab of the Computer Science Department (FAS); on a SUN IPX at the Medical Center’s Brain Research Lab; and a Silicon Graphics IRIS 4D/80 GT workstation in the ACF’s Visualization Center.

AVS was originally developed for use on the Stellar mini-supercomputer. Versions for a variety of other machines have been produced in recent months. AVS has been used for scientific visualization at the ACF’s Visualization Center on a Stellar mini-supercomputer for some time. It provides a powerful set of tools that — along with a growing library of pre-programmed modules — allow scientific researchers to view their results graphically in a “windowed” environment, often with little or no programming required. For further information on AVS, please contact Ed Friedman at the ACF (friedman@acfcluster.nyu.edu or 998-3051).

New AVS Modules via Network

AVS modules are now available to AVS users via network from the newly established International AVS Center and AVS User Group, based at Research Triangle Park in North Carolina. An electronic mail message sent to avsemail@ncsc.org will bring you, via E-mail, a list of all available modules and a request form. Or, you can ftp to avs.ncsc.org, log in as anonymous and use your E-mail name for the password; a menu will then guide you through the module collection. For more information on the AVS Users Group or on AVS modules, send E-mail to avs@ncsc.org.

Ed Friedman at the ACF (friedman@acfcluster.nyu.edu or 998-3051).

— reported by Ed Friedman

New Version of NCAR

A new version of NCAR has just been installed on all ACF computers and workstations on which it is offered. The new release, Version 3.1.2, has some bug fixes and performance improvements, as well as a few additional features. Copies of an update document are available from the ACF Information Services Office (306 Warren Weaver Hall; 998-3036).

NCAR is an extensive package of graphics subroutines from the National Center for Atmospheric Research. It has been used for some time at NYU by researchers in the sciences for the visualization of their results, and continues to be a popular graphics tool. For more information on NCAR and the new release, contact Ed Friedman (friedman@acfcluster.nyu.edu or 998-3051).

Enhancement of the ACF Visualization Center Facilities

New equipment and room for small classes will be added

A new room adjacent to the current center will be equipped with Silicon Graphics and Macintosh workstations. These machines and associated software will be used for instruction in such fields as molecular modeling, scientific visualization, and arts and media.

During the past year there has been an increased use of molecular modeling and scientific visualization software and equipment at the Visualization Center by students in Biology, Chemistry, Physics, and Mathematics. In the Spring 1992 semester, classes in the Tisch School of the Arts will also be employing the resources of the Center.

A Laser VideoDisk Analog WORM (write-once-read-many) Recorder and associated equipment are being acquired to permit the recording of images generated from the scientific and arts and media applications at the Center. These images can then be edited and transferred to various video tape formats.

The new workstations in the room will include a Silicon Graphics Personal IRIS, an IRIS Indigo, and Macintosh Quadra systems.

For more information about these facilities, call either Ed Friedman (998-3051), or Philip Galanter (998-3041).

— Ed Friedman (friedman@acfcluster.nyu.edu)
ACF's Photo-Typesetter Services Are Now On-Line

Imagesetter Offers High-Quality Graphics and Publication Masters on Film and Paper

Starting this Spring, the ACF, with the cooperation of NYU's Public Affairs Department, will offer new photo-typesetting services using a Varityper 4000. The new Varityper 4000 is a state-of-the-art, PostScript-based electronic typesetting system. Also known as an imagesetter, the Varityper produces output on either resin-coated paper or film at resolutions of up to 2400 dots per inch (dpi), or eight times the quality of popular laser printers like the Hewlett-Packard LaserJet series, the Apple LaserWriters, and the QMS Imagens, which print at 300-dpi.

Varityper output will be an overnight service from the ACF, with a fee, currently estimated at $2.50 per page, which may be adjusted to cover operational costs. Files will be sent to the Varityper via NYUNET, the University-wide network; however, before printing users will need to make arrangements with John Kesich at the ACF (kesich@acf3.nyu.edu or 998-3047).

The Varityper offers a large variety of resident fonts (please see box) and will print any PostScript font, such as those from Adobe or those used with TeX. Since the Varityper uses the PostScript Page Description Language, documents can be printed on 300-dpi PostScript printers such as the Apple LaserWriter or the QMS Imagens for proofing before being sent to the Varityper for final output.

Publications that include tints, digital halftones and complex art make the best use of the Varityper, since resolutions above 1000-dpi provide the crisp, smooth output required for quality work. (Halftoning is a technique for reproducing photographs and other continuous tone images.) For most fast-turnaround documents, with short shelf-life and without complex graphics — flyers, reports, price lists and the like — 300-dpi output is both adequate and efficient.

The Varityper makes it possible to produce four-color “separations” for submission of camera-ready copy in which full-color illustrations are used. The Varityper allows output to resin-coated paper, and to film as either a positive or negative image (which one you need depends on the requirements of your printer). The Varityper outputs on rolls — rather than sheets — of paper and film, allowing output to be up to 11 inches wide with full bleeds and crop marks.

A number of departments at NYU have already expressed interest in using the Varityper, including the NYU Office of Public Affairs, which expects to use the Varityper for camera-ready copy for the NYU Hotline and for NYU Today. The Varityper will also be used for this newsletter, starting with the next issue.

Imagewriters print photographically on resin-coated paper or film. Laser printers transfer and fuse toner to paper. The ability to go to film further increases the sharpness of the final image because it eliminates generation of duplication that would be required at the printer. One disadvantage with film, however, is that you cannot paste in a last minute correction by hand the way you can with paper; you have to reprint the entire page.

Some notes about printing at higher resolutions: Printing at 2400 dpi will change the look of your document considerably and may cause changes you would not anticipate. Therefore, it is advisable to run a test page of your document before printing your final camera-ready pages.

Text, lines and graphics appear sharper than if printed on a 300-dpi printer, but they may also appear thinner and somewhat less bold. Rules, shades and type weight are lighter at higher resolutions. Therefore, type that looks tight on a 300-dpi laser-printed page might look just fine at 2400-dpi. The higher resolution also means that shades that appear crosshatched when printed on a 300-dpi printer, will come out as a truly solid shade of gray when printed on the Varityper.

—Karen Strauss (strauss@acfcluster.nyu.edu)

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Some of the fonts available on the ACF's new Varityper 4000. In all, over 95 fonts are currently installed.

- Benguiat-Bold
- Benguiat-Book
- Bookman-Demi
- Bookman-DemiItalic
- Bookman-Light
- Bookman-LightItalic
- CenturyOldStyle-Bold
- CenturyOldStyle-Italic
- CenturyOldStyle-Regular
- Cheltenham-Bold
- Cheltenham-BoldItalic
- Cheltenham-Book
- Cheltenham-BookItalic
- FranklinGothic-Book
- FranklinGothic-BookOblique
- FranklinGothic-Demi
- FranklinGothic-DemiOblique
- FranklinGothic-Heavy
- FranklinGothic-HeavyOblique
- FritzQuadrata-Bold
- FritzQuadrata-BoldItalic
- Future-Condensed
- Future-CondensedBold
- Future-CondensedBoldOblique
- Future-CondensedExtraBold
- Future-CondensedExtraBoldOblique
- Galliard-Bold
- Galliard-BoldItalic
- Galliard-Italic
- Galliard-Roman
- Garamond-Bold
- Garamond-BoldItalic
- Garamond-Demi
- Garamond-DemiOblique
- Garamond-Hebrew
- Garamond-Light
- Garamond-LightItalic
- Goudy
- Goudy-Bold
- Goudy-BoldItalic
- Goudy-Italic
- JansonText-Bold
- JansonText-BoldItalic
- JansonText-Italic
- JansonText-Roman
- NewCenturySchlbk-Bold
- NewCenturySchlbk-BoldItalic
- NewCenturySchlbk-Italic
- NewCenturySchlbk-Roman
- ZapfChanceryMediumItalic
Minis, Mainframes, and Supers

Mathematical and Statistical Routines from NAG

Part of a Series of Articles on Mathematical Software
Available at the ACF

Online help is now available to NYU users of NAG. The NAG Library is a collection of mathematical and statistical subroutines developed by the National Algorithm Group Library Services located in Oxford, U.K. These routines are available on the ACF cluster of VAX/VMS machines and UNIX systems at NYU. A new version, Mark 14, has been installed on all of these systems.

