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ACADEMIC COMPUTING AND NETWORKING AT NYU is edited and published by New York University's Academic Computing Facility (ACF). Its scope includes information about computing and networking activities at NYU's various schools, departments and administrative units.

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We welcome your comments and suggestions about the articles in this issue, and about articles for future issues of the newsletter. Contributions from sources within the University are invited for consideration by the Editor; please call 998-3036 for more information or send E-mail to hochberg@acfcluster.nyu.edu. Unless otherwise indicated, articles are authored by members of the ACF staff.

Below many of the bylines 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.

This issue was prepared on Apple Macintosh Illsi and Macintosh SE computers, using Aldus Freehand, Aldus PageMaker, Microsoft Word, Adobe Type Manager, Adobe Photoshop, Claris MacDraw Pro, Xerox MacImage, and a Microtek 600 ZS color/grayscale scanner. Fonts used in this issue: Gill Sans, Adobe Garamond, and Polo-SemiScript, along with Zapf Dingbats and Courier (for special effects), and Stone Sans and Times in the Schedule section.

Camera-ready copy for this issue was produced using a Vari typ er 4000 imagesetter and an Apple LaserWriter 1INT printer. Please see the January and March 1992 issues of this newsletter for more about the ACF's new Vari typ er service, or contact John Kesich at the ACF (kesich@nyu.edu or 998-3047).

Frances Bauer, Kathy Bear (NYU Book Centers), Robert Burnham (SEHNAP), Gary Chapman, Vincent Doogan, Greg Elin (Interactive Telecommunications Program, TSOA), Liz Evans (Law Library), Ed Friedman, Philip Galanter, Bert Holland, Stephen Krause (Purchasing Services), Mike Roberts (EDUCOM), George Sadowsky, Philip Sanders (Interactive Telecommunications Program, TSOA), Tamar Schlick (Chemistry and Mathematics, FAS), Susan Shiroma (Bobst Library), Karen Strauss, Rhonda Zangwill (Bobst Library).

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The Network Is Becoming the Computer

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At a recent conference, one of my colleagues from another institution provided me with yet another striking example of how the world of computing and networking is changing rapidly. He mentioned that in reading a USENET News group recently, he had come across a posting from a site connected to the Internet in the former Soviet Union offering large quantities of brown coal, for immediate delivery, at any port on the Black Sea!

Those of us who read USENET News have occasionally come across similar postings. During the last several months, I've seen postings offering moderately priced bed-and-breakfasts in Moscow, coupled with optional sight-seeing tours of the area. Others, perhaps less enamored of their future in a new Russia, post their resumes on the misc.jobs.wanted news group. In entering into these activities, the Russians and others in the former Soviet Union provide clear evidence that they understand one of the most important attributes of a network: to make a market in information.

Now, most of us in the computer industry have understood for some time that the major purpose of computers has been to provide us with information of various kinds. However, historically, that information has been assumed to be computed information: give the computer input data, and it gives you output data. If you give the computer good data, you're likely to get meaningful results. The reverse is also true. If you give the computer bad data, you get useless results: garbage in, garbage out (GIGO).

But with the connection of computers into increasingly large computer networks, the connectivity afforded by the Internet over large geographical areas and diverse communities of interest is beginning to add as much value, and possibly more, to the notion of providing information than does the computing function alone. This idea is perhaps best embodied by the phrase "the network is the computer." The combination of an extensive network and the computer's ability to exploit it appropriately is likely to make the earlier era of isolated, independent computing seem primitive and unacceptable within a few years.

The rapid growth of the Internet has surprised even those who have been at the center of its evolution. If we use John Quarterman's definition of the Internet as being comprised of all computers that have direct electronic mail connectivity, then present estimates are that the Internet consists of about 1,000,000 nodes in over 100 countries. Furthermore, it is estimated that the average number of individuals connected to each node is 5, resulting in an estimate of 5,000,000 computer users having access to the Internet worldwide.

With the connectivity afforded by the Internet, the era of isolated, independent computing will soon seem primitive.
The Internet's rapid growth has surprised even those who have been at the center of its evolution.

About 5,000,000 individuals in over 100 countries already have access to the Internet.

could access remotely the computational resources at any other site connected to the network. At that time, important computer programs were relatively non-transportable, and, in order to use a program at another site, it was often necessary to travel physically to that site and remain there for the duration of use. One of the first high level functions (or protocols) offered by the Arpanet was remote login (now called telnet), so that users could use programs on remote hosts by connecting to them through the network instead of having to travel there. With the addition of file transfer capability, joint work on computer-based projects became considerably more efficient. The stress of such projects was on computation rather than communication.

The evolution and use of the Arpanet provided the experience that led to many of the functions of the Internet of today. As the Arpanet evolved, an electronic mail service was established. Over time, electronic mail traffic became more voluminous and more important to users of the network. One of the larger surprises resulting from experience with the Arpanet was the strong perception by users of the substantial value added through this relatively simple form of electronic communication. When the Arpanet was finally disbanded in 1990, communication-oriented use had surpassed computationally oriented use of the network.

Toward a More Integrated Network Structure

The current Internet has evolved so rapidly that both the policies for its appropriate use and the method by which it is financed have lagged substantially behind the uses to which it is being put. The development and operation of the central components of the Internet — the NSFNET, which is evolving into the IINREN (Interim Interagency National Research and Education Network), and the mid-level networks such as NYSERNet — have been subsidized significantly with public funds, and as a consequence the types of traffic on the Internet have been restricted broadly to those that contribute to the research and educational mission of the nation. More recently, other constituent networks within the Internet have evolved to provide commercial service with no restriction as to the type of traffic carried. Examples include PSINet, AlterNet, and, most recently, U.S. Sprint's commercial TCP/IP offering. The situation is considerably muddled at present; it is as if we had several telephone systems, one of which could be used for any transaction and another of which was cheaper, but could be used only for educational and research purposes.

We clearly need to move toward a more integrated, seamless network structure, both as a nation and as a global community, without lessening in some fundamental and important way the incentives to continue to explore the potential for new and effective network uses and services. Perhaps, as that process moves forward, network services will emerge that will allow us to create and exploit highly efficient markets, not only in Russian brown coal and bed-and-breakfasts in Moscow, but also in many of the commodities, services, and information products that affect our opportunities, productivity and performance as scholars and students, as well as a host of other issues in our everyday lives.

Max Goldstein (1920-1992)

We have just learned that Max Goldstein, Director Emeritus of the Academic Computing Facility, died at home in his sleep on the morning of Sunday, August 24th. After coming to NYU from Los Alamos, Max directed computing activities at NYU from 1958 to 1990, building a strong computing service organization and leaving a legacy unparalleled among current academic computing directors. His wisdom, counsel and friendship will be sorely missed by his friends and colleagues.
TSOA Sponsors a Conference on New Technologies’ Impacts

Integrity of News Photographs in the Computer Age

by Greg Elin
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Greg Elin is a second year graduate student in the Interactive Telecommunications Program (TSOA). He served as Project Coordinator of the ITP Program on Copyright and the New Technologies during the 1991-92 academic year.

The Interactive Telecommunications Program on Copyright & the New Technologies (TSOA) and the Department of Photography (TSOA) co-sponsored a conference entitled “Framing the News: Preserving the Integrity of the News Photograph in the Computer Age” at Tisch School of the Arts this past June. The half-day conference focused on the impact of new technologies and other sources of photographic distortion — such as the photo-opportunity — on the credibility of news photography.

The conference was opened by Professor Donna A. Demac, Director of the TSOA Program on Copyright & the New Technologies. Professor Fred Ritchin (Photography and Interactive Telecommunications, TSOA) presented examples of manipulated photographs that had appeared in the press in recent years. Perhaps the most striking example was a black and white graph” that appeared to show a plane crashing. Published in a major Norwegian newspaper, the image had been completely fabricated from eye witness accounts; no photographer had actually been present at the scene.

A draft set of guidelines was presented and discussed. Entitled “Proposed Standards for Photographic Reproduction in the Press,” the guidelines are targeted toward creating journalistic standards for indicating to a reader the level of manipulation that a news photograph has undergone.

The draft guidelines included proposed labels for photographs indicating the conditions under which they were taken and the degree to which they were subsequently manipulated. On the photograph-taking side, they proposed identifying whether or not the photographer directed the photograph (“photo-reportage” vs. “photo-portrait”); whether the photographer was directed by the subject (“photo-opportunity”); or if a pre-conceived idea was expressed to illustrate an idea (“photo-illustration”). As for subsequent image manipulation, the document addressed the extent of change (“altered, composite, or simulated”).

The guidelines resulted from the work of a committee of industry professionals which included Professor Ritchin; New York Times Photo Editor Mark Bussell; Guy Cooper, Picture Editor for Newsweek; Susan Meiseles, a photographer at Magnum Photos, Inc.; and Richard Weisgrau, Executive Director of the American Society of Magazine Photographers.

Comments by a panel of experts were followed by a general discussion. The panel included Mr.
A Networked Interactive Painting Experiment

by Philip Sanders
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Philip Sanders teaches in the Interactive Telecommunications Program (ITP) at TSOA. He is also the Technical Coordinator for ITP and coordinated NYU’s participation in the IPI event.

This past summer, during the week of July 27 - 31, three Tisch School of the Arts faculty members, with the support of ACF staff, participated in a worldwide interactive art project. Interactive Painting International (IP!) was an exciting experiment in networked, cooperative, interactive art. As multiple artists painted simultaneously over network links, each work-in-progress was displayed on “video walls” at the Art Show of the annual ACM SIGGRAPH Conference in Chicago and at the Science Museum of the Franklin Institute in Philadelphia.

From 14 sites around the world, approximately 50 computer artists at graphic workstations were linked via the Internet and ISDN to computers and video switchers at the IPI control center at SIGGRAPH ’92. Special IPI network painting software enabled computer artists from several sites to work on the same image simultaneously. Artists were able to paint or draw fresh images, and to select from images stored on disk at their local site and paste these into the networked painting. These could then be modified at will by any of the participating artists, who built on each other’s work, resulting in a highly dynamic work-in-progress. The composite image was displayed on the monitors of the computers of all the artists working on that image, as well as on the video walls in Chicago and Philadelphia.

At NYU, artists worked in the ACF Visualization Center on a Silicon Graphics IRIS workstation. NYU participants included artists Marianne Petit and Philip Sanders of TSOA’s Interactive Telecommunications Program (ITP) and Peter Bardazzi, who teaches animation in TSOA’s Department of Film and Television. In addition, one ITP student, Nai Wai Hsu, worked from Taipei, Taiwan, while another, Yarom Boss, participated from Tel Aviv, Israel. Since NYU was the only active IPI site in New York, local artists William Rabinovitch and Carolee Schneemann also participated from the NYU location. There were some technical challenges using the developing IPI software system, and ACF staff members Jeffrey Bary, Hua Deng, Chetan Dube and Philip Galanter, as well as IPI technical staff, worked assiduously with the NYU site coordinator for the event, Phil Sanders, to smooth the way considerably. Some intensive work was required by all, since the final software only arrived the Sunday preceding the event.

The unique quality of working simultaneously with other artists — often without knowing who one’s networked collaborators were — created a cooperative atmosphere. During one online session, for example, Phil Sanders and Bill Rabinovitch alternately painted one image. Since this particular session had started as a test run that then turned into an online IPI session, neither artist had many images stored locally to work with. Jeff Bary pitched in: working at another IRIS in the ACF Visualization Center, he downloaded images from various image databases, including weather satellite pictures and recently released Russian documents from the Library of Congress. These continued on page 6
Update on the ACF Arts and Media Studio

by Philip Galanter
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The ACF's Arts and Media Studio opened for student and class use last spring semester. Located on the second floor of the Education Building in one of the ACF's microcomputer labs, the Arts and Media Studio is a new facility designed to support classes and student projects which exploit computer-based tools for image production, the creation of two-dimensional and three-dimensional animations, music composition and sound manipulation, and new forms of interactive computer multimedia.

While the Arts and Media Studio provides a high-technology environment, its intended users include those who are active primarily in traditional forms of photography, painting, sculpture, animation, music composition, set and lighting design for theater, and journalism.

High-End Macs, NeXTs, and Peripherals

The Arts and Media Studio provides a number of Macintosh and NeXT systems configured to meet the needs of students in the arts and various forms of media production.

For example, each Macintosh system includes a fast Quadra 700 processor, large amounts of disk and memory storage, and Syquest drives which allow the use of 45 MB removable hard disk cartridges. Connected to various systems around the Studio are special peripherals such as pressure sensing drawing tablets, CD-ROM/CD-Audio drives, CD-quality audio input/output interfaces, videodisc players under computer control, and video adapters that can display NTSC (television) video in a window on the monitor and capture video to disk for processing, editing, and digital playback.

Professional Software

The Arts and Media Studio includes a large collection of professional software of interest to artists and other media producers. Previous articles have covered most of the available software (see accompanying box and the January 1992 and May 1992 issues of this newsletter), and the following describes new software now available:

- Aldus Gallery Effects. This is a set of software filters that can be applied to still and moving images (scanned or bit-mapped) to generate such effects as charcoal, chalk, or pen drawings; embossed, mosaic, or fresco renderings; film grain simulation; watercolor contineffects; and more. There is a standalone application for background processing of still images and motion pictures. These same effects are available within Adobe Photoshop, Adobe Premiere, and Fractal Painter as "plug-in" extensions. Advanced HyperCard programmers can also access the Gallery.

Software at the ACF Arts and Media Studio

The Arts and Media Studio is an ACF facility with special hardware and software for students in arts and media production classes. The software listed below, except where noted, is installed in the Studio. (For more up-to-date information please contact Howard Fink at 998-3422.) Similar hardware and software is available for use by faculty in the Faculty Microcomputer Lab; call 998-3044 for further information.

Still Image Software
Claris MacDraw Pro
Claris MacPaint
Adobe Photoshop 2.0.1
Adobe Illustrator
Fractal Designs Painter
Quark XPress
Aldus Gallery Effects

Moving Image Software
MacroMind 3D
MacroMind Director 3.1
MacroMind MediaMaker
Renderman
Paracomp Swivel 3D Pro
Raster Ops MediaGrabber
Apple QuickTime
Macro Model
Ray Dream JAG
Life Form
QuickPICS

Interaction Software
MacroMind Director 3.1
Voyager Videostack Toolkit
Voyager CD-Audio Toolkit
HyperCard 2.0

Sound and Music Software
AudioMedia
Digidesign Sound Designer II SK
Digidesign Deck
OpCode Max
OpCode Studio Vision
OpCode Galaxy Plus
Coda Finale

New software since last article
Available early Fall

continued on following page
Effects via XCMD’s.