It should be noted that all the NAG routines use double precision arithmetic requiring the user to use double precision in his or her calling program.

On the ACF cluster, information about the contents of the library and its usage can be obtained by typing help nag. Documentation can be obtained by typing print nyu$ag:nagid.doc. In addition, NAG supplied volumes describing the subroutines are available for reference from the ACF consultants in Room 307 and in the CIMS Library on the 12th Floor of Warren Weaver Hall. Also, copies of the NAG Mini Manual which gives a brief description of each subroutine can be obtained for reference from the ACF consultants in Room 307 Warren Weaver Hall, and LC-7 Tisch Hall or for loan from the CIMS Library. The writeups should be read for the subroutines' specifications since some of the routines are quite restrictive. A loan copy of the NAG documentation is also available from the ACF Documentation Office, Room 306 Warren Weaver Hall.

The object code of the subroutines is located in a library file and can be linked using nyu$ag:nag/lib on a link control statement. For example,

\[
\text{link my.obj, nyu$ag:nag/lib}
\]

On UNIX systems information about the NAG Mark 14 Library can be obtained from the newly installed NAG Online Information Supplement: type naghelp to use it. A user must have /usr/local/lib in his path. To link the library use -lnag on the compile command line.

The NAG library includes algorithms for such topics as: Ordinary Differential Equations, Partial Differential Equations, Numerical Differentiation, Integral Equations, Interpolation, Curve and Surface Fitting, Matrix operation, Eigenvectors, Simultaneous Linear Equations, Linear Algebra support routines, Correlation and Regression Analysis, Analysis of Variance, Random Number Generators, Univariate Estimation, Non-Parametric Statistics, Contingency Table Analysis, Time Series Analysis, Operations Research, Sorting, Error Trapping, Constrained Non-Linear Least Squares problems and Mixed Integer Linear Programming. A new group of routines on Multivariate Analysis has been added.

---Frances Bauer

bauer@acfcluster.nyu.edu

Some Notes for Users of the ACF's IBM Mainframe

The following updates will be of interest to users of the WYLBUR and VM/CMS systems on the ACF's IBM mainframe.

**Changed file name conventions.** As announced in the previous issue of this newsletter, all files have been renamed from the old format, WYLGGUUU.filename, to the new GGUUU.filename format.

**Conversion to cartridge-style tapes.** All permanent TMS reel-type tapes are currently being copied over onto 3480-type tapes. All TMS tapes will henceforth be cartridges (with 02XXXX numbers). Users may still read and write on reel-type tapes which they install in the tape-library as temporary (905XXX) tapes. An ACF document describing the use of cartridge tapes is available from the ACF consultants in Room LC-7, Tisch Hall.

**Improved full-screen access.** An improved way of reaching full-screen WYLBUR as well as full-screen CMS has been installed. An ACF document describing the new procedure is being written, and will be available from the ACF consultants in Room LC-7, Tisch Hall and from the ACF Documentation Office (Room 306, Warren Weaver Hall) by the beginning of the spring semester.

**Internet from CMS.** On CMS, files can now be sent to Internet addresses using the following command:

\[
\text{SENDTCP frame ftype fmode TO user1 AT internet address}
\]

**Online XEDIT tutorial.** Also on CMS, a new tutorial has been installed for the XEDIT editor. It can be invoked by typing SLFTEACH. For additional information on any of the above, please contact the ACF consultants in Tisch Hall (Room LC-7, 998-3434).

---Bert Holland

(holland@acfcluster.nyu.edu)

---Frances Bauer

bauer@acfcluster.nyu.edu
From the SIS Project

NYU’s Student Information System Aids Students, Faculty, and Staff

Networked access from departments and voice-delivered grades and registration are among the new and upcoming features of SIS.

The Student Information System (SIS) is a comprehensive system for providing and managing information about NYU students — information needed for student advisement and registration, for the reporting of student grades, billing, the granting and management of financial aid, for the scheduling of classes, and so on. The overall goal of employing a system like SIS is to facilitate and speed all of these operations for NYU students, staff, and faculty.

SIS is not yet completely in place. Some of the extensions of the system that are slated for this semester and the coming year may be of particular interest to faculty and administrative staff. This article is a brief account of SIS implementation at NYU, and a preview of what is to come.

Early Applications: Registration and Admission
Implementing a system like SIS for a university of NYU’s size is quite a task; typically it is done piece by piece over a number of years, each piece or module adding a different function or another set of data to the system as a whole. In addition, careful monitoring is required at each step to ensure that the system responds well to the real-life demands of the individuals and units using it. At NYU, implementation of SIS has required the cooperation of many units within the University — the University Computer Center and the SIS Project Office, as well as such data-generating offices as the Bursar’s, Registrar’s, Admissions, and Financial Aid, for example.

SIS was first used at NYU during the Fall 1988 registration for student ID control purposes, resulting in the creation of a single repository for all students, containing one, correct ID number for each student. New workstations for cashiers in the Bursar’s Office, implemented at about the same time, validated the newly input ID numbers against SIS, thereby eliminating one of the major problems of the then-current Bursar system: incorrect ID numbers.

By October 1988, admissions information for the Fall 1989 semester was going into SIS. In December 1988, SIS was already being used to create the catalog of all courses offered at NYU, as well as the schedule of courses for the Fall 1989 semester.

In August 1989, a pilot was run, in which SIS was used in registration — a semester ahead of schedule — for Fall 1989 courses given by four of the graduate schools, as well as by the School of Law and the College of Dentistry. By November 1989, the SIS tuition and fee calculation functionality was in place for Spring 1990, along with University-wide registration using SIS.

Additions in the Past Year
The automated generation of academic transcripts through SIS was in place in April 1991 for the production of Spring 1991 transcripts. Starting this past May, we introduced the student accounts receivable system. With the implementation of this module, NYU now has information on student accounts available through an on-line system, and can provide regular bills to students for their tuition-related expenses.

Also during Spring 1991, we began to provide school-based access to SIS, enabling authorized administrative staff members, working from offices within the schools, to retrieve needed information from the SIS system via the campus network. We began with installations in central sites within the schools, usually in the Dean’s or the advisement office.

Currently under way
As this newsletter goes to press, we are extending school-based access to the departmental level, so that authorized staff in academic departments can retrieve SIS information via network links, conveniently, in departmental offices. We plan to have this in place during the Spring 1992 semester.

Implementation of the Financial Aid system is also under way. Once the University’s Financial Aid function becomes part of SIS, that office, too, will be able to benefit from the integrated nature of the SIS system, serving students more efficiently and providing better fund management. The Financial Aid Office will begin using SIS for the awards to be issued for the 1992-93 academic year.

A third implementation project...
currently underway — Voice Response Systems — will have a very noticeable impact on the University.

**Voice-delivered grades and registration**

In January 1992, a pilot project will be in place to allow students from the College of Arts and Science to call SIS from a touchtone phone and receive an automated voice report of the grades that they have earned during the Fall '91 semester. The availability of this grade reporting system will be expanded to the rest of the University in future semesters.