- Ray Dream Designer JAG. JAG stands for “Jaggies All Gone”, and it is a small but powerful standalone anti-aliasing program. It can be used to set up a batch queue for different processing overnight, which is useful when animations are being processed.
- Life Forms. This program was originally designed for choreographers, but it is useful for anyone needing to design with or animate three dimensional human figures. Life Forms will present simple renderings of multiple coordinated actors, and it can also be used to export human models and animations for use with other programs, such as Director, Hypercard, Swivel 3D Pro, MacroMind 3D, etc.
- Fractal Design Painter 1.2. This is a very powerful paint program that interacts very closely with the Wacom tablet and wireless stylus to simulate a number of drawing materials (airbrush, pencil, chalk, crayon, etc.) and papers (various grades, roughness, patterns). It also supports all of the Photoshop plug-ins for acquiring images (e.g., from scanners) and filtering/effects. It can also be used with a scanned image to generate a new version, a clone rendered in a painterly or hand drawn style.
- The Book of MIDI. This HyperCard stack provides a good tutorial introduction to the Musical Instrument Digital Interface (MIDI) which allows electronic keyboards and other electronic instruments to interact with the computer for composition, editing, performance, and archival purposes.
- MacroMind Director 3.1. Director has been updated for QuickTime support. Director can now import and generate QuickTime movies.

Watch for future announcements of more software updates to Quark XPress, Max, Studio Vision, Galaxy Editors, and new software such as MacroModel and MidiPlay.

Interactive Painting, continued from page 4.

were quickly transferred to the IRIS where the NYU artists were working and incorporated into their online IPI “canvas”. Participating simultaneously on the same work were artists from Boston University, the University of California at Santa Cruz, and the Royal Melbourne Institute of Technology in Australia. At a later session, Marianne Petit arranged to take turns with another online artist by writing messages directly on the electronic canvas.

A unique experience for everyone, the Interactive Painting International was challenging and exciting for those involved, who hope to continue to participate in more events of this nature.
Virtual Space: 3D Modeling and Animation is a new, experimental class. It was offered for the first time this past spring by the Interactive Telecommunications Program (ITP). Students used Alias Power Animator both during and after class on the Silicon Graphics IRIS workstations in the ACF Visualization Center in Warren Weaver Hall.

Three-dimensional modeling and animation is a technique that enables the creation of visual imagery that can not be created in any other way. It allows a designer to create three-dimensional scenes that can be altered dynamically or explored interactively by a viewer. Currently, it is being used to create many dramatic special effects for films, television, advertising, and visualization of complex information. The technique lends itself well to the exciting new field of virtual reality, as well as to linear animation, hyperdata, and complex single image rendering.

Today the workstation vendor leading the field in high-end three-dimensional modeling and animation is Silicon Graphics. One of the major programs used is Alias. Films like Beauty and the Beast and Terminator 2 have helped make Alias one of the most well known software tools of this type among people in this field. Alias is also widely used in various design areas and architecture.

Students in the new course were introduced to three-dimensional modeling and animation techniques and completed significant final projects. The course teaches both the Alias software and the underlying concepts and aesthetics of three-dimensional modeling and animation, combining classroom instruction with individual tutorials and independent lab work. This year, we hope to be able to offer a two-semester sequence of courses to let students bring more complex projects to completion.

Three-dimensional modeling and animation is an exciting and important addition to the curriculum of TSOA’s Interactive Telecommunications Program. Students enjoy working in this area, and it is a field that is growing rapidly.
Ancient Pottery and Computer Animation
Are Featured in Spring Colloquia

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Clasical Greek pottery and computer animation were the subjects of the last two sessions of NYU's Spring '92 colloquia on uses of computers in university instruction and research.

An Archive of Classical Greek Pottery
Classical archaeologists Donna C. Kurtz, Thomas Mannack, and Melanie Medonca were the speakers at a presentation on the Beazley Archive database. Housed at Oxford University's Ashmolean Museum, the online database has become a vast collection of information about ancient Greek vases that is accessed via international network by scholars in a variety of disciplines. Vases recorded in the database date from about 600 - 300 B.C. Because decoration of classical Greek pottery tends to emphasize man, rather than animals or patterns, and to contain many scenes of daily life in ancient times, the material is of interest to social, political and art historians and students of ancient economy, as well as to linguists and dramatists, among others.

Thus far, documentation of some 400 thousand objects has been added to the database, opening up to researchers worldwide a wealth of information that previously could be found only in publications that were available solely to the Ashmolean Museum. The database continues to grow apace, with the discovery of new objects and the exchange via network of information with such other prominent institutions as the Louvre Museum and, soon, the Prado and the Musée D'Orlé. Future plans include the incorporation of images in the database and their transmission over network to database users. This will involve, among many technical changes, the use of Macintosh Quadras for inhouse work and an Oxford mainframe for international networking.

At NYU, the Beazley Archive database was incorporated last spring in an undergraduate research course offered by the FAS Department of Fine Arts. Professor Joan Connelly, who taught the course, introduced the speakers at this session, which was co-sponsored by the Fine Arts department, along with the series' sponsors, the Faculty of Arts and Science (FAS) and the Academic Computing Facility (ACF). (See the September 1991 issue of this newsletter for more on the Beazley Archive database and its use by Professor Connelly for instruction and research.)

Computer Animation as a Tool for Exposition and Education
In the last colloquium of the Spring 1992 session, Professor Jacob T. Schwartz of the Department of Computer Science (FAS), spoke to a full-to-overflowing audience on the potential of interactive computer-based multimedia as a tool for education.

Professor Schwartz began the session by pointing out that, in general, the methods and materials used in teaching have changed very little in hundreds of years. For the most part, teachers rely principally on lectures and printed material to educate their students.

Now, Professor Schwartz believes, the "rising power of computers brings us to the verge of effective use of computers for education." Much of the necessary multimedia technology is already in place to manufacture new tools for education and to implement them. The growing proliferation of computers in the educational marketplace puts advanced resources such as computer-aided design (CAD), animation, graphics, video, and sound at the disposal of teachers.

continued on facing page
Professor Schwartz demonstrated two recent multimedia programs which are being used by educators in elementary schools, high schools, and in higher education. Analog and Digital, part of a program used to teach science and mathematics to fifth and sixth grade students, utilizes a combination of sound, video, graphics, and animation to explain and demonstrate the difference between analog and digital representations of information.

Animated Relativity is an interactive multimedia program which Professor Schwartz co-authored with Diana Robinson. It teaches Einstein’s Theory of Relativity to high school students using animated sequences to enhance their understanding. The student can run the program in several different ways. There is a narration embedded in the program which helps guide the student from one topic to the next in a "building block" manner. Each topic is explained using its own set of graphics, animation, and voice-overs. The student is free to go over each of the concepts as often as he or she feels is necessary. The program also utilizes many of the tools of a hypertext document so that for example, students can see related information simply by clicking on a word or icon.

Among the advantages to using multimedia, rather than relying solely on a conventional textbook, is the ability of the student to "rewind" the program and go over certain parts of the material as often as he or she needs to achieve understanding. Another is the ability to use animation — a particularly useful device for portraying dynamic relationships.

Professor Schwartz believes that one of the major hurdles to the proliferation of electronic books has been the fragmentation of computer platforms. There has been little standardization of computers powerful enough to deliver the material effectively. Hopefully this problem will be ameliorated with the growing amount of cross-platform software currently being developed.

Coming in Fall '92:
New Colloquia, Technical Seminars, and Some Product Demonstrations

As we go to press, new colloquia are being planned for NYU's Fall '92 series on innovative uses of computers in university instruction and research. The colloquia, which are open to all NYU faculty, staff and students, are sponsored by the Faculty of Arts and Science (FAS), the Academic Computing Facility, and — for special topics — other NYU departments, with support from the IBM Corporation and Apple Computer, Inc.

Also being continued this 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. And this fall, the ACF and the NYU Book Centers will be sponsoring a new series of vendor demonstrations of microcomputer products that are of particular use in academic applications.

Announcements of these events will appear in the NYU Today Hotline, the biweekly publication of the NYU Information Center. Descriptions of colloquia and some of the other events will be mailed to all NYU faculty. To ensure that you receive a flyer, ask to be added to the ACF’s University or E-mail mailing lists: send E-mail to document@adi:lusrcr.nyu.edu or call 998-3333.
Computers and Legal Education

Computer-Based Tutorials Assist NYU Students of Law

by Liz Evans

Liz Evans is the Online Services/Reference Librarian at the NYU School of Law.

The Center for Computer-Assisted Legal Instruction (CALI) and its subsidiary, Legal Education Automation Project, are two organizations that have developed, authored, revised, and distributed computer-based tutorials for a consortium of law schools of which the NYU School of Law is a member.

CALI provides a collection of interactive, computer-based lessons covering twenty subject areas in legal education. The exercises are designed to augment traditional law materials. They can be used as supplemental materials, or can be integrated with other course materials.

The twenty areas of legal education reflected in the CALI library of exercises include accounting, civil procedure, contracts, criminal law, evidence, insurance, property, torts, and so on. Most of the programs are simple tutorials, in which the student reads a screen and answers "yes" or "no." The program provides more detailed explanation if the answer is incorrect. The CALI exercises include a Question and Answer Analysis and a Student Scores component which produces reports for faculty on each student's session.

Faculty members at NYU Law use the programs on professional responsibility and accounting to give students additional examples illustrating the concepts discussed in class. Particularly in Professional Responsibility, which is the focus of a section in the New York State Bar Examination taken by each graduate, the law student reads through different scenarios and then provides, by referring to the Code of Professional Conduct, the canon and rule that is relevant. Professor Stephen Gillers states that his students seem to like the computer exercise, "...as much as one can like an additional assignment," because it clarifies different aspects of legal situations.

New and revised CALI programs are sent to the Law Library each August. They are kept in the library's Law Student Computer Room, where the CALI exercises are loaded on three IBM PC's set aside for students' use. Exercises are available on compact disk, floppy disks or magnetic tape, and can be used on IBM-compatible computers or Macintoshes.

The consortium was formed in 1982 to coordinate the distribution and use of computerized instructional materials and to establish standards for hardware, software, and courseware. NYU Law School has been a member since 1984.

Over the years, both CALI and the use of computers and interactive video have become more integrated into legal education. This fall, CALI begins its tenth year of working with law schools. Membership has grown from 22 law schools during 1982-83 to 127 members currently participating in the consortium. The first year, sixteen programs were offered; in 1992-93, there will be 85 programs covering forty areas of law. For further information on CALI, please call Liz Evans at the Law Library at 998-6319.
One of the hottest topics these days in the world of microcomputers is the choice between Microsoft’s Windows 3.1 and IBM’s OS/2, two operating systems for IBM PCs and compatibles. This is a central choice for PC users because it is the “operating system” software which largely influences how you interact with your computer, determining both the software you can run and the computer’s user interface.

For the past decade, the dominant computer operating system for IBM-type PCs has been DOS, a joint product of IBM Corp. and Microsoft, Inc. But DOS is by now an archaic operating system that imposes many limitations on the software that can be developed for PCs. In fact, since the mid-1980s, the two companies have pursued development of a successor to DOS. Windows and OS/2 are the result, and in the course of developing these two systems, the two companies have gone their separate ways — to the consternation of many computer users and vendors who have viewed the steady cooperation of IBM and Microsoft as the solid foundation upon which the microcomputer revolution has been based.

Microsoft Windows and OS/2
Microsoft’s recently released Windows 3.1 is the latest version of a product which has taken the industry by storm over the last year. Windows represents Microsoft’s effort to build on top of DOS a Macintosh-like user interface (a graphical user interface or GUI) and an environment for which software vendors, including Microsoft itself, can create new software and new versions of old software. Windows preserves the ability of the PC to run most DOS applications, but provides an assortment of capabilities largely unfamiliar to old-time PC users: what-you-see-is-what-you-get text processing, the ability to issue commands by clicking on icons or pulling down menus, multiple windows on screen, the ability to run multiple programs simultaneously — all the capabilities that Macintosh users have been familiar with for many years, but running on less costly PC-compatible hardware.

One way of viewing OS/2 is as IBM’s effort to do Windows one better: to provide all the capabilities ofWindows (and more) in a single package, designed afresh and not built on top of the shaky foundation of DOS. IBM has attempted to give OS/2 the capability of running essentially all DOS, Windows, and older OS/2 software. Originally designed collaboratively with Microsoft, OS/2 is now solely the responsibility of IBM; the significant modifications from earlier versions to the recently released version 2.0 are almost entirely due to IBM.

Much of the Windows-OS/2 debate is heavily colored by the emotions and allegiances of satisfied...
and dissatisfied customers of the two companies. The technical merits and demerits of each product are sometimes overshadowed by *ad hominem* arguments over such issues.

**OS/2 at the ACF**

At the ACF, we are making Windows 3.1 available to our users, and are evaluating OS/2 to determine its potential in our environment.

For those of you who would like a look at OS/2, the ACF Faculty Microcomputer Lab has the software available on machines ready for your examination. We also have an increasing collection of articles and reviews on OS/2 now appearing in the computer trade press.

For those who would like to experiment themselves, IBM's low-cost upgrade offer (from Windows, $79, and from DOS, $99) will be in effect until October 31, 1992, but may be extended thereafter (call IBM at 1-800-3-IBM-OS2). And finally, there are a number of OS/2-related bulletin boards — including those available via the Internet and on public services such as Compuserve — which are burgeoning with new and largely enthusiastic activity.

**Is OS/2 for you? Now? Soon?**

To run OS/2, you must have a '386sx, '386, or '486 processor in your machine, four or more megabytes of memory, and at least 30-40 megabytes of free hard disk space. These are minimum requirements; for reasonable or good performance; you should have 6-8 megabytes of memory, and the more free disk space the better. You should also have VGA (or better) video capabilities, as well as a mouse.

Most machines currently running Windows (if they have four or more megabytes of memory) are suitable for running OS/2. In other words, the majority of machines being sold today (often bundled with Windows pre-installed) can run OS/2. The greatest likelihood of problems results from incompatible hard disk or video drivers, or from some older software packages written for DOS or Windows which OS/2 cannot control. To make sure, call IBM at 1-800-3-IBM-OS2.

An upgraded-version of OS/2, anticipated for sometime this fall, is expected by many to fix bugs and add features; many users would be wise to wait for this release before moving to OS/2. Enterprising "power users," software developers, and those irritated by Windows' flaws may wish to dive in sooner.

If you have sufficient hard disk space, one way to experiment with OS/2 is to install it on your hard disk, but keep DOS (and Windows, if you use it) as well. You can set up OS/2 in such a way as to give you the option, when the machine is turned on, to boot either DOS or OS/2. This usually requires backing up your hard disk, repartitioning it, reinstalling DOS, and then installing OS/2.

Will OS/2 supplant DOS and Windows in the foreseeable future? Will it be a major player or a marginal player in the field? Of course, the answers to these questions will not be based solely on technical considerations; the marketplace will determine the importance of OS/2 and OS/2-based software.

There is no question but that OS/2 will be a significant player in the PC operating system market; it offers software developers a modern operating system upon which to build their programs and provides users a versatile and robust environment in which to work. To a large extent, OS/2 also preserves users' investments in DOS and Windows software, while promising a new generation of faster and more powerful software for those who require it. Further, the success of Microsoft Windows is helping to push the development and adoption of more powerful microcomputers — especially in the area of video and multimedia capabilities — which make OS/2 all the more viable in the marketplace. It remains to be seen whether Microsoft can maintain its popularity with future versions of Windows, or whether OS/2 will become the successor to Windows as the "operating system of choice".

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**New Macintosh and IBM PC Antiviral Software from the ACF**

A new Macintosh virus, known as T4, was discovered in several locations around the world in June, 1992. The virus was included in versions 2.0 and 2.1 of the game GoMoku. Copies of this game were posted to the USENET newsgroup comp.binaries.mac and to a number of popular bulletin boards and anonymous FTP archive sites. Macintosh antiviral programs Disinfectant 2.9 and Gatekeeper 1.2.6 have been updated to detect strains of the T4 virus.

The IBM PC anti-virial package *F-PROT* was recently updated to version 2.04. An assortment of enhancements have been made: improved scanning of compressed files; more accurate variant detection; improved disinfection capabilities; and greater speed of operation.

These programs are available from the ACF. To obtain them, use Kermit to connect to INFO and then access the Downloads section and retrieve the files from the Mac or MSDOS directories. Alternatively, copies may be obtained from the ACF Faculty Microcomputer Lab, Room 313, Warren Weaver Hall. Bring one diskette with you.

— Gary Chapman
Optimizing System 7 on Your Macintosh: A Few Tips

Here are a few tips and tricks to help System 7 users speed up their Macs when using System 7. These items represent some of the easy ways to get more out of your Macintosh. If you have specific questions on using your computer, please contact the Faculty Microcomputer Lab at 998-3043. Look for more tips in future issues of this newsletter and, if you have come up with Macintosh tricks of your own that you would like to share, please contact the editors and it will be considered for a future issue of this newsletter.

Using more than eight megabytes of memory: Under Macintosh System 6.x and System 7.x without 32-bit addressing turned on, the Mac knows that it exists but cannot use it. When you select “About the System” form the Apple menu, the system still reports the extra memory that it cannot access as part of the memory allocated to the system. If you are using System 7, you will need to turn on 32-bit addressing in the Memory Control Panel to be able to use this extra memory.

System 7 Tune-Up: Apple has introduced a System 7 Tune-Up (version 1.1.1) which should be installed by all System 7 users. This tune-up includes a number of fixes and enhancements, including faster printer drivers and a fix for the disappearing folders bug. The early releases of System 7 included a bug that caused some folders to not appear in the Finder. However, these folders where accessible from within applications. The Tune-Up is available from ACF Faculty Micro Lab.

Calculate Folder Sizes: To speed up the amount of time it takes the system to open folders and list their contents, turn off the calculate folder sizes in the Views control panel.

Macintosh IIi and IIci video and memory use: For users of Macintosh IIi computers, increasing the disk cache to at least 384K in the Monitors Control Panel will free up about 264K of memory for system and application use and will also give you screen rewriting performance for 256 colors or grayscales almost equal to that of black and white. In the IIci, the video RAM shares memory with applications and the system, making the first one megabytes of RAM very busy. Increasing the cache will take some of the stress off this area of memory and improve system performance. This trick will also work on the Macintosh IIci if there are four 256K SIMMS in RAM bank A.

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At the ACF’s Instructional Micro Labs, Fall ’92

NYU students, faculty, and staff may use ACF microcomputers at no charge to the individual as general users, or under two types of accounts: individual (or research) accounts, and class accounts.

Obtaining an ACF account. To use the lab as a general user, 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). They are issued for specific academic purposes and allow priority access to ACF computers. 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 Fall '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 85 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):
- 38 Macintosh II computers with hard disks and color monitors
- 20 Macintosh IIci computers with hard disks, color monitors, and 16 MB memory
- 24 IBM PS/2 computers, model 55SS, with mouse, VGA color monitor

Tisch Hall, Room LC-8 (50 computers):
- 12 IBM PS/2 computers, model 55SS, with mouse, VGA color monitor
- 15 IBM PS/2 computers, model 30, with monochrome monitor
- 23 Macintosh Plus computers with hard disks

14 Washington Place (54 computers):
- 9 Gateway 2000 computers with 486 processors, 8 MB of memory and Super-VGA monitors
- 19 IBM PS/2 computers, model 55SS, with mouse, VGA color monitor
- 26 IBM PS/2 computers, model 70, with mouse, VGA color monitor, 25 with numeric coprocessor and joystick

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Classrooms and office space for instructor-student conferences

Two computer classrooms at the ACF's Education Building Lab – one with Macintoshes and another with PCs – may be reserved by faculty for occasional class sessions (contact ACF consultant Howard Fink at 998-3399). Any instructors whose classes are using the ACF labs for their courses may reserve office space to meet with individual students to discuss their work; computer-equipped office space for instructor-student consultation hours is available at both the Education Building (contact Howard Fink) and at the 14 Washington Place lab (contact ACF consultant Jac Fried at 998-3450).
New Computer Store Will Open in Fall ’92

by Kathy Bear
beark@acdluster.nyu.edu

Kathy Bear is Manager of the Computer Department of the NYU Book Centers.

Sometime during the fall semester, the Book Centers’ new Computer Store will be opening at 242 Greene Street, between West Fourth Street and Washington Place (the space formerly occupied by the Law Book Store). Our new location will give us room for more microcomputer displays, and additional software and supplies. Stop by and see the many new products we have on hand. We hope to be your one-stop center for computer purchases.

The Computer Store will be running special sales, product days and many promotional events. Watch for our advertisements in the Washington Square News or in our flyers.

Save Oct. 5 for Computer Fair IV!
Our first big event will be NYU’s Computer Fair IV. This year’s Computer Fair will be held in Eisner and Lubin Auditorium in the Loeb Student Center on Monday, October 5 from 10am until 8pm.

Jointly sponsored by the Computer Store, the Academic Computing Facility and the Purchasing Services Division, the fair should be an informative and fun day. We will have a variety of hardware and software vendors (Apple, IBM, NeXT, Sun, Microsoft, and WordPerfect, just to mention a few). So stop by, see and try the latest products, speak to representatives from a variety of vendors, and take a chance at winning one of our door prizes!

An IBM Service Center
Opening the Computer Store allows us to offer new products and services to the NYU community. We have changed our contract with IBM, so that we will now stock their products, and will offer IBM service and support. We will keep the most popular of their academic offerings on hand in the Computer Store, so that now it will be possible for you to purchase an IBM configuration and take delivery the next day.

The Computer Store has opened a service center for IBM products. Most IBM microcomputers come with a one-year warranty, which the Computer Store will now be able to honor. We will also be able to perform out-of-warranty repairs and will sell IBM service contracts.

So, you can now purchase an IBM configuration through the Computer Store more quickly and with the assurance that we will offer the after-sale support and service to ensure the successful use of your IBM computer.

Hewlett Packard Printers
The Computer Store added the Hewlett Packard printer line to its offerings over the summer. Hewlett Packard printers have an excellent reputation, and they offer models compatible with both Apple and IBM. They have a complete line of printers, ranging from the low-end ink jet varieties to versatile laser printers. We have had numerous requests for Hewlett Packard products and are pleased to be able to offer them to our NYU customers.

Apple Back-to-School Specials
For a limited time, Apple Computer has reduced its prices on a variety of their microcomputer products. This year’s “Back-to-School” specials include reduced prices along with specially bundled software on a variety of models and are available until October 15, 1992. The Macintosh Classic II’s, LC II’s, IIci’s and the Powerbook 145 4/40 are all available during this time frame at significantly reduced prices. In addition, under this special offer, these machines come with the following pre-loaded software: American Heritage Dictionary, Correct Grammar, Resume Writer, Calendar Creator and Random House Encyclopedia. Bundled with this back-to-school software, these are exceptional packages for anyone interested in purchasing one of these Macintosh models.
Electronic mail, or E-mail, has become an essential tool for many members of the NYU community — faculty, administrators, and students alike. Increasingly, it is an important means of getting a job done quickly and efficiently, and of exchanging information, ideas, documents, data, and software with colleagues at NYU and around the world. (See, for example, “Scholarly Electronic Conferences” in the Networks section of this newsletter.) Now, with programs like Eudora, E-mail has become easy and very convenient, indeed.

Eudora is a friendly, highly functional E-mail program that the ACF has begun to distribute free of charge to members of the NYU community. It runs on Macintosh computers and offers a familiar, consistent Mac interface that is readily learned and remembered. Currently, Eudora can be used by anyone with a Macintosh and an Ethernet or Localtalk connection to NYU-NET, and the ACF is starting to help people with NIU connections to implement Eudora on their Macs. Also being distributed, on an experimental basis, is a version of Eudora that can be used with dialup connections from home or when one is travelling, although there are still some minor difficulties with the program’s dialup capability.

Eudora makes creating and sending an E-mail message as simple and flexible a procedure as typing a letter on your Macintosh. Reading, forwarding and storing your incoming mail is equally simple to do. Transferring text between your mail messages and other documents is a straightforward operation with Eudora, and the program offers many other options that make it a useful and flexible productivity tool. The program is used in conjunction with an account on a mainframe or minicomputer, like the ACF-cluster, which acts as your mail “server” and “gateway” to other users and machines — local, national and international. However, Eudora handles all your transactions with the larger machine automatically, connecting to the mail server for you and transferring your incoming and outgoing messages from and to the larger machine.

Creating an Outgoing Message

Stepping through the procedure of creating and sending a message will help demonstrate how simple and convenient Eudora is. You start by selecting New Message from the Message menu. A new message window appears. You type in the recipients’ addresses and the Subject of the message on the lines marked “To:” and “Subject:”, and add the addresses of any individuals to whom you wish to send copies (Cc:) or blind copies (Bcc:). Until you send the message, you can move back and forth among these fields — simply by clicking on them or by using the Tab key — and change them at will.

You type the body of your message in the area below these headers. Here again, you type the text of your outgoing Eudora message is typed in this box. As you type, text wraps automatically, so that you do not have to press (Return) at the end of each line.

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You can paste text from Macintosh documents into the body of your message and the text, if formatted — in Word, or PageMaker — will be instantly converted to plain ASCII for you, so that your message is ready to be transmitted. You can also attach a formatted document — Word, PageMaker, Excel, and so on — to your message.

Eudora: Easy and Convenient E-Mail on Your Mac

by Estelle Hochberg
hochberg@acfcluster.nyu.edu

Electronic mail, or E-mail, has become an essential tool for many members of the NYU community — faculty, administrators, and students alike. Increasingly, it is an important means of getting a job done quickly and efficiently, and of exchanging information, ideas, documents, data, and software with colleagues at NYU and around the world. (See, for example, “Scholarly Electronic Conferences” in the Networks section of this newsletter.) Now, with programs like Eudora, E-mail has become easy and very convenient, indeed.

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message, you can amend it at will, using standard, simple Macintosh editing functions, like cutting, pasting, deleting and so on. The text of the message "wraps" automatically as you type, so that you do not have to press the Return key at the end of each line. You can open a Macintosh document, and simply cut and paste the text into Eudora’s new message window. Or you can ask Eudora to append a document that you have created with another Macintosh application — Word or PageMaker, for example — to your outgoing message. (The name of the document will appear on the line marked “X-Attachments”.) Further, if you are sending the message to another Eudora user, all of the document’s formatting will be intact when it is opened on his or her machine.

When you are ready to send the message, you click on the “Send” button in the upper right hand corner of the message window. If you are not ready to send the message, you simply save it for further thought and change. This is one of the features of Eudora that I most appreciate: it accommodates itself to interruptions and to the way work often has to get done.

You can have several new messages open at one time and go back and forth among them. You can stop in the middle of creating an outgoing message and read an incoming message, modify the Subject header, add or delete a recipient — do just about anything, in fact, including shutting down your Macintosh and heading home for the day, leaving the message to be completed the following morning.

To “stamp” your outgoing messages with a signature block, you simply click on the “JH” icon in the icon bar close to the top of the window. Your signature block can provide any information that you wish — your name and title, your US mail address, telephone and FAX numbers, and E-mail address are likely candidates for inclusion. To have a file copy of your message kept for you automatically, you click on the icon showing two offset, dogeared sheets of paper.

**Incoming Mail**

Reading, replying, forwarding, redirecting, and filing your incoming mail are equally convenient and straightforward with Eudora. To read a new message, you simply click on its summary description in the In mailbox window, where a list of all your incoming messages is displayed.

To reply to the message, you click on the Reply option in the Message menu. A new outgoing message window appears. Eudora automatically inserts the sender’s address on the To: line. The text of the original message, set off by carets (>) to make it distinct, also appears, and can be edited or deleted, as you prefer. Thus, for example, you can insert comments on, and responses to, the original message simply by typing them in at the appropriate line. Replying, forwarding and redirecting an incoming message are done in similar fashion. Again, until you
To: ratuni@ACFcluster.NYU.EDU  
From: hochberg@acfcluster.nyu.edu  
Subject: Re: Sample Incoming Message  
Cc: 
Bcc: 
X-Attachments: 

Forwarding a message with Eudora.

Out
Trash
New...

Mailbox

In

Out

Many Other Features

I find the ease with which messages can be filed and organized in "mailboxes" a particularly useful feature of Eudora. I use mailboxes, for example, to group messages associated with particular projects or with an upcoming meeting or event. Again, it is all very straightforward and flexible. You create a mailbox by selecting "New" from Eudora's Mailbox menu. Within mailboxes, messages can be further organized, if you like, in folders and subfolders, and reorganizing both mailboxes and folders is pretty much a "snap". Sorting messages alphabetically and locating them through word- or phrase-searches are also done automatically through menu options.