The implementation of the SIS Voice Response Systems will continue with Voice Response Registration. During the Fall 1992 pre-registration this coming April, graduate students will be eligible to register via interactive telephone sessions. This will be extended to SCE pre-registration in August for the Fall semester, and then to undergraduates in November 1992, for Spring 1993 registration.

**Where are we going?**

Work is just getting underway on a room scheduling module. We expect to license a specialized software package which will enable the Room Assignments Office to optimize the scheduling of classes into classrooms, allowing us to better utilize the existing classroom space. This new system is expected to be ready for use in assigning classes for the Fall 1993 semester.

In addition, we are now kicking off a phased implementation of the Advisement/Degree Audit (On-Course) module. The project involves incorporating into SIS the graduation requirements for all majors offered at NYU, as well as graduate degrees and theses. By using this in conjunction with the academic information already resident within the SIS system about each student, we will soon be able to produce for students better and more up-to-date information about their progress toward their degrees than we have been able to do heretofore. The first school is expected to be able to use this feature in April 1992; the implementation will continue through Fall 1993.

The last phase of the SIS implementation deals with Housing and Board. One part of this project is the creation of a NYU-developed Housing Module as an integral part of the Student Information System. This would be used for the Fall 1993 semester. The second part is the inclusion of housing and dining charges on a student's Bursar account, scheduled for June 1993 and the Fall 1993 semester.

Comments and questions may be addressed to the authors of this article.

-Fred Cohen and Max Goldstein

(Fred Cohen and Max Goldstein are, respectively, Director and Executive Director of the SIS Project.)

*(Fall '91 Colloquia, continued from page 2)*

A new series of colloquia is being planned for the Spring '92 semester, as we go to press: please see page 6 for a brief announcement.

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Upcoming Events

Computing Across the Curriculum; Interop '92

The Third Annual Computing Strategies Across the Curriculum will be taking place on April 3 and 4, 1992, at the University of Vermont. The conference will explore strategies to enhance the collegiate curriculum through the use of computers, networks, and media. Last year this conference drew over 350 participants from the Eastern United States and Canada.

This year's conference will coincide with The Calculated Image, an art exhibit at the University of Vermont's Fleming Museum, featuring computer generated images produced by artists and engineers. Conference topics will include art, imaging, and design, as well as networking, hypermedia and courseware authoring, libraries and media services, user support and training, integration of academic and administrative systems, and research and teaching in all academic areas.

The conference will include presentations and workshops using Macintosh, MS-DOS and Silicon Graphics equipment.

For more information, contact: CSAC Program Committee, University Computing Services, 238 Waterman Building, University of Vermont, Burlington, Vermont, 05405, Phone: 802-656-3316, Fax: 802-656-8429, Internet: csac@uvmvm.uvm.edu

—From 31-Oct-91, ICUL, Instructional Computing Update Newsletter

The 7th Interoperability Conference and Exhibition, Washington, D.C., scheduled for May 18-22, is a conference and exhibition focusing on multivendorm interoperability. There will be in-depth tutorials, conference sessions, and an exhibition of over 200 vendors. Plenary speakers, talking on "The Network Computing Decade," will be Mitchell D. Kapor, Lotus Development founder and Dixon Doll, telecommunications industry expert. For more information, contact: Interop, Inc., 480 San Antonio Road, Suite 100, Mountain View, CA, 94040-1219; 1-800-INTEROP ext 2502; Fax 415.949.1779

—From INTEROP conference brochure

Papers and Competitions

ICEBOL6. From October 15-16, 1992, the Sixth International Conference on Symbolic and Logical Computing (ICEBOL6) will take place at Dakota State University in Madison, South Dakota. ICEBOL6 is designed for teachers, scholars, and programmers who want to meet to exchange ideas about computer programming for non-numeric applications—especially those in the humanities. Topics of discussion will include artificial intelligence and expert systems, as well as a wide range of analyses of texts in English and other natural languages. In addition to a focus on SNOBOL4, SPITBOL, and Icon, ICEBOL6 invites presentations on textual and logical processing in a variety of programming languages such as Prolog and C.

Abstracts of proposed papers and requests for registration materials may be sent to: Eric Johnson, ICEBOL Director, 114 Beadle Hall, Dakota State University, Madison, SD 57042 or via electronic mail to JOHNSONE@DSUV.DSU.EDU

—From an ICEBOL release

The 1992 EDUCOM Higher Education Software Awards Competition. The EDUCOM Higher Education Software Awards Program was established in 1987 to improve and encourage educational software and computer-based teaching innovations in higher education. Products and innovations are judged by a national panel of distinguished faculty.

Disciplines for the 1992 competition include Natural Sciences, Social Sciences and Accounting. The deadline for submissions is February 24, 1992.

To receive entry information, contact the Higher Education Software Awards Program, attn.: Gail Miller, Computer Science Center, Building 224, The University of Maryland, College Park, MD, 20742-2411, or E-mail: AWARDS@CRYSTAL.UMD.EDU

EDUCOM is a non-profit consortium of over 650 colleges and universities, with over 120 corporate affiliates. Founded in 1964, EDUCOM provides a forum for the exchange of ideas on the critical issues related to computing in higher education.

—From an EDUCOM release

Additional Events

• March 3-4. ACM 1992 Computer Science Conference, Kansas City, MO. Contact: AORAWAL@VAX2.CSTP.UMKC.EDU
• March 5-6. 23rd SIGCSE Technical Symposium, Kansas City, MO. Contact: HARTMAN@ILSTUBITNET or WHITE@IPFWC.VAX.BITNET
• March 12-15. 3rd Annual Conference on Technology and Teacher Education, Houston, TX. Contact: AACET@VIRGINIA.EDU
• March 23-26. 6th International Parallel Processing Symposium, Beverly Hills, CA. Contact: ABSTRACTS@SUG.ORG
• March 25-27. National NET '92, Washington, D.C. Contact: NET92@EDUCOM.EDU
• April 3-4. Computing Strategies Across the Curriculum, Burlington, VT. Sponsor: the University of Vermont. Contact: CSAC@UVMVM.UVM.EDU
• April 7-10. EP92 (Conference on Electronic Publishing), Lausanne, Switzerland. Contact: EP92@ELSI.EDF.LCH
• May 4-7. 1992 Conference on Computing for the Social Sciences, Theme: Gateways to the Future, Ann Arbor, Mich. Sponsor: the Social Science Computing Association in cooperation with the Bureau of the Census and the Oak Ridge National Laboratory. Contact: ALBERT F ANDERSON@UMCUCUMICL.EDU
• June 15-18. INET '92 (International Networking Conference), Kobe, Japan. Contact: INET92@EDUCOM.EDU
• Aug 7-12. Seminar on Academic Computing, Snowmass, CO. Contact: DIBIRD@ORSTATE
• July 7-9. 3rd International Conference on Computers for the Handicapped, Vienna, Austria. Contact: (Tel) +43-1-5120235; (Fax) +43-1-5137735
• Oct 28-31. EDUCOM '92, Baltimore, MD. Contact: CONF@EDUCOM
### Spring '92 at the ACF

**Important Dates for ACF Users**

#### January

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jan. 20*</td>
<td>Instructors apply for Spring 1992 Class Accounts as early as possible. <strong>holiday hours</strong></td>
</tr>
<tr>
<td>Jan. 22 - Feb. 11</td>
<td>(Wed. - Tues.) Students in courses associated with Class Accounts register for computer use for spring semester</td>
</tr>
<tr>
<td>Jan. 22</td>
<td>(Wed.) Spring semester begins. <strong>regular hours</strong></td>
</tr>
</tbody>
</table>

#### February

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
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</thead>
<tbody>
<tr>
<td>Feb. 17*</td>
<td>(Mon.) Presidents' Day                                               <strong>holiday hours</strong></td>
</tr>
</tbody>
</table>