Addressing E-mail is another task that Eudora simplifies considerably. The program "understands" Internet names directly, so that, for example, there is no need to enclose an Internet address in "in" "%..." as one does when sending mail from the ACF cluster. Moreover, E-mail addresses copied from other messages and documents can be pasted into the To:, Cc:, and Bcc: lines on an outgoing message. With Eudora, I create "nicknames" for the addresses of individuals with whom I correspond frequently — so that, for example, when I address E-mail to "John", Eudora automatically directs the message to "quinan@acfcluster.nyu.edu".

There are many other useful features that you will quickly start to employ as you begin to explore Eudora. In addition, if you happen to be running System 7 on your Mac, you will find that Eudora's "balloon help" will make the program even easier to use.

Getting Started with Eudora

Members of the NYU community can obtain a copy of Eudora from the ACF by contacting Larry Mingione at the ACF's Faculty Microcomputer Lab (998-3043). There is currently no charge for the program and its excellent documentation, although you will be asked to supply your own blank floppy disk. Both a beginning document and a reference manual are available. If you prefer these in hardcopy, there may be a modest charge for the reference manual, to cover photocopying costs. In addition, ACF tutorials in the use of Eudora are being offered for the first time this semester; please see the Tutorials section of this newsletter for information.

Eudora and its documentation are being distributed at NYU with the permission of the University of Illinois at Urbana-Champaign and its author, Steve Dorner, formerly of that institution.

A PC Mailer from the ACF

PC users need not despair! The ACF is also starting to distribute, on an experimental basis, Pegasus, a mailer for PCs connected to a Novell network which is in turn connected to NYU-NET, and will be offering Pegasus tutorials this semester (see Tutorials, for times and locations). In addition, a PC version of Eudora — for both Novell-connected PC and PCs connected individually to NYU-NET — is under development and is expected to be released in late winter or early spring.
Using the Internet

Usenet News Groups

Do you want to share ideas about education, literature, history, science or other disciplines with other scholars, and students around the world, but would rather not spare the time or expense of traveling to a conference? Do you have a question on how your computer works or want expert advice on how to get rid of the white spider mites on your house plants? Then you may wish to participate in the Usenet news groups.

Usenet news groups are electronic discussions on almost any topic imaginable. Anyone with Internet access can participate in these news groups, and, in fact, messages in these groups can reach some 2.5 million people. That's a lot of people. There are approximately 2400 news groups, each focusing on a specific area, such as the literature of Mark Twain or Macintosh applications, and more groups are continually being added. People from universities, government agencies, high schools, and some businesses all over the world participate in Usenet news groups.

Usenet news groups are accessible to anyone at NYU with a UNIX or VMS account or a computer in your NYU campus office that is connected to NYU-NET. Unlike the BITNET discussion lists mentioned elsewhere in this newsletter (see page 17 for some new lists), Usenet news groups require that you run a special program, called a news reader.

The existence of thousands of news groups available might seem somewhat daunting, and the volume of messages posted makes it impossible to keep current with news in each group. News readers can help you do this. The news reader keeps track of the news groups and of which messages in each group you have read. The best plan of attack is to browse the groups for a while and select those that match your interests. Once you have found such a group, you can subscribe to it, and the news reader will group it with other lists that interest you, providing you with faster access to them. This provides you with faster access to the news. If you have subscribed to any group, you can still read other groups at any time.

Half the fun of the news groups is not just reading what other people have to say, but jumping into the discussion with your own views and expertise. The news groups are full of people who have a lot of knowledge on a variety of subjects and an opinion on every one of them, so discussions can get quite lively.

Some Tips on Using News Groups

If you are a beginning news group participant, you should read the news.newusers.questions group regularly, since this will introduce you to the basic culture and conventions of the groups. New and experienced users should also pay attention to the "frequently asked questions" (FAQ) that are posted periodically to news groups. FAQs are exactly what they sound like — compilations of the questions that are most frequently asked in a particular group. While not all groups post FAQs, those with a heavy volume of messages almost always do.

Reading these FAQ continued on following page
postings will familiarize you with news groups in general as well as provide you with much needed information on a variety of topics specific to the particular group.

**Conventions and Courtesy**

When posting your own message to a group, do make sure that you include a subject line, one that is clear and concise and that lets people know what is contained in your message. When you do post a message to a news group, try to select the news group that most closely and narrowly matches your subject.

For example, posting a question about writing to the comp.text group might get you some of the answers that you are looking for, but if you post to misc.writing, you will probably receive answers that are more detailed and better informed. Would it help you to post the question to both groups? Probably not, and, in general, posting the same message to more than one group is frowned upon by others who use the news groups (and can result in your receiving a flood of E-mail telling you this).

**Accessing News Groups at NYU**

On the ACF's UNIX and VMS computers, you can use the news readers nn, News, and Vnews to access and participate in the Usenet newsgroups. The accompanying table of basic commands will help get you started. Each news reader also provides online help providing more detailed information on its use.

For PC and Mac users, a number of news reader programs have been developed and ACF staff members are experimenting with them to determine which are most viable for use at NYU. Your Mac or PC must be connected via ethernet or localtalk to NYU-NET in order to use such software. If you are interested in trying a microcomputer news reader, contact Gary Chapman at the ACF via electronic mail (chapman@nyu.edu).


**Your Own Newsgroup?**

If you find that there is no group covering your area of interest, you can create a new group. It is generally recommended that, before you create a new group, you spend several months reading the other news groups and familiarize yourself with the large number of groups available and with some of the etiquette involved in using the groups. To find out more about creating your own newsgroup, use Anonymous FTP to connect to pit-manager.mit.edu, then cd /pub/usenet/news.admin and get the file How_to_Create_a_New_Newsgroup.
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 discussion lists focusing on a wide variety of topics in the humanities, arts, and the social, physical, and medical sciences. In this issue, we present a few newly created or discovered lists that we thought might be of interest. 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 Electronic Mail Accounts (see page 23 for details). Unless otherwise noted, all E-mail addresses are Internet addresses.

• American literature. International forum for the discussion of topics and issues in American literature. Subscription address: LISTSERV@UMCVM.BM.MISSOURI.EDU. List name: AMILIT-L.

• John Milton. A moderated electronic digest for scholars, students and others interested in the life and work of John Milton, and a repository for information on the current state of Milton scholarship. Subscription address: MILTON-REQUEST@UBVAX.URICH.EDU. List name: MILTON-L.

• Russian history. Discussions of any aspects of Russian history from the reign of Ivan II (1462-1505) to the end of the Romanov dynasty and Nicholas II (1894-1917). Subscription address: LISTSERV@VM.USC.EDU List name: RUSHIST.

• Ancient Mediterranean history. Debate, discussion and exchange of information by students and scholars of the history of the Ancient Mediterranean. Subscription address: LISTSERV@ULKYM.LOUISVILLE.EDU. List name: ANCIENT-L.

• Renaissance history. Forum for students and scholars of Renaissance history. Subscription address: LISTSERV@ULKYM.LOUISVILLE.EDU. List name: RENAISS-L.

• History of the law. Forum for students and scholars of the history of Feudal, Common and Canon Law. Subscription address: LISTSERV@ULKYM.LOUISVILLE.EDU. List name: HISTLAW-L.

• World history. Discussion of the teaching, methodology and theory of a scientific and non-Eurocentric world history. Subscription address: WORLD-L@UBVM.CC.BUFFALO.EDU. List name: WORLD-L.

• Population Biology is a synthesis of population ecology and population genetics, pursuing a unified theory to explain the structure, functioning and evolution of populations of living beings. Subscription address: bioscI@net.bio.net. List name: POP-BIO.

• Autism. A new list formed at St. John’s University currently provides a forum for the developmentally disabled, their families, their teachers, and others interested in this field. Subscription address: LISTSERV@SVUM (Bitnet). List name: AUTISM.
NREN Bill Signed Into Law

Mike Roberts is Vice President for Networking at EDUCOM, a 600 member association of colleges and universities with common interests in information technology.

The EDUCOM Networking and Telecommunications Task Force, a group of sixty universities and corporations, of which he is the staff director, has been active in planning and advocacy for the NREN.

After a lengthy and tortuous legislative history, the "High Performance Computing Act" of 1991 was signed into law by President Bush on December 9th, 1991. The bill provides a mandate for federal support of a variety of computing and communication activities and authorizes expenditure of more than three billion dollars over the next five years for existing and new programs. This is equal to about 1% of total planned federal R&D expenditures over the same period. The amount allocated to the NREN, for both research and production expenses, is approximately $100 million a year over the five years. Appropriations for agencies participating in the HPCC program in FY92 were recently completed with requested funding levels essentially intact.

In his remarks at the signing ceremony, the President said, "The development of high performance computing and communications technology offers the potential to transform radically the way in which all Americans will work, learn, and communicate in the future. It holds the promise of changing society as much as the other great inventions of the 20th Century, including the telephone, air travel and radio and TV."

Two approaches

For the last two years, Republicans in the Administration and Democrats in the Congress have been pursuing separate but parallel approaches to high performance computing and communications (HPCC). For the Administration, the key players have been Science Advisor Allan Bromley and Budget Director Richard Darman. In the Congress, Senator Al Gore and Representative George Brown, chairmen of the respective Science Committees, teamed up to push the bill through in 1991 after a last minute series of glitches ended in failure last year. Despite moments of partisan politics, a cast of dozens of hard working advocates for the NREN, in and out of government, persevered to a successful conclusion.

Originally conceived as a high tech replacement for the aging and overloaded ARPANET, plans for the NREN have undergone successive waves of program redefinition and expansion over the past five years. For instance, section 102 of the bill states, "The Network (i.e., NREN) shall provide for the linkage of research institutions and educational institutions, government, and industry in every state."

Benefits

As the benefits of computer-based networking have grown more apparent in recent years, pressure for greater access to the NREN has increased. The access requirement, as passed by the Congress, says, "Federal agencies and departments shall work with private network service providers, State and local agencies, libraries, educational institutions and organizations, and others, as appropriate, in order to ensure that the researchers, educators and students have access, as appropriate, to the Network. The Network shall provide access, to the extent practicable, to electronic information resources maintained by libraries, research facilities, publishers, and affiliated organizations."

In another change from earlier plans, the bill makes provision for the uses of the network in addition to its creation. "The Director (of the White House Office of Science and Technology Policy [OSTP]) shall assist the President in coordinating the activities of appropriate agencies and departments to promote the development of information services that could be
NREN, continued from preceding page

provided over the Network.

These services may include the provision of directories of the users and services on computer networks, data bases of unclassified Federal scientific data, training of users of data bases and computer networks, access to commercial information services for users of the Network, and technology to support computer-based collaboration that allows researchers and educators around the Nation to share information and instrumentation."

Characteristics

The enabling legislation explicitly recognizes that many of the goals of the NREN cannot be realized with today’s technology. In addition to the requirement that the Network demonstrate gigabit transmission speeds by 1996, it sets out ten desired characteristics of the Network as a guide for its development and evolution.

The Network shall

The network shall: (1) be developed and deployed with the assistance of the computer, telecommunications, and information industries; (2) be designed, developed, and operated in collaboration with potential users in government, industry, and research institutions and educational institutions; (3) be designed, developed, and operated in a manner which fosters and maintains competition and private sector investment in high speed data networking within the telecommunications industry; (4) be designed, developed, and operated in a manner which promotes research and development leading to development of commercial data communications and telecommunications standards, whose development will encourage the establishment of privately operated high-speed commercial networks; (5) be designed and operated so as to ensure the continued application of laws that provide network and information resources security measures, including those that protect copyright and other intellectual property rights, and those that control access to data bases and protect national security; (6) have accounting mechanisms which allow users or groups of users to be charged for their usage of copyrighted materials available over the Network and, where appropriate and technically feasible, for their usage of the Network; (7) ensure the interoperability of Federal and non-Federal computer networks, to the extent appropriate, in a way that allows autonomy for each component network; (8) be developed by purchasing standard commercial transmission and network services from vendors whenever feasible, and by contracting for customized services when not feasible, in order to minimize Federal investment in network hardware; (9) support research and development of networking software and hardware; and (10) serve as a testbed for further research and development of high capacity and high-speed computing networks and demonstrate how advanced computers, high-capacity and high-speed computing networks, and data bases can improve the national information infrastructure."

Suspicions

The Congress has some lingering suspicions about the depth of the Republican Administration’s commitment to the NREN, and has provided in the new law for a series of studies and reports. Within a year of enactment, the Director of OSTP, Dr. Bromley, is to report to the Congress on issues such as combining commercial and noncommercial services, funding sources, operational structure, security policies, and protection of copyrighted material distributed on the Network. It is expected that individuals and organizations from throughout the Internet community will be asked to contribute to these studies and accompanying recommendations.

Management

Over the multi-year legislative history of the NREN bill, unanimity emerged from industry, academic, and agency testimony on the strong need for a high-performance national network. The final bill is remarkably faithful to the basic principles laid out in 1986 and 1987 despite the broader constituencies and responsibilities picked up along the way. The chief failings of the measure are in the areas of governance and...
management, and reflect both agency politics and genuine uncertainty in the community on the best way of building and operating such an ambitious undertaking. The federal agencies with the largest stakes in the NREN—NSF, Energy, Defense, and NASA—were unwilling to have one amongst them singled out for a lead agency management role. They and their Congressional committee supporters were even unwilling to have the Director of OSTP tasked with management of the NREN. The final language turns the responsibility over to the President, which provides the maximum maneuvering room at the Cabinet Secretary level for behind the scenes horsetrading on assignment of network management responsibility.

Of perhaps greater consequence, the bill makes no provision for representative governance of the NREN, a network which will require vastly larger investments outside of the federal government than within it. The tolerance within the networking community for the excessive federal bias of the program, largely the product of the quietly effective way in which federal networking executives have supported Internet growth in the last several years, may be sorely tested if reasonable mechanisms for shared governance of this unique enterprise are not forthcoming.

References

MathSource: An Electronic Library of Mathematica-Related Materials
The "global village" of Mathematica users has contributed materials that are freely available from MathSource, an electronic library service of Wolfram Research, Inc. You access MathSource via the Internet, direct dial-up, and electronic mail. Many of the materials are also listed in a catalog obtained directly from Wolfram Research. Material in MathSource includes:
• Mathematica packages. Programs usable on any computer system.
• Mathematica Notebooks. Interactive programs that can be used with Mathematica on Macintosh, NeXT systems, and Microsoft Windows.
• Examples. Notebooks and Packages that demonstrate presentations of graphics, sounds, and animation, using Mathematica.
• General Mathematica information.

Among the various E-mail and network accesses to MathSource is anonymous ftp at mathsource.wri.com (140.177.10.76). Further information concerning MathSource and Mathematica can be obtained from ACF consultants at 998-3422.

(MathSource and Mathematica are trademark of Wolfram Research, Inc.

For information on a recently obtained NYU site license for Mathematica, please see the Vendor Agreements section of the newsletter.)

—Vincent Doogan
doogan@acfluster.nyu.edu

Connect to MEDLINE
MEDLINE, the National Library of Medicine database containing citations and abstracts from over 3,600 biomedical journals, is now available online from NYU's Frederick L. Ehrman Medical Library. MEDLINE contains citations to the medical, dental, nursing, veterinary medicine and the preclinical sciences literature.
Throughout the next two months MEDLINE searching will be available at no charge. For a brochure containing information about connecting to MEDLINE and searching over NYU-Net, call the Medical Library: 263-8483.
A more detailed article on Medline is planned for the November issue of this newsletter.

A List of Network-Accessible Health Science Resources
A comprehensive list of health science resources available on the networks has recently been updated. The BITNET/Internet Health Science Resource List includes Listserv groups, Usernet groups, Freenets, Data Archives, Electronic Newsletters and Health Science oriented databases.

The list can be accessed via ftp or E-mail. For ftp access, ftp to ftp.sur.net, cd to the directory public, and get the file medical resources-1.12. Alternatively, you can send the E-mail message GET MEDICAL.RSCRS HELP-NET to the Internet address
LISTSERV@VM.Temple.EDU

The list is maintained by Lee Hancock, an Educational Technologist at the Archie R. Dykes Library of the University of Kansas Medical Center.

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 ID.
Faculty and staff members, if they prefer, may also request E-Mail Accounts by letter. Please use the 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 Accounting Office, Room 305, Warren Weaver Hall. For additional information on ACF computer accounts, please contact the ACF Accounting Office at 998-3035.
NYSERNNet® Conference '92
Network Access for All: Learn, Teach, Collaborate

NYSERNNet '92 is the first New York State conference focused on computer networking and worldwide information resources. It is taking place in New York City, and will be of great interest to many members of the NYU community and their associates in the tri-state area. The conference is sponsored by NYSERNNet (the New York State Education & Research Network), for New York professionals in colleges, library organizations, state-funded technology organizations, state agencies, private sector companies and corporations, and K-12 schools.

Conference sessions will take place at the New York Marriott Marquis (Broadway, at 46th Street) on Thursday, Sept. 24. A full day of NYSERNNet-run workshops on network use, and the NYSERTech board meeting will take place on Friday, Sept. 25, at NYU.

Conference Sessions Thursday, Sept. 24

TRACK 1: Tools for Collaboration

On-line Information Systems and Their Applications

The power of any on-line information system is defined by the broad range of useful information it easily makes available to the community it serves rather than the technology it is built upon. This session will focus on three uses of on-line information available today.

• PNN - Princeton News Network: Howard Strauss, Princeton University
• On-line Undergraduate Admissions Information: Jeff Bary, New York University
• Finding People on the NET: Jim Gerland, SUNY at Buffalo

Interface to Network Services

The myriad information and computational services available on the Internet can confuse and frustrate the average user. Commands and procedures to access even the simplest documentation can seem incomprehensible. The courses will highlight work being done to simplify the interface to network services.

• NYSERLink: Linda Carl, Information Services Coordinator, NYSERNNet
• Scientist Workbench: Dan Dwyer, Cornell National Supercomputer Facility
• Easy Access to Network Resources: Speaker to be announced

New Views of Information Applications

Networking is more than just technology or resource sharing. It is an enabler that uses innovation to leverage information resources and human expertise by putting new applications together. This session will examine applications that have been developed with a new view of networking in mind.

• Comparison of information retrieval systems: Steve Worona, Cornell University
• Print on Demand Applications Involving Campus Stores: Richard McDaniell, Cornell University
• “Ask Liberty-Hi” Behind the Scenes: Barbara Florini, User Services Coordinator, NYSERNNet

TRACK 2: Education

Instructional Uses of the Internet

Internet connectivity offers many exciting possibilities for improved and enhanced instruction. This session presents a variety of current applications across educational levels which take advantage of computer networking, including a 5th grade toxic waste project, a college class taught using the Internet as the classroom, supercomputing high school projects, and a high school project using an international mainframe simulation.

• K-12: John E. Newton, Main Street Elementary School Nancy Leib, Townsend Harris High School at Queens College
• Higher Education: Norman Coombs, Professor, History Department, Rochester Institute of Technology
• Higher Education/K-12 Collaborations: Susan Mehringer, Project Leader, Education and Training, Cornell Theory Center

Administrative Models

The addition of computer networking to a school’s infrastructure presents administrators with a variety of issues and concerns. There are currently a number of different models of connectivity to consider. This session will treat administrative issues of connectivity from a variety of administrative perspectives.

• School-Level: Donald Black, Principal, Selma Middle School, Selma, Indiana
• District-Level: Angie Johnson, Deputy Chancellor for Curriculum and Instruction, New York City Board of Education
• State-Wide: Connie Stout, Director, TENET, Texas Education Network and President of the Coalition for School Networking

Education Project Reports

• Bank Street College Survey: Margaret Honey, Associate Director, Center for Children and Technology, Bank Street College. The results of a nation-wide survey of some 600 K-12 educators investigating use of telecommunications systems for professional enhancement and student learning will be presented.
• TNT Network: Denis Martin, Associate, Michael Radlick, Director, Division of Planning, Evaluation and Technological Services New York State Education Department. An overview of the TNT network and the various options being implemented to support connectivity to/from NYSERNNet.
• College/K-12 Collaborations: Marion Frenich, Project Coordinator, Bridging the Gap, NYSERNNet NYSERNNet’s “Bridging the Gap” projects: K-12 Network Scholars, New Connections and Liberty High.
• Project WeatherWatch: Steve Richards, Director, District 11 Weather Study Program, NYC Board of Education, and Field Coordinator for Project WeatherWatch, City College of New York. Under an
NSF funded planning grant, weather data is transmitted from Unidata over the Internet to participating schools.

**TRACK 3: Libraries**

**Network Access: Training Issues for the Library**

Getting connected to the Internet raises many training issues for librarians: planning for incorporating this new service, who does the training, how do we train the trainers, and what and how do we teach new users.

Marilyn Moody, Head of Technical Services, Folson Library, Rensselaer Polytechnic Institute; Jean Currie, Director of Special Projects, South Central Research Institute; Ree DeDonato, Head of General and Humanities Reference, Bobst Library, New York University

**Networking — What is it? What do we want it to be?**

Speakers from public, academic and corporate libraries will address their current participation in a networking environment, and will present their views on the realistic utility of short and longer term network applications for libraries.

J. Michael Bruer, Associate Director for Preparation Services of the Research Libraries, The New York Public Library; Ellen Sleeter, Information Systems Librarian at Davis, Polk and Wardwell; Arnold Hirshorn, Director, University Libraries at Wright State University

**Document Access and Delivery**

The number and variety of information resources available through the Internet is growing rapidly. Background information on navigational tools and their implementation in campus wide information systems and document delivery initiatives such as CARL UnCover 2, RLG's ARIEL and CiteDel services, and OCLC's Fax on Finder service will be presented.

Pamela W. McLaughlin, On-Line Services Coordinator, Syracuse University; Ron Kalinoski, Director, Faculty Computing Services, Syracuse University

**TRACK 4: Network Technologies**

**Implementing Network Navigation Systems**

Networks and network connections are growing in ever increasing pace within and outside of our institutions. What both administrators of these connections and their users expect is network access, not just connections. This session will cover issues related to finding, installing and supporting such applications.

- **Other Net Navigators**: What else is there other than Gopher. Summary of activities and information about how to get more involved, and learn before your users do. Walter Bourne, Columbia University Academic Information Systems, Assistant Director, Academic Computing.
- **WAIS**: What is it, where is it now, where it's going. Willem Scholten, Columbia University, Law School, Director of Computer Systems and Development.

**Gathering and Managing Resources**

This track focuses on the need to look within as well as outside an organization to obtain and manage support for data networking.

- **Gathering/Managing Internal Resources**: Geraldine MacDonald, Associate Vice President for Computing Services, State University of New York at Binghamton
- **Gathering/Managing External Resources**: M. Stuart Lynn, Vice President, Information Technologies, Cornell University

**Technical Challenges in Moving to Gigabit Networks**

With the move from T1 to T3 well along, the frontier has shifted to planning and testing of networks with gigabit per second data rates. Many of the problems at lower speeds are exacerbated as raw network speed increases. Both challenges and opportunities will be discussed by David Farber, a Professor of Computer and Information Sciences at the University of Pennsylvania, where he directs the Distributed Systems Laboratory. He is a principal investigator on the Aurora Gigabit Testbed and a director of the Electronics Frontier Foundation.

**Thursday at a glance:**

Registration, Opening and Keynote Speakers, 8-10:15.
Parallel sessions, 10:30-noon, 1:45-5.
Reception, 5-6:30.

**Friday, Sept. 25, at NYU**

**NYSERNet Open Board Meeting, NYSERTech Meeting, and Tutorials in Network Use**

Board and NYSERTech meetings 9:30-noon. Parallel tutorial sessions 9:30-noon, 1:30-5. NYSERTech is NYSERNet's Technical Users Group.

**Fees**

For members of NYU community and other not-for-profit institutions: Conference sessions, Thurs., Sept. 24, $95 (includes refreshments, lunch, reception; $120 late fee after 9/1). Tutorials, Fri., Sept. 25, $95. Open Board Meeting and NYSERTech, Fri., Sept. 25, no charge.

**Registration forms and a full listing of events and tutorials are available from the ACF: call 998-3333.**

**Another Upcoming Event**

**EDUCOM '92: Charting Our Course**

October 28-31, Baltimore, Maryland. Hosted by Johns Hopkins. EDUCOM is the premier conference on information technology in higher education. This year, there will be new sessions on maximizing the value of your institution's investment in academic uses of information technology; how computing and communications are revolutionizing teaching and learning; using information technology to meet emerging institutional goals in the '90s; new trends in faculty support systems; utilizing the network to access the resources you need. Call 202-331-5375 for conference information.
Locating and Using Social Science Data Collections at NYU

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and Susan Shiroma
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Susan Shiroma is an Assistant Curator in Bobst Library’s Business and Social Science/Documents Center.

The authors wish to thank Prof. Dermot Gately (Economics Dept. and C.V. Starr Center for Applied Economics, FAS) and Victoria Rush (Academic Computing Services, Stern School of Business) for the information they provided.

The gathering of numeric data is a critical operation in the execution of much research, particularly in the social sciences and the humanities. Data may be obtained in several ways: through field studies, from laboratory investigations, from simulations, or from existing collections of data. This article focuses on the locating and use of already collected data.

There are many reasons for using data that were previously collected. For example, a researcher may not have access to an original source of data; collecting data may be too time-consuming and expensive; use of previously analyzed data may allow new insights to be added to previous research findings.

Numeric data are published or packaged in diverse formats: in the traditional printed media, in microform publications (microfiche and microfilm), and in several electronic formats. Electronic data are usually organized into “files” referred to as machine readable data files (or MRDF’s) because the data are in an electronic form that is legible only to computers. These files may be stored on magnetic tapes, on the diskpacks of a mainframe computer, on compact disks (CD-ROM’s), or on personal computer diskettes.

MRDF’s may also reside in remote databases that are accessed via network or dial-in connections. With the advent of local, national, and international networks (such as the Internet), whole files or extracts can be transferred electronically from one location or format to another; they can be copied from a “file-server” in Michigan or Maryland to a computer here at NYU, and they can be downloaded for use on one’s personal computer. The variety of formats and modes of access reflects the exciting changes occurring in the technologies for storing numeric data and distributing them to researchers for analysis on computers of their choice.

Thousands of MRDF’s are presently available at NYU, making it somewhat challenging to locate appropriate data for a specific research project. This article identifies the principal centers at NYU that collect, or have access to, previously gathered sets of social science and humanities data in these diverse formats, and which make these data files available to NYU faculty, students, and other researchers.

There are four major sources at NYU of specialized numeric datasets for researchers in the humanities and social sciences: the Academic Computing Facility’s Data Base Archive; the Economics Department and C.V. Starr Center for Applied Economics (FAS); the Stern School of Business’ Academic Computing Services; and the Bobst Library’s Business and Social Science/Documents Center. While this is not an exhaustive list of all data sources at NYU, together these collections do offer a wealth of data — historical, statistical, governmental, financial, economic, sociological, social, psychological and political — in a variety of media (see chart).

Many of the electronic data sources discussed in this article are offered on University mainframe and minicomputers; a growing number of datasets are published in CD-ROM format. All of these can be downloaded for use on personal computers. Numerical data resources available at the Bobst Library are most often available in printed and microfiche formats with a small number of them available as MRDF’s.

**Academic Computing Facility**

The ACF Database Archive houses machine readable numerical data files acquired at the request of any NYU faculty, students, and other researchers. The ACF Database Archive houses machine readable numerical data files acquired at the request of any NYU faculty, students, and other researchers.
graduate student, staff or faculty researcher. The main source of these files is the Inter¬
University Consortium for Political and So­
cial Research (ICPSR) to which the ACF
subscribes, although data sets from other
sources are also in the archive.

ICPSR is the largest collection of social
science datasets in the United States. Located
at the Institute of Social Research of the Uni­
versity of Michigan at Ann Arbor, it cur­
rently holds about 2,300 studies, containing
over 28,000 MRDF's. The content of the
ICPSR archive extends across economic,
sociological, historical, organizational, social,
psychological and political concerns. The
ICPSR also contains the holdings of the Na­
tional Archive of Criminal Justice Data, and
of the National Archive of Computerized
Data on Aging. Also available is a facility for
searching an online database containing the
texts of all survey questions and Congres­
sional roll call votes stored in ICPSR files.
Copies of ICPSR's Guide to Resources and
Services (with descriptions of all offered data
files) may be consulted in Room LC-7, Tisch
Hall, or at Bobst Library's Business and So­
cial Science/Documents Center (6th Floor).