#### March

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
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</thead>
<tbody>
<tr>
<td>March 16 - 21</td>
<td>(Mon. - Sat.) Spring Recess                                           <strong>regular hours</strong></td>
</tr>
</tbody>
</table>

#### April

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>April 26</td>
<td>(Sun.) Founders Day                                                   <strong>regular hours</strong></td>
</tr>
<tr>
<td>April 27, onward</td>
<td>(Mon.) Instructors may apply for Class Accounts for both summer sessions. <strong>regular hours</strong></td>
</tr>
<tr>
<td>Apr. 29 - May 13</td>
<td>(Wed. - Wed.) Students who expect Incompletes in spring semester courses should apply for computer account extensions. (Instructor's signature required.) <strong>regular hours</strong></td>
</tr>
<tr>
<td>Apr. 29 - May 13</td>
<td>(Wed. - Wed.) Students with spring semester Class Accounts should archive all files they wish to save after May 13. <strong>regular hours</strong></td>
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</table>

#### May

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
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<tbody>
<tr>
<td>Through Aug. 31</td>
<td>(Mon.) Individual Account holders who will not be returning for 1992/93 should archive their files. <strong>regular hours</strong></td>
</tr>
<tr>
<td>May 6</td>
<td>(Wed.) Student Class Accounts issued for the spring semester expire. <strong>regular hours</strong></td>
</tr>
<tr>
<td>May 6</td>
<td>(Wed.) Individual Account holders should apply for annual renewal of their accounts before leaving for the summer. (Individual Accounts expire on Aug 31.) <strong>regular hours</strong></td>
</tr>
<tr>
<td>May 6 - 13</td>
<td>(Wed. - Wed.) Spring semester final examinations                      <strong>regular hours, plus Sundays</strong></td>
</tr>
<tr>
<td>May 13</td>
<td>(Wed.) Spring semester ends.                                           <strong>regular hours</strong></td>
</tr>
<tr>
<td>May 13, onward</td>
<td>(Wed.) Instructors may begin to apply for fall semester computer Class Accounts now. <strong>regular hours</strong></td>
</tr>
<tr>
<td>May 14</td>
<td>(Thurs.) Commencement                                                 <strong>regular hours</strong></td>
</tr>
<tr>
<td>May 25*</td>
<td>(Mon.) Memorial Day                                                    <strong>holiday hours</strong></td>
</tr>
<tr>
<td>May 26</td>
<td>(Tues.) ACF's Summer Hours begin.                                      <strong>hours to be announced</strong></td>
</tr>
<tr>
<td>May 26</td>
<td>(Tues.) Summer Session I begins.                                       <strong>hours to be announced</strong></td>
</tr>
<tr>
<td>May 26 - June 9</td>
<td>(Tues. - Tues.) Students with Summer Session I Class Accounts register for computer use. <strong>hours to be announced</strong></td>
</tr>
</tbody>
</table>

*University holiday

**Please see inside back cover for the ACF's regular and holiday hours.

§Toward the end of each semester, the ACF may open one or two additional sites on Sundays to help students with their end-of-term preparations. Hours and locations to be announced.
New computer users at NYU are welcome to take part in the ACF's introductory-level "walk-in" tutorials. Reservations are not required. Simply arrive a few minutes early at the site where the tutorial is being given. There is no charge, but participants should have a current, valid NYU I.D. In addition, some VMS, UNIX and IBM mainframe tutorials require a computer account. Faculty may also arrange tutorials specially for their classes or research groups. In some instances, it may be possible to arrange for training to take place at a location selected by the requesting instructor or department. For IBM WYLBUR or VM/CMS, call Ivor Smith (998-3434); for all other systems, Frank LoPresti (998-3398). All tutorials are about one hour long.

**MS-DOS (IBM PC)**
Education Building, second floor

**Introduction**
- Thursdays 3:00 pm
  - Feb. 6
  - Apr. 2
  - Mar. 5
  - June 4

**Intermediate**
- Thursdays 3:00 pm
  - Feb. 13
  - Apr. 9
  - Mar. 12
  - June 11

**Advanced**
(Norton Utilities)
- Thursdays 3:00 pm
  - Feb. 20
  - June 18
  - Apr. 16

For dealing with disk problems like injured segments and fragments and for unerasing (recovering) files on non-Windows systems, Norton Utilities is a great addition to DOS. It also provides a file management system and an editor.

**WordPerfect (IBM PC)**
Third Ave. No. Res. Hall, basement

**Mondays** 12:30, 5:30 pm
Jan. 27 through June 22
except Feb. 17 and Mar. 16

**Microsoft Works**
(PC, Mac)
Third Ave. No. Res. Hall, basement

**Tuesdays** 5:30 pm
Jan. 28 through June 23
except Mar. 17

**SPSS/PC+ (IBM PC)**
Education Building, second floor

**Wednesdays** 6:00 pm
Feb. 5
Apr. 1
Mar. 4
June 3

A useful tutorial for E-mail users who want to combine E-mail with word processing on micros and for VMS and UNIX users who want to work on the micro and then upload. Telnet, FTP and LISTSERV access will be discussed. Recommended as a first tutorial for new users of electronic mail or of the UNIX and VMS (ACF cluster) computers at NYU.

**Uploading and Downloading**
(formerly micros to mainframes)

Education Building, second floor, 12:00 pm
Feb. 5 through June 27 when classes are in session

For IBM/PC users
Wednesdays
For Macintosh users
Fridays

**Electronic Mail**
Using electronic mail at NYU. Two types of tutorials are given, reflecting two types of microcomputers from which E-mail might be accessed at NYU.

**Introduction**
Education Building, second floor. Meets when classes are in session.

**From an IBM/PC**
Education Building, second floor
Jan. 28 through May 5
Tuesdays noon

**From a Macintosh**
Education Building, second floor
Feb. 3 through June 27
Mondays noon

**WYLBUR**
(IBM mainframe)
Tisch Hall, Room LC-8
Participants should have Academic WYLBUR accounts.

**Mondays** 5:30, 6:30 pm
Jan. 27
Feb. 3, 10, 24

**Thursdays** 5:30, 6:30 pm
Jan. 30
Feb. 6, 13, 20, 27

**Introductory Lectures**
Warren Weaver Hall, Room 102

**Mondays** 5:30, 6:30 pm
Jan. 27
Feb. 3, 10, 24

**Thursdays** 5:30, 6:30 pm
Jan. 30
Feb. 6, 13, 20, 27

**Fridays** 6:00 pm
Jan. 31, Feb. 7, 14, 21
UNIX  
(VAX and SUN)†
Third Ave. No. Res. Hall, basement

<table>
<thead>
<tr>
<th>Mondays</th>
<th>4:00 pm</th>
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<tbody>
<tr>
<td>Feb. 3 through June 27 when classes are in session</td>
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<table>
<thead>
<tr>
<th>Mondays</th>
<th>6:30 pm</th>
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<tbody>
<tr>
<td>Feb. 10, 24 Apr. 6, 20 May 4, 18</td>
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<tr>
<td>Mar. 9, 23</td>
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<table>
<thead>
<tr>
<th>Thursdays</th>
<th>6:30 pm</th>
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</thead>
<tbody>
<tr>
<td>Feb. 6, 20 Apr. 2, 16, 30 May 14, 28</td>
<td></td>
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<tr>
<td>Mar. 5, 19</td>
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</tbody>
</table>

VMS  
(VAX)†
Third Ave. No. Res. Hall, basement

<table>
<thead>
<tr>
<th>Tuesdays</th>
<th>11:30 am</th>
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</thead>
<tbody>
<tr>
<td>Feb. 3 through June 27 when classes are in session</td>
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</table>

<table>
<thead>
<tr>
<th>Mondays</th>
<th>6:30 pm</th>
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<tbody>
<tr>
<td>Feb. 3, 17 Apr. 13, 27 May 11, 25</td>
<td></td>
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<tr>
<td>Mar. 2, 16, 30</td>
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<table>
<thead>
<tr>
<th>Thursdays</th>
<th>6:30 pm</th>
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<tbody>
<tr>
<td>Feb. 13, 27 Apr. 9, 23 May 7, 21</td>
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<tr>
<td>Mar. 12, 26</td>
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</tbody>
</table>

VM/CMS  
(IBM mainframe)†
Upon request, by appointment; call Ivor Smith at 998-3434.