At the present time the ACF Database
Archive holds some 700 studies consisting of
over 2,000 data files. These files are stored on
magnetic tapes associated with NYU's IBM
mainframe and the VAX/VMS cluster. They
are available for use on any of the large com­
puters where a researcher may choose to
work, and they may also be downloaded (if
they are of a reasonable size) to diskettes for
use on individual microcomputers.

The ACF Database Archive includes
several major data series which are updated
on a regular basis. Among them are U. S.
Census of Population and Housing, U. S
Census County and City Data Book,
NORC's General Social Survey, The Ameri­
can National Election Study, The Euro­
Barometer Series, Current Population
Surveys, High School and Beyond, Panel
Study of Income Dynamics (PSID), and the
Survey of Income and Program Participation
(SIPP).

A list and a description of
data files currently available on
either the IBM mainframe or the
VAX/VMS cluster may be pe­
rused in two ways: 1) by invoking
the INFO system from NYU­
NET (by typing connect info) or,
from within a VMS session (by
typing info, then choosing facili­
ties, and databases), or 2) by
typing helpme database from
within a WYLBUR session.

Codebooks for data sets held by
the ACF are housed in the Bobst
Library and can be checked out of
the library by NYU ID card hold­
ers. You must use BobCat, the
Library's online card catalog, to get library
call numbers for these codebooks. BobCat is
menu driven; remember to choose the
LIMIT function on the main menu in order
to limit your search to
MDF's (the BobCat

| Principal Sources of Numeric Social Science Data at NYU |
|-----------------|-----|-----|-----|
|                 | ACF | Economics | Stern | Bobst |
| Census          | e   | e       | p,m,e |
| Economic        | e   | e       | p,m,e |
| Educational     | e   | e       | p,m,e |
| Financial       |     | e       | p,m,e |
| Geographic      | e   | e       | p,m,e |
| Governmental    | e   | e       | p,m   |
| Health          | e   |         | p,m,e |
| Historical      | e   |         | p,m   |
| Political       | e   |         | p,m,e |
| Sociological    | e   |         | p,m   |
| War and Peace   |     |         | p,m   |

Letters indicate medium on which data is accessible (p=print, m=macroform,
e=electronic format - tape, networked database, cd-rom, departmental file servers,
and so on.) Numerical data resources available at Bobst Library are most often
available in printed and microfiche formats with a small number of them available
in electronic format. Additional NYU departments have limited collections of data
for use by their members.
Data Collections, continued from preceding page

keyword for data files and codebooks). BobCat is accessible from numerous terminals inside of Bobst Library, and from elsewhere via NYU-NET (type connect bobcat).

Access to the ACF Database Archive may be obtained by contacting Robert Yaffee at 998-3402 or Bert Holland at 998-3401. Email: yaffee@acfdcluster.nyu.edu or holland@acfdcluster.nyu.edu.

**Economics Department (FAS)**

Economic statistics and financial datasets are now available at the Department of Economics (FAS). The mode of access is through the department's PC network, which can be reached from PCs within the department, or from PCs appropriately connected to the campus network NYU-NET. (PCs in the ACF Microcomputer Labs can make the connection.) These paths lead to the department’s networked file-server on which are stored several major databases covering domestic and international governmental, industrial, trade, labor force and other data sets. Access to these databases is available to faculty and graduate students throughout the University.

The networked datasets currently include:

- **Citibase** (5000 monthly, quarterly, or annual time series, mostly for the U.S. with some international data, starting 1946; and 600 weekly macroeconomic series starting 1980)
- **World Bank Development Report** (economic and social data for 124 countries and 19 country groups, generally starting 1965)
- **World Bank Debt Tables** (157 variables for each of 109 countries, covering public and private debt, use of IMF credits, major economic aggregates and aggregate resource flows starting 1970)
- **World Bank World Tables** (economic and social data series taken from the WORLD TABLES 1991 book; 136 variables for 115 countries and 17 country groups, generally starting 1969)
- **OECD** (primarily macroeconomic data, from 30 to 100 time-series for each of the OECD countries, starting 1960)

In the process of being added are several other databases: the IMF International Financial Statistics, and UNIDO Industrial Statistics.

These collections of economic and financial data are supported by the Economics Department and the C. V. Starr Center for Applied Economics. Much of the U.S. government data have been supplied by Professor Clopper Almon's INFORUM project at the University of Maryland, and were transferred to NYU via the Internet. In order to gain access to the databases, you should type login fasecon\econdat1 (or econdat2...econdat9 if any of these accounts are in use) nmenu and then follow the menu to the database in which you are interested. Note that you will have access only to the databases, not to any other services shown in the menus. On-line documentation can be found in the directory x\database\doc. For documentation regarding use of these databases contact Cindy Heilberger (Room 303, 269 Mercer Street, 998-8936).

**Stern School of Business**

Three major financial data sets, Citicorp’s Citibase, Standard and Poors’ Compustat and the Center for Research in Securities Prices (CRSP), are offered by the Academic Computing Services at the Stern School of Business. These databases contain current and historical data from the Federal government and a host of business sources. Data are stored on magnetic tapes, and are accessible on Stern's SUN/UNIX computers. Any NYU researcher can apply for an account that will permit the selection and listing of data as well as the transfer of MRDF's to other computers.

Citibase is an economic database maintained by Citicorp Database Services. It contains more than 5,400 monthly, quarterly and annual economic time series, mainly released by the Federal Government and its
Data Collections, continued from preceding page

agencies. Sources include the Bureau of Economic Analysis, the Bureau of Labor Statistics, the Federal Reserve Board, etc. Among the categories of data are finance (e.g., foreign exchange rates, money supply, interest rates, etc.), U.S. international transactions, construction, housing starts and vacancies, producer and consumer price indexes, population, employment, and earnings. Many of these series have been cumulatively recorded since 1947 and the data are updated quarterly.

Compustat is a series of databases maintained and annually updated by Standard and Poor's Compustat Services, Inc. Two large Compustat databases are accessible on Stern's research computers. Industrial Compustat, one of the large databases, contains information derived from the 10K and 10Q reporting forms submitted to the Securities and Exchange Commission (SEC) by all companies registered on the New York Stock Exchange (NYSE), the American Exchange (AMEX), and NASDAQ. About 6,400 active and 3,950 inactive companies are represented. Bank Compustat, the other large database, contains financial, statistical, and market information on about 150 of the largest and most important U.S. banks. Annual data generally go back 20 years, and quarterly data cover the last 12.

Four CRSP databases are offered: stock files, NMS files, indices files, and bond files. Stock files contain such daily information as number of shares outstanding, prices, and dividends for each stock. NMS files contain supplementary data on NASDAQ issues. Indices files contain returns and index levels on various market segments and portfolios. Bonds files contain data on Federal bonds and notes. Where available, annual, quarterly, and monthly data are continuous from December 1925 to the present. The files are updated annually.

Requests for accounts should be submitted in writing by the researcher's department chair to Mabel Hsueh, Director, Stern Academic Computing Services, Tisch Hall, Room 521. The Stern computer center issues several documents describing these data sets and how to use them. For further information about accessing these data please contact Victoria Rush, Senior Programmer, 998-0169; e-mail: vrush@stern.nyu.edu.

Bobst Library

The Business and Social Science/Documents Center on the 6th floor of the Bobst Library houses one of New York City's largest collections of numerical data sources in print and microform formats. The bulk of the data is original report material from a selection of U.S. agencies, including Congress, the executive branch, independent agencies and special commissions. Holdings also include an extensive collection of reports and surveys from the United Nations, International Labour Office, World Bank, International Monetary Fund, World Health Organization, Organization for Economic Cooperation and Development, and other international and regional organizations. In recent years, the Business and Social Science/Documents Center has begun receiving U.S. government produced data files in diskette and CD-ROM formats. Special loans may be negotiated for faculty and students who wish to use some of these electronic resources for brief periods of time in their departments.

The Center also collects statistical compilations produced by private sector sources, as well as by offices of the U.S. government. Holdings range from the heavily used annual Statistical Abstract of the United States to specialized databooks on minorities and women in America and industry overviews such as the Motor Vehicle Manufacturers Association Yearbook, Beverage World Annual manual, and the Market Share Databook. The Center specializes in acquiring U.S. Census Bureau publications, from the 1790 to 1990 decennial population and housing censuses to the nondennial census surveys covering the economic censuses, foreign trade series, and manufacturing and housing data. The 1990 Census publications are available in print and microfiche.
Data Collections, continued from preceding page

formats, as well as on CD-ROM and through Cendata, the Bureau’s database. The Bureau’s Current Population Survey subject reports — covering areas such as population trends in education, poverty status, fertility, mobility, voting, marital status and living arrangement — are also actively maintained in print and microfiche copies.

Other federal agencies for which the Center has extensive holdings are the Bureau of Labor Statistics, the Bureau of Economic Analysis, and the Department of Health and Human Services, including the National Center for Health Statistics Center for Disease Control publications.

Data from other governments include a recently acquired microfilm collection of population census reports of many countries, from their first surveys to the current period. Another collection, The National Statistical Compendium, compiles other countries’ statistical yearbooks from the earliest published data from that country’s central statistical office to the present. The Center also maintains a modest collection of foreign country annual central banking reports.

Other heavily used numerical collections in the Business and Social Science/Documents Center include public opinion surveys such as the Gallup Report studies and the Harris Surveys. The American Public Opinion Index, a new addition to the department, compiles a selection of public opinion polls undertaken by a variety of sources, including The New York Times and the major television networks. The Roper Center Public Opinion Research database, Public Opinion Online (POLL), can be accessed by the Library’s staff.

Students and faculty who need business and financial numeric data will find a variety of useful materials in the Reference Center including statistical compendiums of stock and bond prices, business and financial ratios, market share data, and industrial and economics statistics. Students can access the electronic Dow Jones News Retrieval system as well as Disclosure’s SEC Annual Report collection in CD-ROM format.

Much of the department’s numerical data is not listed in the library’s online card catalog. In addition, the Center frequently adds new publications to its overall holdings. Consultation with the Center’s reference staff is recommended. For further information, please contact Susan Shiroma, Assistant Curator, Business and Social Science/Documents at 998-2602 or shiroma@accluster.nyu.edu.

Conclusion
Through departmental, computer service and library resources, NYU researchers can obtain a great variety and quantity of social science-related numerical data. Help is available for searching out and retrieving data from many sources and in many modalities. Hardware and software are available for processing and analyzing these statistics. Interested members of the academic community are invited to contact any of the sources mentioned above for further information.

Readings in GIS

Literature and research are rapidly expanding in the fields of geographic information systems, spatial analysis, and remote sensing. Below is a partial bibliography of basic readings in GIS, prepared by Prof. Robert Burnham (SEHNAP). Additional titles will appear in the next issue of this newsletter. (See facing page for more on GIS.)

NYU’s Spatial Analysis and GIS Group Continues to Grow

by Robert Burnham
burnham@acfcluster.nyu.edu

Robert Burnham is Professor of Educational Administration in SEHNAP and Director of its Center for Educational Technology and Economic Productivity.

The first meeting of the SA/GIS Group for 1992-93 is scheduled for September 29 from 3:00 to 5:00 pm in Room 539 of the East Building. All faculty, staff, and students interested in geographic information systems (GIS) and related topics such as spatial analysis (SA) are welcome.

At various times during 1991-92, about two dozen participants met to share experiences and ideas about GIS and spatial analysis. Individuals came from a wide range of backgrounds and disciplines — from epidemiology to engineering, and from art to zoology.

The ACF responded to the group’s interests and acquired a networked version of ATLAS*GIS now running on IBM PCs for faculty and students to use at the ACF’s public microcomputer sites. A copy of an advanced GIS package, GRASS, was also acquired for workstation applications. The group’s interests are broad and are expanding as new members join the discussions, identifying new problems that SA/GIS technology can help solve, and devising new applications of the fast-emerging technology.

Plans for 1992-93 were framed in several informal sharing sessions. The priorities for this academic year are (1) to formalize SA/GIS in some manner; (2) to collaborate with ACF to offer general training and instruction sessions in the use of GIS during the fall and spring semesters; (3) to identify needs and specify resources for a consultant-expert to aid faculty in becoming facile users of GIS applications; and (4) to seek support for an interdisciplinary seminar or colloquium on spatial analysis in the social sciences.

Any interested member of the NYU community is invited to attend the SA/GIS meeting. Contact Bob Burnham, Administration, Leadership and Technology Department, SEHNAP, 325 East Building or via E-mail.

Sample output from a project GRASS (Geographical Resources Analysis Support System). Dr. Yakov Smotritsky linked GRASS to EARL (Environmentally Acceptable Route Location), a program which he developed to identify acceptable corridors for oil and gas pipelines. EARL provided the test corridor shown in the image at left, using the Spearfish sample database from the EROS Data Center. GRASS was installed recently on a Silicon Graphics workstation in the ACF’s Visualization Center. See accompanying article for more on GRASS and other geographic information systems.
Online At Bobst

A Selective Tour Through Library Technology

by Rhonda Zangwill
zangwill@elmer1.bobst.nyu.edu

Rhonda Zangwill is the Public Affairs Manager for Bobst Library.

Any foray into library research will, sooner or later, lead you into the wired world of online information. For those of you who are new to Bobst, as well as those who, after a summer’s respite, may need some review, we offer the following short list of some electronic resources at the Library.

• **Research Assistant.** An interactive instruction program that uses HyperCard to teach necessary library skills. The program, available in the Bobst Microcomputer Center, helps the user at every stage, from selecting a topic, to focusing research, to organizing arguments.

• **CD-ROM products.** CD-ROMs are disks that can be “read” multiple times but cannot be changed. Among the many CD-ROM products available at Bobst are: ABI/Inform, Compact Disclosure, Dissertation Abstracts, ERIC, General BusinessFile, Import/Export Series, National Newspaper Index, MLA Bibliography, PsychLit, the STF and various U.S. Census Bureau titles such as Summary Tape File 1A.

• **Internet connections.** Hundreds of resources that are available over the Internet can be accessed from various PCs in Bobst’s reference centers, as well as from any computer with a connection to NYU-NET and the appropriate software. Among them are: online catalogs at other institutions; the Research Libraries Information Network (RLIN), the union database of many major research libraries’ holdings; JANET, a gateway to British catalogs; and various specialized databases dedicated to such diverse areas as oceanography and Shakespeare.

• **Computer graphics.** Augmenting its sophisticated desktop publishing software (PageMaker, Photoshop, Adobe Premier, Quick Time), the Bobst Microcomputer Center offers photographic quality printing on its Kodak XL7700 color printer. Black and white or color prints ($10) as well as transparencies ($12) are available.

This list is just a small sampling of the Library’s many online resources. For more information, consult Bobst Information Bulletin 6A, “Computerized Information Resources.” Also be sure to watch this page for articles on other electronic tools and services available at Bobst.
Spyglass Software Presented at NYU

by Ed Friedman
friedman@nyu.edu

Scientific Visualization Software from Spyglass Inc. was recently demonstrated at a technical seminar co-sponsored by the Academic Computing Facility and the FAS Departments of Physics and Applied Science. The software suite, made up of three modules — Transform, Dicer, and Format — was derived from scientific visualization tools developed at the National Center for Supercomputing Applications (NCSA) at the University of Illinois at Urbana-Champaign, with support from the National Science Foundation. NCSA is continuing its research and development of scientific software and its offerings are still available via anonymous ftp at ftp.ftp.ncsa.uiuc.edu. Spyglass Inc. will act as a commercial provider of software support and consultation for Transform, Dicer, and Format.

Transform enables a researcher to import, manipulate, analyze, and render two-dimensional information visually on a color display of a computer system. The module supports a large number of standard data formats, such as HDF and generic datasets (bytes, integer, real) many standard image file formats such as HDF, PICT, TIFF, FITS, and both structured and unstructured ASCII (plain text) data files. It permits the micro and macro restructuring of data sets from changing individual entries to rescaling entire arrays. Transform's Notebook feature allows the user to enter text notes, to enter and evaluate algebraic formulas, drawing from a large set of built-in trigonometric and mathematical functions. The information can be displayed using a variety of graphics and visualization techniques such as line graphs, contour, surface, vector plots, and polar images. Raster images can also be generated. Drawings and images can be saved in many formats for subsequent printing or recording on film or video.

Dicer is a module similar to Transform, except that it is designed to process three-dimensional information and display the information as solids and slices with or without transparency. Standard data forms such as 3D HDF, netCDF, and generic file formats are supported. A built-in utility can organize and construct three-dimensional data sets from two-dimensional files. The program also can import three-dimensional ASCII data files and a variety of well known TIFF, PICT, and HDF image files. Visualization techniques supported by Dicer include: rendering a cross-section at any location in any of all three planes of the data set; defining and viewing a data cube and then acquiring a cutout from the cube; creating a solid fill of the data and using a transparency tool to render a solid from within; and repositioning slices and cubes. Images and files can be saved in a variety of formats for subsequent processing.

Format is used to produce presentation layouts of canvases and animations generated with other Spyglass software tools. The images can be manipulated and annotated using a number of built-in tools.

The speaker at the presentation was Michael Tyrrell, Director of Marketing at Spyglass Inc. He continued on following page.
Spyglass, continued from preceding page

demonstrated the software on a Macintosh II to an audience of faculty, researchers, staff, and students. The response was positive, and a lively discussion ensued on how the software could be used to visualize information acquired from sources such as laboratory experiments, empirical investigations, and computer models and simulations.

Currently, the complete suite of programs is available only for the Macintosh family of computers. An earlier version of Transform is currently usable for Silicon Graphics IRIS workstations and will soon be available on systems from IBM, DEC, HP and others. For more information on prices, product status, and development, contact Spyglass Inc. at 217-355-6000.

The Spyglass software will soon be available on a Silicon Graphics IRIS workstation and a Macintosh II in the ACF’s Visualization Center. For more information, please contact Ed Friedman, at the ACF.

Cquel.BYU Available at the ACF

The Engineering Computer Graphics Laboratory at Brigham Young University has announced the availability of Cquel.BYU, a three-dimensional visualization package. The software has an up-to-date point and click graphical user interface utilizing X-Windows and can be used by scientists, engineers, designers, and animators. It is currently available for the following workstation vendors: SUN, DEC, Hewlett Packard, Silicon Graphics and IBM. The price is approximately $750 a copy, but multiple acquisitions would make the unit price less.

Scientific users can display scalar, vector or volumetric data. Contours, fringes, cross sections, iso-surfaces and particle tracings are some of the graphics that can be generated by Cquel.BYU.

In addition, the software is capable of model generation similar to that of its predecessor, MOVIE.BYU, and of various other facilities such as free-form deformation of the models, rendering using raytracing and other techniques, and animation using keyframe techniques.

For those interested in trying Cquel.BYU, it is available on a trial basis on the ACF’s Silicon Graphics 4D/80 graphics workstation, gws3, or contact Ed Friedman by phone (998-3051) or E-mail.

— Ed Friedman

Molecular Modeling of DNA

Below are illustrations from a molecular modeling study conducted by Tamar Schlick (Chemistry and Mathematics, FAS) and Wilma Olson (Chemistry, Rutgers University).

The images shown here are trefoil knot configurations of DNA revealed from a molecular dynamics simulation. In the simulation, DNA that has been twisted by special enzymes folds into a supercoiled form and then knits to form a trefoil. A knotting mechanism was proposed, including a critical pre-knotting state in which the DNA strands are cross-oriented. The knotted forms shown here offer two different geometries to accommodate enzyme wrapping.

Supercoiling and knotting of DNA are important for analyzing fundamental biological processes such as replication and recombination. Computer simulations such as these, made possible by new modeling tools, offer important information to complement the limited experimental data available for very large biomolecular systems like DNA.

The research and molecular graphics work were made possible through resources at the ACF, the Chemistry and Mathematics departments (FAS and CIMS), Photography (TSOA), the San Diego Supercomputer Center, and Rutgers University. The contributions of Ed Friedman, Jerry Greenberg, and Kate Fallon are gratefully acknowledged. The results were featured in an issue of Science scheduled to appear, as we go to press, in August 1992.

34 — September 1992 — Academic Computing and Networking at NYU
An Update on Resources

At the NSF Supercomputing Centers

by Frances Bauer
bauer@acfcluster.nyu.edu

Students, researchers and faculty can access the supercomputers at National Science Foundation (NSF) centers if they have projects requiring large memory or time. The ACF staff can provide information to expedite applications for these resources. For assistance and application forms call the ACF Accounts Office, Room 305, Warren Weaver Hall, 998-3035. The following is an update on the resources available at those centers.

- **Center for Theory and Simulation in Sciences and Engineering** (Cornell University, Ithaca, NY). Two IBM 3090-600J systems with 256 Kbytes of high speed cache, 512 Mbytes of real memory, 2 Gbytes of expanded memory with peak performance of 827 Mflops; soon to be replaced by an IBM ES/9000-900 with 9 Gbytes of shared memory giving peak performance of 2.66 Gflops. For parallel processing, a KSR1 (Kendall Square Research) with 32-processors; soon to be replaced by a 64-processor KSR. A Scalable Cluster of RISC Systems (SCRS), consisting of eight IBM 550s; this cluster is being enlarged. PVS (Power Visualization Server), a powerful graphics system with 32-processors and a 2-Gbyte memory.

- **National Center for Supercomputing Applications** (NCSA, Champaign, IL). A CRAY2 with 4 processors and 128 Mwords of memory. A Y-MP with four processors and a 64-Mword memory. A Convex C3840 with four processors, soon to be upgraded to a C3880 with eight processors and 2 Gbytes of physical memory. For parallel processing, a CM-2 with four processors, to be replaced by the CM-5 with eight or 16 processors. An IBM RISC cluster with scheduling done by DNQS.

- **San Diego Supercomputing Center** (SDSC San Diego, CA). A Y-MP with a 64-Mword memory. For parallel processing, an Intel IPSC/860 with 64 processors and an NCUBE2.

- **Pittsburgh Supercomputing Center** (PSC, Pittsburgh, PA). A CRAY Y-MP with a 32-Mword memory, soon to be replaced by a CRAY C-90 with a clock speed three times the Y-MP and memory four times the Y-MP, giving peak performance of 1 Gigaflop; PSC will schedule dedicated time for multi-processing across all 16 processors. For parallel processing, a CM-2 is also available scheduled to be updated to a CM-5.

- **National Center for Atmospheric and Oceanic Research** (NCAR, Boulder, CO). A CRAY Y-MP8/864 with eight processors and 64 Mwords of main memory and a 256-Mword SSD. A MSS (Mass Storage System) with a 120 Gbyte disk farm managed by an IBM 3090. An IBM RISC Cluster consisting of five IBM550 machines. A CM-2 for parallel processing scheduled to be updated to a CM-5. Also, 4x5 slide and videotape output capability.
News and Notes from the Purchasing Services Department

by Stephen Krause
krause@accluster.nyu.edu

Stephen Krause is Senior Buyer at NYU Purchasing Services Division. Comments and suggestions can be sent to Mr. Krause at NYU Purchasing Services Division, 269 Mercer St, 5th flr, by telephone (998-3048) or at the E-mail address above.

NYU’s Computer Fair IV will be hosted this year by the Book Centers, the Purchasing Services Division, and the Academic Computing Facility. The Fair will take place at the Loeb Student Center in the Eisner & Lubin Auditorium on October 5th from 10:00 to 8:00. The Fair should make for an informative and exciting event. Representatives of many computer and software vendors, as well as — for the first time — University service suppliers will be there to display and discuss their products and services. At the suggestion of visitors at last November’s well-received Computer Expo, this year’s Fair will include additional multimedia applications, desktop publishing and networking. Please send me your product suggestions for the Fair, and we will try to accommodate you.

New Agreements

Purchasing Services has arranged to purchase IBM parts from the IBM National Parts Center at the same prices that IBM charges its authorized remarketers and third party maintainers. For price information, new parts or exchanges, contact the IBM National Part Center at (303)924-4015, select option 3 and identify yourself as a dealer, and if requested, give NYU’s customer # 6722316.

NYU has formally signed a purchasing agreement with NeXT Computer, Inc. which allows a 25% discount from list price on all NeXT computers and products. NeXT has a family of powerful workstations which have gained considerable attention for their graphical user-interface and software development environment. NeXT stations are said to provide the power and built-in network capabilities of UNIX systems, without the complexity often associated with UNIX.

Every NeXT comes standard with a MegaPixel display. NeXT bundles InterfaceBuilder and a set of objects that give developers a head start in developing and maintaining complex applications. Display PostScript on the NeXT provides a single imaging model for information to a printer, fax, or other device. NeXT has fully integrated sound and image processing into its computer architecture. These features make NeXT machines particularly useful in higher education environments applications.

NeXT stations, complete with the NeXTSTEP environment and the Mach Operating System, are offered to NYU as low as $3747. Mr. Siamak Farah may be contacted at NeXT for further product information and current pricing at (201)812-4200.

Recycling Used NYU Computer Equipment

If your department has computer 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. We may be able to arrange an exchange with another NYU department. The Purchasing Department is only putting those who wish to barter in touch with one another. The value of each product is normally decided upon by the departments or persons interested in the disposition or acquisition of it.

Note that this program is for NYU Departments only and does not extend to personal acquisitions or dispositions.

For a listing of used hardware and software available under this program and further information, please contact Stephen Krause (see sidebar for address). As we go to press, the NYU Information Center has several Apple Macintosh SE’s and Pluses for sale; for more information on these, please contact Michael A. Walker at 998-4324.
A New ACF - Wolfram Agreement

Mathematica Now Available at Educational Discount to NYU Community

by Vincent Doogan
doogan@acfcluster.nyu.edu

Under a University Site-Wide Purchase Agreement with Wolfram Research, Inc., the company that developed Mathematica, the ACF can now distribute Mathematica to the New York University community at substantially discounted prices. The agreement thus enables wider access to Mathematica at NYU, for use in classrooms and computer labs.

Mathematica is a software system for mathematical and other applications. At NYU, it is currently being used in courses in mathematics, computer science, and the physical sciences. Wolfram Research reports that their product is used by researchers, engineers, and students from the high school to the graduate school level. Version 2.1 of Mathematica is a recent release that provides greater functionality through such features as enhanced graphics and a vocabulary of 843 built-in functions. There are versions for a variety of single-user and multi-user systems, including Macintosh, PC, and UNIX platforms.

University departments and individual members of the NYU community are eligible to obtain Mathematica at these educational discounts for use on University-owned or leased computers. You will be required to sign an agreement assenting to restrictions on the use of the software, as stipulated by our site license agreement with the vendor.

To obtain a copy of Mathematica, arrange an appointment with the staff of the ACF Faculty Microcomputer Laboratory, 998-3044. 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 Judith Clifford at the ACF at 998-3032.

The ACF provides talks and consulting services to assist you in the use of Mathematica. For further information, contact ACF consultant Howard Fink (998-3422). Currently, Mathematica is running on several ACF UNIX-based systems, and on microcomputers supported by file servers located at each of the ACF’s instructional microcomputer labs.

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**Important Dates for ACF Users**

**September**
- Current: Individual computer account renewal applications are being accepted for fiscal year 1992/93.
- Current: Instructors apply for Fall 1992 computer Class Accounts as early as possible.
- Sept. 5, 6, 7*: (Sat., Sun., Mon.) Labor Day weekend all sites closed
- Sept. 9: Students with Class Accounts register for computer use for fall semester, starting today.†
- Sept. 9: (Wed.) ACF’s summer hours end; regular fall hours resume.see inside back cover
- Sept. 9: (Wed.) Fall semester begins.
- Sept. 28: (Mon.) Rosh Hashanah regular hours**

**October**
- Oct. 7: (Wed.) Yom Kippur regular hours
- Oct. 12: (Mon.) Columbus Day regular hours

**November**
- Nov. 3: (Tues.) Election Day regular hours
- Nov. 11: (Wed.) Veterans’ Day regular hours
- Nov. 26*, 29: (Thurs., Sun.) Thanksgiving Day and Thanksgiving Sunday all sites closed
- Nov. 27*, 28: (Fri., Sat.) Thanksgiving Friday and Saturday holiday hours

**December**
- Dec. 7-Jan. 19: Instructors apply for Spring 1993 computer accounts for their classes.
- Dec. 7 - 22: Students who expect Incompletes in fall semester courses should apply for computer account extensions.
  (Instructor’s signature required.)
- Dec. 9 - 23: Students with fall semester Class Accounts should archive all files they wish to keep after Dec. 23.
- Dec. 16 - 23: (Wed. - Wed.) Final Examinations week regular hours
- Dec. 23: (Wed.) Student Class Accounts issued for the fall semester expire.
- Dec. 24-Jan. 1*: (Thurs. - Fri.) Christmas - New Year’s Recess see note below*††
- Dec. 24-Jan. 19: Winter Recess see note below††

**January**
- Jan. 4: (Mon.) ACF Offices reopen after Christmas - New Year’s Recess regular hours
- Jan. 18*: (Mon.) Dr. Martin Luther King, Jr. Day see note below††
- Jan. 20: (Wed.) Spring semester begins. Instructors, please apply for Spring 1993 Class Accounts, if you have not already done so regular hours

* University holiday
† Students may register for computer accounts at any ACF computer lab. Registration hours are 8:30 am - 11:30 pm, Monday through Friday, and 8:30 am - 5:30 pm, on Saturdays at the Education Building, Tisch Hall, and 14 Washington Place labs. Registration hours at the Third Avenue North lab: 10:30 am - 1:30 am, Monday through Friday; 10:30 am - 5:30 pm, Saturday and Sunday.
**See inside back cover for the ACF’s regular and holiday hours.
†† ACF offices in Warren Weaver Hall will be closed for the Christmas-New Year’s recess (Dec. 24 - Jan. 1) and for Martin Luther King, Jr. Day (Jan. 18). As we go to press, however, hours at the ACF’s user work areas during the University’s Winter Recess (Dec. 24 - Jan. 19) have not as yet been put into final form. Hours will be announced via our online news, notes, and bulletin board facilities, and will be posted at ACF sites.
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.