<table>
<thead>
<tr>
<th>For additional information call:</th>
</tr>
</thead>
<tbody>
<tr>
<td>IBM WYLBUR</td>
</tr>
<tr>
<td>VM/CMS</td>
</tr>
<tr>
<td>Ivor Smith</td>
</tr>
<tr>
<td>998-3434</td>
</tr>
<tr>
<td>Frank LoPresti</td>
</tr>
</tbody>
</table>

Karel * (Mac)
Offered at the request of the Computer Science Department (FAS) for students in A22.002. (Students must bring a double-sided, double-density 3 1/2 inch diskette.)

Education Building, second floor

<table>
<thead>
<tr>
<th>During February</th>
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</thead>
<tbody>
<tr>
<td>Mon., Wed., Fri. 10:00 am, 4:30 pm</td>
</tr>
<tr>
<td>Tues. and Sat. 11:00 am, 3:00 pm</td>
</tr>
</tbody>
</table>

Each Karel tutorial is limited to ten students. For more information, please call Howard Fink at 998-3422.

Microsoft Works* (Mac)
Offered at the request of the Computer Science Department (FAS) for students in A22.002.

Education Building, second floor

<table>
<thead>
<tr>
<th>During February</th>
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</thead>
<tbody>
<tr>
<td>Mon., Wed., Fri. 2:00 pm</td>
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<tr>
<td>Tues. and Sat. 4:30 pm</td>
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</table>

StatView* (Mac)
For students in the Masters of Social Work program, given at the department's request. Times to be announced. Please call Howard Fink at 998-3422 for further information.

Analyzer* (Mac)
Given upon request, by appointment. Please call Frank LoPresti at 998-3398 for further information.

* Tutorials marked with an asterisk (*) are offered at the request of departments and instructors for students in particular courses or programs. Instructors who would like to arrange tutorials tailored specifically to their classes' needs are invited to contact ACF staff members Ivor Smith (998-3434) for the IBM mainframe, or Frank LoPresti (998-3398) for all other systems.
The ACF's non-credit, hands-on, half-day workshops in personal computing are open to NYU faculty, staff, and students. **Registration is required**, but there is no fee for the workshops. To register, during the week of the workshop, please call Henry Mullish (998-3039) for IBM PC workshops, or Howard Fink (998-3422) for Macintosh workshops. In order to accommodate as many registrants as possible, attendees may be asked to share computers.

### For IBM PC Users

At the ACF's Education Building lab, 35 West Fourth Street, second floor. Morning workshops run from 9 a.m. to 12 noon, afternoon workshops, from 1 p.m. to 4 p.m.

<table>
<thead>
<tr>
<th><strong>WordPerfect 5.1</strong></th>
<th><strong>WordPerfect Graphics</strong></th>
<th><strong>Microsoft Word</strong></th>
<th><strong>Microsoft Excel</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Introductory</strong></td>
<td><strong>Introductory</strong></td>
<td><strong>Introductory</strong></td>
<td><strong>1 pm</strong> February 20</td>
</tr>
<tr>
<td>9 a.m. January 24, 31</td>
<td>9 a.m. April 10</td>
<td>9 a.m. January 30</td>
<td>April 23</td>
</tr>
<tr>
<td>February 7, 21, 28</td>
<td>1 p.m. January 24</td>
<td>February 6</td>
<td></td>
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<tr>
<td>March 13</td>
<td>February 28</td>
<td>March 12</td>
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<tr>
<td>April 24</td>
<td>May 1</td>
<td>April 2, 30</td>
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<tr>
<td>May 8, 15, 22</td>
<td></td>
<td>May 28</td>
<td></td>
</tr>
<tr>
<td>June 5, 12, 19, 26</td>
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<td>June 4</td>
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<tr>
<td>1 p.m.</td>
<td></td>
<td><strong>1 pm</strong> February 27</td>
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<tr>
<td>February 14</td>
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<td>March 5, 26</td>
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<tr>
<td>April 3</td>
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<td>April 16</td>
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<td>May 29</td>
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<tr>
<td><strong>Intermediate</strong></td>
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<td><strong>Intermediate</strong></td>
<td><strong>9 am</strong> February 20</td>
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<tr>
<td>1 p.m.</td>
<td></td>
<td><strong>Part I</strong></td>
<td>April 24</td>
</tr>
<tr>
<td>January 31</td>
<td></td>
<td></td>
<td>1 p.m. June 4</td>
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<tr>
<td>February 21</td>
<td></td>
<td><strong>Part II</strong></td>
<td></td>
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<td>March 13</td>
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<tr>
<td>April 24</td>
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<tr>
<td>May 15, 22</td>
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<td></td>
<td></td>
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<tr>
<td>June 19, 26</td>
<td></td>
<td><strong>9 am</strong> March 5</td>
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<tr>
<td><strong>Advanced</strong></td>
<td></td>
<td><strong>1 pm</strong> June 11</td>
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<tr>
<td>1 p.m.</td>
<td><strong>1 pm</strong></td>
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<tr>
<td>March 27</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Microsoft Windows 3.0</strong></td>
<td><strong>Introduction to Lotus 1-2-3 Version 2.03</strong></td>
<td><strong>PageMaker</strong></td>
<td><strong>MacDraw</strong></td>
</tr>
<tr>
<td>9 a.m. March 6</td>
<td>9 a.m. March 27</td>
<td><strong>Part I</strong></td>
<td><strong>9 a.m</strong> February 27</td>
</tr>
<tr>
<td>1 p.m. May 8</td>
<td>1 p.m. February 7</td>
<td></td>
<td>1 p.m. June 4</td>
</tr>
<tr>
<td></td>
<td>April 10</td>
<td><strong>Part II</strong></td>
<td><strong>9 am</strong> March 5</td>
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<tr>
<td></td>
<td>June 5</td>
<td></td>
<td>1 p.m. June 11</td>
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</tbody>
</table>

For Macintosh Users

At the ACF's Education Building lab, 35 West Fourth Street, second floor. Morning workshops run from 9 a.m. to 11:30 a.m., afternoon workshops from 1 p.m. to 3:30 p.m.

<table>
<thead>
<tr>
<th><strong>For Macintosh Users</strong></th>
<th><strong>Microsoft Excel</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Microsoft Word</strong></td>
<td><strong>1 pm</strong> February 20</td>
</tr>
<tr>
<td><strong>Microsoft Excel</strong></td>
<td>April 24</td>
</tr>
<tr>
<td><strong>MacPaint</strong></td>
<td>9 a.m. February 20</td>
</tr>
<tr>
<td><strong>MacPaint</strong></td>
<td>June 4</td>
</tr>
<tr>
<td><strong>MacDraw</strong></td>
<td><strong>9 am</strong> February 27</td>
</tr>
<tr>
<td><strong>MacDraw</strong></td>
<td>1 p.m. June 4</td>
</tr>
<tr>
<td><strong>HyperCard</strong></td>
<td><strong>Part I</strong></td>
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<tr>
<td><strong>HyperCard</strong></td>
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<tr>
<td><strong>HyperCard</strong></td>
<td><strong>Part II</strong></td>
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<td><strong>HyperCard</strong></td>
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</table>
For Instructors Using VMS at NYU

Warren Weaver Hall, Room 313, 2:30 pm
Tues., January 28

An introduction to the special features of accounts provided to instructors and classes using the ACF’s VAX/VMS computers.

Under the ACF Course System, teachers of classes with VMS accounts have both “library” and “teacher” directories. Other features include class bulletin boards, direct instructor access to students’ computer work, and (at the request of the instructor) electronic submission of students’ completed homework. Shared electronic work spaces can also be set up, if desired, either for the entire class or for subgroups within the class.

In this talk, Stephen Tihor will present the information needed to benefit from these very useful instructional aids.

Topics in Unix

Warren Weaver Hall, Room 313, 2:30 pm
Part I Tues., February 4
Part II Tues., February 11

This two-part “mini-course” on the use of the UNIX systems at NYU will be given by Gary Rosenblum. It is an intermediate-level follow-up to the ACF’s introductory UNIX tutorials.

Internet Skills Workshop

Education Building, second floor
10:00 am to 3:00 pm
Part I Thurs., February 13
Part II Thurs., February 20

An in-depth introduction to the Internet network and some of the skills needed to take advantage of what it offers. You will learn how to use electronic mail, file transfer, remote logins, and so on, to access an assortment of network services on more than 350,000 computers in over 50 countries. The session will include demonstrations, discussion, and hands-on practice. Reservations and an account on a VMS or UNIX computer at NYU are required. Please call Jeffrey Bary at 998-3049 for reservations.

ACF Talks & Seminars®

Document Preparation with LATEX

Education Building, second floor, 2:30 to 4:30 pm
Part I Tues., February 18
Part II Tues., February 25

Given by Jae Fried. TEX is a program designed to produce high-quality typeset documents. LATEX adds to TEX a collection of commands that simplify typesetting by letting the user concentrate on the structure of the text rather than on formatting commands.

Part I will cover the typesetting of mathematical and non-mathematical documents using LATEX, with emphasis on macros, dealing with errors and navigating through the LATEX book. Part II, topics suggested by those present at the first meeting will be discussed.

Graphics Visualization Available at the ACF

Warren Weaver Hall, Room 313, 2:30 pm
Wed., March 11

Ed Friedman will discuss scientific graphics and visualization resources available at the ACF.

Topics in VMS

Warren Weaver Hall, Room 313, 2:30 pm

This intermediate-level, four-part “mini-course”, given by Stephen Tihor, will be of interest to users of the VAX/VMS systems at NYU. (Attendees are expected to have taken an ACF introductory tutorial in VMS. Please see page 35 for hours and location.)

After You Log In: Messages, BBoards, Mail and News Tues., Feb. 18

Topics will include a review of early system messages, including password expiration and choice, last login, scheduled down time, incomplete startup, stopped queues, closed sites, announcements of interest, BBoard, COMMENT, other BBoards, E-mail, and NEWS.

Files and Commands Tues., Feb. 25

Topics will include file names, file types, version numbers, purging, ARCHIVE, RECOVER, remote file access, directory trees, class accounts, scratch disks, loan disk, structure of the cluster, and shared devices.

Networking, Printing and Command Files Tues., Mar. 3

Topics will include DECnet, BITnet, the Internet, PHONE, SEND, talk, relay, irc, SET HOST, TELNET, RLOGIN, COPY, SEND/FILE, FTP, NFS, E-mail, mailing lists, LISTSERV's, CHOOSE, printers, PRINT, IMPRINT, SHOW ENTRY, creating simple command files, and SUBMIT.

Everything Else Tues., Mar. 10

The final session of this mini-series will cover selected advanced topics of interest.
Diagnosing and Repairing Macintoshes
Warren Weaver Hall, Room 313, 2:30 pm
Wed., March 25

ACF staff members will discuss and demonstrate trouble-shooting techniques and other strategies for dealing with problems that one might encounter while using one’s Macintosh. This talk is geared toward owners of Apple Macintoshes in the NYU academic community. (Please see April 1 for a comparable presentation for owners of IBM PC’s.)

Diagnosing and Repairing IBM PCs
Warren Weaver Hall, Room 313, 2:30 pm
Wed., April 1

ACF staff members will discuss and demonstrate trouble-shooting techniques and other strategies for dealing with problems that one might encounter while using one’s PC. This talk is geared toward owners of IBM-type PC’s in the NYU academic community. (Please see March 25 for a comparable presentation for Apple Macintosh owners.)

Network Services Available at NYU
Warren Weaver Hall, Room 313, 2:30 pm

NYU’s campus-wide network, NYU-NET, provides access to a growing array of online and network services, both within NYU and at institutions worldwide. This four-part series will focus on some of these services.

Internet Services
Tues., Mar. 24
Jeffrey Bary will discuss several procedures by which individuals using computers at NYU can connect to other computers and services on the Internet, an international network connecting over 350,000 computers in the United States and abroad. Topics will include file transfers and issues in connectivity. (A new talk, "Internet Skills Workshop", may also be of interest. Please see previous page for information.)

Library Information via Internet
Tues., Mar. 31
Many universities have made their online library catalogs available on the Internet. RLIN, a union catalog of many libraries, is also available on the Internet. In this session, members of the Bobst Library staff and ACF staff-member Jeffrey Bary will tell you how to access and use these resources. Topics will include how to connect from on- and off-campus, what types of information are available, and identifying resources for locating materials at other libraries.

BITNET and BITNET Services
Tues., Apr. 7
BITNET is an international network of over 2000 computers at universities and research centers. In this talk, Jeffrey Bary will demonstrate many of the features of the BITNET. Topics will include BITNET “file servers” and “listservers”, file transfers, connectivity and electronic mail, relays, electronic magazines, and online “White Pages”.

Communicating Around the NYU Network: Kermit, Telnet, ProComm and FTP
Tues., Apr. 14
A variety of machines and networks are connected to NYU-NET, NYU’s campus wide network, and users can communicate with them via an assortment of communications protocols and packages. In this session, ACF staff member Larry Mingione will talk about four communications software packages that are commonly used at NYU. He will discuss which of these should be used in the several different sorts of connections that are possible when communicating via NYU-NET. Such issues as file transfer and terminal emulation will also be addressed.

Guided Tour of the New ACF Arts and Media Studio
Education Building, second floor, 12:00 pm
Wed., March 4

The ACF Arts and Media Studio provides a teaching and working environment for small studio and production classes that use computers as creative tools. This session is an on-site tour of the facility for faculty members interested in using this resource for their classes.

The Arts and Media Studio provides Macintosh- and NeXT-based systems for work with still images, animations, sound and music, and interactive multimedia, and includes peripherals such as image scanners, laser disk and video tape players under computer control, drawing tablets, etc. This tour will include brief demonstrations, but those interested should also consider one or more of several faculty arts and media workshops to be given this spring (times to be announced). Reservations are required. Please call Phil Galanter at 998-3041.

OS/2
Warren Weaver Hall, Room 313, 2:30 pm
Wed., April 8
Gary Chapman will provide an overview to this major new microcomputer operating system from IBM.
Creating Tables in WordPerfect 5.1

Education Building, second floor, 1:00 pm
January 22, April 1, May 13, June 3

Given by Henry Mullish. "Tables" is a feature of WordPerfect 5.1 that can be used with any document involving columns and tables. This very flexible and fast new feature promises to give WordPerfect documents a new look and to facilitate preparation of otherwise unwieldy documents. Reservations are required.

WordPerfect 5.1 Macros

Education Building, second floor, 1:00 pm
January 29, March 11, April 29, June 10

Henry Mullish will demonstrate how to dramatically increase productivity when working in WordPerfect 5.1 on the IBM PC, by creating macros for common tasks. No previous knowledge of macros is required, although a knowledge of WordPerfect would be helpful. Reservations are required.