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For Macintosh Users
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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 StatView or Karel, call Howard Fink (998-3422); 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
  - October 15 and November 12

**Intermediate**
- Thursdays 3:00 pm
  - October 22 and November 19

**Advanced**
- (Norton Utilities and MS-DOS 5.0)
  - Thursdays 3:00 pm
    - October 29 and December 3

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

- **Wednesdays 6:00pm**
  - September 9 through November 25

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

- **Wednesdays 6:00pm**
  - September 30 October 21
  - November 11

**Uploading and Downloading**
Formerly Micros to Mainframes

A useful tutorial for electronic 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 E-mail or of the UNIX and VMS (ACF cluster) computers at NYU.

**For IBM/PC users**
- Thursdays, noon
  - October 6 through November 24

**For Macintosh users**
- Fridays, noon
  - October 1, 15
  - November 12

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**Eudora (Mac)**

Education Building, second floor

- **Fridays 12:00 pm**
  - October 23 November 20

A Macintosh-based E-mail interface.

**Pegasus (IBM PC)**

Education Building, second floor

- **Thursdays 12:00 pm**
  - October 8 November 5

A PC-based E-mail interface.
UNIX
(VAX and SUN)†
Third Ave. No. Res. Hall, basement

Mondays 6:00 pm
September 14 through November 30

Wednesdays 2:00 pm
September 9 through November 25

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

Tuesdays 6:00 pm
September 9 through November 25

WYLBR
(IBM Mainframe)†
Tisch Hall, Room LC-8

Participants should have Academic WYLBR accounts.

Mondays 5:30, 6:30 pm
September 21, 28
October 5, 12

Thursdays 5:30, 6:30 pm
September 17, 24
October 1, 8, 15

Introductory Lectures
Warren Weaver Hall, Room 102
Fridays 6:00 pm
September 18, 25
October 2, 9

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

†Participants in UNIX, VMS, Electronic Mail, WYLBR and VM/CMS tutorials should have an account on the appropriate type of ACF computer.

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 disk 31/2 diskette.)

Education Building, second floor.

During September (when classes are in session)
Mon. and Wed. 11:30am, 1:30 pm
Tues. and Thurs. 10:00 am
Sat. 11:00 am, 2:00 pm

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

Getting Started on Your New Computer (for New Mac and PC Owners)
This introductory workshop will help familiarize novice users with their computing equipment. It will focus on such basic operations as setting up your microcomputer; setting up a printer; and configuring your operating system with the fonts and tools you need.

This tutorial will be open to all members of the NYU community; it will be particularly helpful to recent or prospective purchasers of computing equipment. It will be taught by staff from the Academic Computing Facility and the NYU Book Centers' Computer Store. For further information, please contact Kevin Edwards at the computer store at 998-4659.

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.

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

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

Lotus* (IBM PC)
Given upon request, to groups, by appointment. Please call David Ackerman at 998-3505 for further information.

Minitab* (VMS)
Given upon request, to groups, 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, Howard Fink (998-3422) for Karel and StatView, or Frank LoPresti (998-3398) for all other systems.
For Instructors Using VMS at NYU

Warren Weaver Hall, Room 313, 2:30 pm
Tues., September 22

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 workspaces can also be set up, if desired, either for the entire class or for subgroups within the class.

In this talk, Stephen Tibor 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., September 29
Part II  Tues., October 6

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.

New: How to choose a computer, ATLAS*GIS, time-series analysis, and more.

How to Choose a Computer

Main Building, Room 509, 2:50 pm
Thurs., Oct. 1 and Nov. 19
Warren Weaver Hall, Room 313, 6:00 pm
Wed., Oct. 21

This workshop will cover the basic criteria to be considered when choosing a personal computer. The basic components of a microcomputer will be discussed, as well as the hardware required to perform certain types of tasks. We will also discuss how an assessment of your particular needs should affect your selection of computer tools.

The workshop will be taught by staff from the Academic Computing Facility and the Book Centers’ Computer Store. (Once you choose a computer, you may wish to attend “Getting Started on Your New Computer”— see our schedule of tutorials on pages 38 - 39.)

Document Preparation with LATEX

Education Building, second floor, 2:30 to 4:30 pm
Part I   Tues., October 20
Part II  Tues., October 27

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  

**Part I** Tues., November 17  

**Part II** Tues., November 24

In Part I, Ed Friedman will discuss the various scientific visualization software systems available on the ACF and other NYU computing systems. They include the NCAR-GKS software system, a popular two-dimensional graphics library featuring color fill, contouring, and maps of the earth; AVS from AVS Inc. (Advanced Visualization System); KHOROS, a system from the University of New Mexico; Minneview from the University of Minnesota; and scientific image processing systems from NYU, NIH, and NCSA. He will also discuss the options available for obtaining output from these systems.

In Part II, Ed Friedman will talk on the content, structure and future directions of the most popular two-dimensional graphics software package in the world. The NCAR library is based on two ISO standards, GKS and CGM, and is operational on systems from microcomputers to supercomputers. It contains utilities for a range of graphic applications, from drawing simple X-Y plots to creating complex color images that allow overlaying and masking. He will show examples of the capabilities of the package and how it has been used by researchers at NYU.

### Diagnosing and Repairing IBM PCs

Warren Weaver Hall, Room 313, 2:30 pm  

Wed., Nov. 4

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 Nov. 11 for a comparable presentation for Apple Macintosh owners.)

### OS/2

Warren Weaver Hall, Room 313, 2:30 pm  

Tues., Nov. 10

Gary Chapman will provide an overview and demonstration of this major new microcomputer operating system from IBM.
### WordPerfect 5.1 (for the IBM PC)

#### Creating Tables in WordPerfect 5.1
**October 14**

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.

#### WordPerfect 5.1 Macros
**November 11, December 16**

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.

#### Using Equation Mode in WordPerfect
**September 30, December 9**

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!)

#### Special Topics in WordPerfect 5.1
**October 21, November 18**

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.

#### Preparing Your Resume Using WordPerfect
**December 2**

To those wishing to exploit their knowledge of WP in writing a resume, this lecture will show various approaches to making your resume both attractive and informative.

#### Grammar and Style Analysis with RightWriter
**October 28**

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.
centers operated by NASA and DOE via the Internet. A kit is now available (in Room 305, Warren Weaver Hall) describing how to apply to some of the NSF centers.

**Novell Networks for IBM and Apple Microcomputers**
Warren Weaver Hall, Room 313, 2:30 pm Tues., December 1

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.

**Mathematica**
Education Building, second floor, 2:30 pm Tues., December 8

Mathematica is a general system for doing mathematical computation.

It can function as a calculator, programming language, or system for representing mathematical knowledge. Results of calculations can be numerical, symbolic, or graphical.

Topics to be covered include symbolic and numerical methods, data visualization, programming. Speaker: ACF consultant Howard Fink.

**Presentation Graphics**

**Macintosh Graphics for Data Presentation**
Main Building, Room 509, 2:50 pm Thurs., October 29

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., October 22

ACF staff members Eleanor Kolchin and Frank LoPresti will demonstrate several presentation graphics packages used on IBM PCs including Harvard Graphics, Lotus, and Microsoft PowerPoint for Windows.

**Displaying Geographic Data with ATLAS*GIS**
Main Building, Room 509, 10:00 am Fri., December 11

Frank LoPresti will present an introductory discussion of this geographic information system software that runs on IBM PCs and workstations at NYU. The talk will focus on using the mapping software to analyze or present geographic data, doing plots on maps, how boundary and data files are managed with Data EDIT, and other topics.

**Statistical Computing**

**Introduction to SPSS**
Main Building, Room 509, 10:00 am
Part I Fri., September 25
Part II Fri., October 2

In Part I, ACF consultant Bert Holland will discuss input of data to SPSS, global and conditional transformations of variables, case selection, creation of "system" files, and other manipulations of data. Part II will cover elementary statistical procedures for the analysis of data.

**Introduction to SAS**
Main Building, Room 509, 10:00 am Fri., October 9

ACF consultant Bert Holland will provide an introductory-level overview of SAS. The session will provide a brief introduction to the analyses offered by the software 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., November 5

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.
**Box-Jenkins Time Series Analysis Using SAS**

Main Building, Room 509, 10:30 am

ACF consultant Robert Yaffee will present a six-part series on the theory and programming of Box-Jenkins time series analyses using the statistical analysis system SAS.

Fri., October 23

In this session, the applications of time series will be addressed, including description, explanation, prediction and analysis of causality. The nature of the series, with aspects of drift, trend, stationarity, tests for stationarity, and transformations to stationarity will be discussed.

II. The ARIMA Components of A Time Series  
Fri., October 30

Integrated, autoregressive, and moving average processes will be analyzed. Seasonality will also be discussed, along with the identification and differencing of seasonal models. Finally, the general arima model with and without seasonal components, in conjunction with their SAS programming syntax in PROC ARIMA, will be examined.

III. Modeling Strategies  
Fri., November 6

This session will focus on tests of stationarity and outliers, the autocorrelation function, the partial autocorrelation function, and their use in the identification of the series by analysis of residuals. The Q statistic will be addressed. Characteristic ACF and PACF patterns of different AR and MA models will then be presented, along with their parameter estimation in SAS. Diagnosis of the estimated parameters of the model and metadiagnosis of residuals will also be addressed. Finally, forecasting theory and programming for different types of models will be discussed.

IV. Analysis of Mixed Models (Regular and Seasonal)  
Fri., November 13

Model estimation with unweighted least squares, conditional least squares, and maximum likelihood estimation will be examined. Problems and correctives for nonconvergence and model formulation will also be covered.

V. Impact Assessment and Transfer Functions  
Fri., November 20

Identification, prewhitening, impulse response functions, the crosscorrelation function, and transfer functions will be the subjects of this presentation. Emphasis will be on formulation of the transfer function and the corresponding responses developed in the modeling interventions. Diagnostic analysis and multiple input transfer functions will also be addressed.

VI. Causal Modeling  
Friday, December 4

After an introduction covering feedback and cointegration, causal modeling will be discussed. Differences between exogeneity and causality will be reviewed. Granger causality, zero order causality with and without lags, and first order causality will also be examined. The session will conclude with a brief discussion of other approaches to the analysis of time series, and of some of the limitations of the Box-Jenkins approach.

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**Macintosh and PC Statistical Software**

Main Building, Room 509, 2:50 pm  
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 PCs and Macintoshes) and DataDesk (Macintosh), will also be discussed.

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<td>Seminar: VMS Everything Else Tutorials: E-mail (PC), 12; VMS, 6</td>
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<td>Seminars: Network Services IV Tutorials: UNIX, 2; WordPerfect (PC), 6</td>
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<td>Seminar: Statistical Software Tutorials: UNIX, 2; WordPerfect (PC), 6</td>
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<td>Seminar: WP Special Topics Tutorials: UNIX, 2; WordPerfect (PC), 6</td>
<td>Seminar: Statistical Software Tutorials: UNIX, 2; WordPerfect (PC), 6</td>
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<td>Tutorials: UNIX, 2; WordPerfect (PC), 6</td>
<td>Thanksgiving - all sites closed</td>
<td>Thanksgiving Weekend Fri. and Sat. - holiday hours; Sun. - all sites closed Holiday hours</td>
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<td>Seminar: Novell Networks for IBM and Apple Microcomputers</td>
<td>Seminar: Preparing your Resume with WP Workshops: MS Word Intro; MS Work Inter Tutorial: MS-DOS Adv, 3</td>
<td>Workshops: WP Intro; WP Inter</td>
<td>Workshop: Atlantis GIS Workshops: WP Graphics Adv; WP Adv</td>
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<td>Seminar: Mathematics</td>
<td>Seminar: WP Equation Mode Students with Class Accounts archive all files they wish to keep after 12/23.</td>
<td>Workshops: MacDraw Pro; MS Excel</td>
<td>Seminar: Box-Jenkins (VI) Workshops: WP Intro; WP Inter</td>
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<td>Instructions apply for Spring 1993 Class Accounts (through Jan. 19). Students expecting Incompletes apply for account extensions (through Dec. 22).</td>
<td>Workshops: WP Intro; WP Inter</td>
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<td>First examinations begin</td>
<td>Christmas - New Year's Recess begins; all ACF offices closed through Jan. 1</td>
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<td>First examinations end Student Class Accounts issued for the Fall semester expire</td>
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48 — September 1992 — Academic Computing and Networking at NYU
### 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 998-3396
  - Tisch Hall 998-3434
  - Education Building 998-3423
  - Warren Weaver Hall 998-3037
  - Third Ave. North Res. Hall 998-3500

- Computer Operators:
  - 14 Washington Place 998-3457
  - Tisch Hall 998-3500
  - 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.)

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<th>If calling from</th>
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<td>Off Campus</td>
<td>995-3600</td>
<td>300 - 2400</td>
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<td>995-4335*</td>
<td>300 - 1200</td>
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<td>995-4343</td>
<td>4800, 9600, 12000 or 14400</td>
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*This number is recommended if you are using an old-style modem that has no error-correcting.

### Hours at ACF Sites

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* Holiday hours are tentative. Confirmed holiday schedules will be posted via our online news and bulletin board facilities. Note: The ACF offices in Warren Weaver Hall are closed on University holidays.
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NEW YORK UNIVERSITY
Academic Computing Facility
251 Mercer Street,
New York, NY 10012