Mail Merge in WordPerfect

Education Building, second floor, 1:00 pm
February 5

One of the most effective methods of expediting office mailings is by means of "mail merge". It allows you to incorporate names and addresses contained in a mailing list database with the body of letters prepared with a word processor. In this session, Henry Mullish will explore the Mail Merge feature of the IBM PC version of WordPerfect. Reservations are required.

Grammar and Style Analysis with RightWriter

Education Building, second floor, 1:00 pm
February 12, April 15

Given by Henry Mullish. Students are encouraged to bring with them any document of their choosing on a 3.5 inch disk. We will then use RightWriter to analyze its grammar and style. Reservations are required.

Newsletters with WordPerfect

Education Building, second floor, 1:00 pm
February 19

According to one conservative estimate, more than 100,000 newsletters are produced on a regular basis in the US each year. Numerous departments at NYU produce their own newsletters. Producing one with a typewriter is a giant task, but with an appropriate computer program, it is a breeze. Henry Mullish will demonstrate how one can use WordPerfect to produce a newsletter. Reservations are required.

Using Equation Mode in WordPerfect

Education Building, second floor, 1:00 pm
February 26, April 8, May 20, June 24

Given by Henry Mullish. Equation Mode promises to make WordPerfect (IBM PC version) a major contender in the technical word processing field. This new feature of WordPerfect 5.1 helps you to type technical material in an attractive way. (No calculations are performed, though!) Reservations are required.

Special Topics in WordPerfect 5.1

Education Building, second floor, 1:00 pm
March 4, March 25, May 6, May 27, June 17

These informal seminars are intended as a follow-up to the ACF's introductory WordPerfect tutorials. Each session will focus on a selection of topics depending on attendees' interests and needs. Specific functions of WordPerfect and word processing tasks—such as sorting, grammar and style analyzers, WordPerfect's speller and thesaurus, endnotes, footnotes, blocking and search—will be discussed off-the-cuff by Henry Mullish. Uses of locking documents and advanced features like customized formatting of date and time will be introduced. Attendees' queries and participation will be welcome. Reservations are required.

DrawPerfect

Education Building, second floor, 1:00 pm
April 22

Given by Henry Mullish. This is a demonstration of a presentation graphics application written by WordPerfect, Inc. that works together with WordPerfect. Presentations can be created that include drawings, graphics, text, charts or a combination of these visual aids. DrawPerfect can also be used to integrate presentation materials with traditional word processed text. Reservations are required.
Supercomputer Access at NYU

Warren Weaver Hall, Room 313, 2:30 pm
Tues., April 21

A discussion by Ed Friedman of supercomputer resources available to researchers at NYU—both at NYU (like the CONVEX, Stardent, and Astronautics) and at National Science Foundation-funded supercomputer facilities such as the Cornell Theory Center, the Pittsburgh Supercomputing Center, the National Center for Supercomputing Applications, the San Diego Supercomputer Center, and the National Center for Atmospheric Research.

Topics will include how to choose and apply for resources at these NSF-funded supercomputer labs, and how to gain access to their facilities from NYU. Application forms and instructions will be available to attendees who are interested in using NSF-supported supercomputer facilities.

Novell Networks for IBM and Apple Microcomputers

Warren Weaver Hall, Room 313, 2:30 pm
Wed., April 15

Larry Mingione will speak about this microcomputer network in use at the ACF's instructional microcomputer labs in the Education Building, the Third Avenue North Residence Hall, 14 Washington Place, and Tisch Hall. He will describe some of the essential tasks and concerns for administrators of small microcomputer networks, and will demonstrate basic network management routines and commands.

Presentation Graphics

Macintosh Graphics for Data Presentation
Main Building, Room 509, 2:00 pm
Fri., February 14

ACF staff members will demonstrate several popular packages for Apple Macintoshes that enable you to create line and bar graphs, pie charts, etc. Such packages can be useful for the presentation of data and results in reports and papers. A number of these packages are available to users of the ACF's instructional microcomputer labs.

IBM PC Graphics for Data Presentation
Main Building, Room 509, 2:50 pm
Thurs., March 26

ACF staff members Eleanor Kolchin, Frank LoPresti and Larry Mingione will demonstrate several presentation graphics packages used on IBM/PC's including Harvard Graphics, Lotus, and Microsoft PowerPoint for Windows.

Data Analysis: Introduction to SPSS and SAS

Main Building, Room 509, 10:00 am

SPSS Intro Fri., February 14
SAS Intro Fri., February 21

ACF consultant Bert Holland will provide an introductory-level overview of these popular statistical packages available at NYU. Each session will focus on a particular package and will provide a brief introduction to the analyses offered by the package. Discussion will include such topics as program structure, language syntax, data handling, and running programs written with the particular package.

Data Entry for SPSS and Other Statistical Packages
Main Building, Room 509, 2:50 pm
Thurs., February 27

Frank LoPresti will discuss and demonstrate data entry techniques and related considerations for researchers in the social sciences and other fields. SPSS/DE, Lotus and other software which might be used for data entry will be demonstrated. Verification techniques and outlier searches will be discussed.

Macintosh and PC Statistical Software
Main Building, Room 509, 2:50 pm
Macintosh Thurs., March 5
IBM PC Thurs., April 2

ACF staff members Frank LoPresti and Howard Fink will present some interactive alternatives to SPSS that are making teaching and learning statistics easier. The statistical packages StatView for the Macintosh and Minitab for the Macintosh and IBM PC give users a spreadsheet-like format for inputting and managing data. Minitab, used by the Cornell University Industrial Labor Relations program in a one-year course, is especially powerful. There is also a very rich selection of textbooks available for teaching this program. Two other statistical packages, Systat (for PC's and Macintoshes) and DataDesk (Macintosh) will also be discussed.
Linear Structural Equation Modeling with LISREL

Main Building, Room 509, 10:30 am

ACF consultant Robert Yaffee will present a six-part series on linear structural equation modeling with LISREL 7. Although the first lecture is primarily theoretical, other lectures will include programming examples as well as theory. A basic knowledge of matrix algebra, regression analysis and factor analysis is recommended as a prerequisite. While the lectures are free, registration is required. To register, call Robert Yaffee at (212) 998-3402.

Introduction to LISREL Theory
Friday, February 28

This lecture will provide a short historical synopsis of structural equation modeling. It will include an introduction to confirmatory factor analysis, causality, path analysis, and simultaneous equation modeling. It will include an introduction to confirmatory factor analysis, causality, path analysis, and simultaneous equation modeling.

The Measurement Model
Friday, March 6

Validity and reliability theory will be discussed. Validity coefficients will be defined in a confirmatory factor analysis. Reliability will be exemplified with a congeneric measurement model. Convergent and discriminant validity will be demonstrated.

The Structural Regression Model
Friday, March 13

Causality and causal modeling with LISREL will be discussed in this lecture. Derivation of the covariance structure equations will be shown for examples with observed variables. Identification of the models will be treated here.

The Full Model
Friday, March 27

The full LISREL model will be examined in this lecture. Estimation and fitting of the recursive and nonrecursive models will be presented. The index of stability will be explained, as well.

Path Analysis
Friday, April 3

Path analysis with LISREL will be the subject of this lecture. Multi-sample analyses and the extended LISREL model with covariance analysis of mean structures will also be examined.

Advanced Topics
Friday, April 10

The distributional assumptions of LISREL will be discussed. The levels of measurement required, and PRELIS transformations of variables to accommodate these requirements, will be addressed. Power analysis and new features of LISREL 8 will be included.

Index of ACF Talks, Tutorials and Workshops, Spring 1992

For further information on microcomputer workshops, please see page 36; on tutorials, pages 34-35; on talks and seminars, pages 37-41. For other important dates for ACF users—account registration and renewal, holiday schedule, and so on—please see page 33.

January 1992

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<td>Individual account renewal applications are being accepted for fiscal year 1992/93. Instructors apply for Spring '91 class accounts as early as possible.</td>
<td>Seminar: Creating Tables in WordPerfect</td>
<td>Students register for computer use (through Feb. 20).</td>
<td>Workshops: WP Intro; WP Graphics Intro</td>
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<td>Seminar: Data Entry for SPSS and Other Stat Packages Tutorials: WP, 12 &amp; 5:30; WYLBUR, 5:30 &amp; 6:30</td>
<td>Seminar: For Instructors Using VMs at NYU Tutorial: Email (PC), 12; MS Works, 5:30</td>
<td>Workshops: Word Intro; Word Intern.; Tutorial: WYLBUR, 5:30 &amp; 6:30</td>
<td>Workshops: WP Intro; WP Intern.; WYLBUR Intro Lecture, 6</td>
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# ACF Tutorials, Workshops and Seminars

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<td>Tutorials: E-mail (Mac), 12; VMS, 6:30; WYLBUR, 5:30 &amp; 6:30; WP, 12 &amp; 5:30; Karel, 10 &amp; 4:30; MS Works (CS), 2; UNIX, 4</td>
<td>Seminar: UNIX Topics I</td>
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<td>Seminar: Mail Merge in WP</td>
<td>Tutorials: Karel, 10 &amp; 4:30; MS Works (CS), 2; WYLBUR Intro Lecture, 6; Uploading (Mac), 12</td>
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<td>Seminar: Internet Skills I Tutorials: VMS, 6:30; WYLBUR, 5:30 &amp; 6:30; MS-DOS II, 3</td>
<td>Tutorials: MS Works (CS), 4:30; Karel, 11 &amp; 3</td>
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<td>Seminar: UNIX Topics II Tutorials: MS Works (CS), 4:30; MS Works, 5:30; Karel, 11 &amp; 3; VMS, 11:30; E-mail (PC), 12</td>
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<td>Seminar: Internet Skills II Tutorials: UNIX, 6:30; WYLBUR, 5:30 &amp; 6:30; MS-DOS III, 3 Workshops: MacPaint, PageMaker II</td>
<td>Seminar: SAS Intro Tutorials: Karel, 10 &amp; 4:30; MS Works (CS) 2 Workshops: WP Intro, WP Inter, WYLBUR Lecture, 6</td>
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<td>Seminar: LISREL Theory Workshops: WP Intro, WP Graphics Tutorials: Karel, 10 &amp; 4:30; Uploading (Mac), 12; MS Works (CS), 2</td>
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**January 1992**

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| Presidents' Day | WYLBUR, 5:30 & 6:30 | January 1992 |

**March 1992**

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| Tutorials: WP, 12 & 5:30; E-mail (Mac), 12; UNIX, 4 & 6:30; Karel, 10 & 4:30; MS Works (CS), 2; WYLBUR, 5:30 & 6:30 | Workshops: SPSS & Stat. Pkgs. Tutorials: VMS, 6:30; WYLBUR, 5:30 & 6:30 Workshops: Word Intro, HyperCard I | 22 |

**February 1992**

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Spring Recess begins (through March 21).
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<td>MS-DOS I, 3; UNIX, 6:30 Workshops: Word Intro; Word Intern.</td>
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<tr>
<td>E-mail (Mac), 12; WP, 12 &amp; 5:30; UNIX, 4; VMS, 6:30</td>
<td>Network Services</td>
<td>Upload (PC), 12; MS Works, 5:30</td>
<td>Special Topics in WP Tutorials: Uploading (PC), 12</td>
<td>UNIX, 6:30 Word Intro; Word Intern.</td>
<td>UNIX, 6:30 Word Intro; Word Intern.</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
<th>Friday</th>
<th>Saturday</th>
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</thead>
<tbody>
<tr>
<td><strong>Tutorials:</strong></td>
<td><strong>Seminar:</strong></td>
<td><strong>Tutorials:</strong></td>
<td><strong>Seminar:</strong></td>
<td><strong>Tutorial:</strong></td>
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<tr>
<td>E-mail (Mac), 12; WP, 12 &amp; 5:30; UNIX, 4; VMS, 6:30</td>
<td>Network Services</td>
<td>Create Tables in WP Tutorials: Uploading (PC), 12</td>
<td>Special Topics in WP Tutorials: Uploading (PC), 12</td>
<td>UNIX, 6:30 Word Intro; Word Intern.</td>
<td>UNIX, 6:30 Word Intro; Word Intern.</td>
</tr>
</tbody>
</table>

### Memorial Day

- **Tutorials:** E-mail (Mac), 12; WP, 12 & 5:30; UNIX, 4; VMS, 6:30
- **Seminar:** Network Services
- **Tutorials:** WP, 12 & 5:30

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*Academic Computing and Networking at NYU, January 1992, page 44*
**Important ACF Telephone Numbers**

General Information (ACF)  998-3333  
Account Information  998-3035  
Computer Status (recording)  998-3433  
Computer Documentation  998-3036  
Faculty Microcomputer Lab  998-3044  
Tape Librarian  998-3452  

Applications Consultants:  
- 14 Washington Place  998-3399  
- Tisch Hall  998-3434  
- Education Building  998-3435  
- Warren Weaver Hall  998-3037  
- Third Ave. North Res. Hall  998-3500

Computer Operators:  
- 14 Washington Place  998-3457  
- Tisch Hall  998-3409  
- Education Building  998-3421  
- Warren Weaver Hall  998-3456  
- Third Ave. North Res. Hall  998-3504

**Dial-in Access to ACF Computers**

(Via NYU-NET, NYU's campus-wide network.)  
If calling from  Dial  For (bps)  
NYU  53600  300 - 2400  
Off Campus  995-3600  300 - 2400  
995-4335*  300 - 1200  

*This number is recommended if you are using an old-style modem without error-correcting.

**NYU Trolley route includes (6); weekdays, every 15 minutes during the academic year. ACF microcomputer labs are at (2), (3), (4), and (6).**

**Hours at ACF Sites**

<table>
<thead>
<tr>
<th>User Work Areas:</th>
<th>Regular Hours</th>
<th>Holiday Hours*</th>
</tr>
</thead>
<tbody>
<tr>
<td>14 Washington Place</td>
<td>8:30 a - 11:30 p</td>
<td>8:30 a - 5:30 p</td>
</tr>
<tr>
<td>Tisch Hall</td>
<td>8:30 a - 11:30 p</td>
<td>8:30 a - 5:30 p</td>
</tr>
<tr>
<td>Education Building</td>
<td>8:30 a - 11:30 p</td>
<td>8:30 a - 5:30 p</td>
</tr>
<tr>
<td>Third Ave. North</td>
<td>10:30 a - 1:30 a</td>
<td>10:30 a - 5:30 p</td>
</tr>
</tbody>
</table>

Consultants:  
14 Washington Place  8:30 a - 9 p  
Tisch Hall  9 a - 9 p  
Education Building  8:30 a - 9 p  
Third Ave. North  10:30 a - 1:30 a

5. 715 Broadway  
IBM tapes only

6. Third Ave. No. Residence Hall  
75 Third Ave., basement

* A final holiday schedule will be posted via our online news and bulletin board facilities. Note: The ACF offices in Warren Weaver Hall are closed on University holidays.
Featuring:

- Arts and Media
- Computing in Anthropology
- Instructional Computing
- Microcomputers
- Networks and Network Services
- Visualization, Graphics and Printing
- Social Science Computing
- Library Computing
- Computing at the Law School
- Purchasing Services Notes
- From the NYU Book Centers