
BITNET and the Internet: Scholarly networks for librarians

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Some tips on mastering the mysteries of an increasingly popular academic communications network.

I imagine a collection development librarian wrestling with the impact of CD-ROM subscriptions on the acquisitions budget. She logs on to her campus mainframe computer account and presents her concerns to an international forum of librarians. Within hours she begins to receive responses. Opinions and experiences arrive from England, Toronto, San Francisco—from both known and unknown colleagues who are part of an electronic community of librarians.

Imagine further being able to sit down at a PC in your office and search the online catalog at UC Berkeley, or Columbia, Princeton, Notre Dame, Michigan. . .all without any telephone charges. Notice how different OPACs present themselves to the user; notice the screen displays, the searching capabilities, the quantity and format of information retrieved. While you're on the network, try out the Info Colorado database on the Colorado Association of Research Libraries system, the PENpages database of agricultural information at Penn State, or read issues of the *Latin American Debt Chronicle* at the University of New Mexico.

The above scenarios are not futuristic—they are examples of everyday life on the Internet and BITNET. Many librarians are unaware that computer networks are no longer just for computer scientists or hackers. In fact, most college and

university librarians have access to exciting services now, and, with a few tips can easily become members of the network community.

Citing the analogy that “electronics are to our age what coal and iron were to the Industrial Revolution,” Senator Albert Gore of Tennessee introduced the National High-Performance Technology Act (S.1067) in 1989. The Gore Bill (see citation in the appended “networkography”) calls for the establishment of a National Research and Educational Network. This network will, among other things, serve to develop access to “an information infrastructure of data bases, services, and knowledge banks.” The NREN will provide extremely high-speed data transfer (100,000 typed pages per second), and will significantly leverage the investments made by colleges and universities in the area of campus networking.

While the Gore initiative seeks to build dramatically on the hardware infrastructure of the current national network, a number of online library catalogs, local databases, network newsletters, interest group forums (“mail reflectors”) on specific library topics, and innumerable text, graphics, image, and sound files, as well as executable programs are currently available. The two major international scholarly networks of interest to librarians are the Internet and BITNET.

The Internet

In the old days (1969) it was called ARPANET—a network established by the Department of Defense Advanced Research Projects Agency to allow sharing of geographically distant computing resources and scientific data. Both the technological capabilities and the concept have matured since then, with today's Internet comprising a network of networks that provides global access to computing and information resources. The Internet topology now consists of the NSFNET backbone, with connections to nearly 1,000 regional, government, and campus networks. The core NSFNET backbone is managed jointly by IBM, MCI Communications Corporation, and the MERIT computer network from an operations center on the University of Michigan campus.

Research libraries, with a long tradition of providing access to disparate forms of information, have begun to offer services over the Internet. In fact, roaming the Internet can be both an informative and entertaining experience. A sampling of what can be found on the Internet includes: dozens of library OPACs, local databases, regional newsletters, hypercard stacks, public domain educational software, and even the film schedule at the University of Maryland.

Accessing these Internet resources is accomplished from a computer that is connected to the network and has resident network protocol (TCP/IP) software. Generally, information about specific methods for access should be referred to the appropriate local computing center. Simply ask if your campus is connected to the Internet, and if so, how can you get an account on a computer which has Internet access. You may have to dial into this account using a modem with your terminal or PC. Once you have an account you will be primarily using two commands for Internet access: FTP and TELNET.

The FTP command allows remote login to a computer for the purpose of file transfer. You would use this command to obtain documents or software over the Internet. A typical session involving the FTP command might go like this:

```
FTP hostname.host.edu (connect to a host computer)
Enter username: ANONYMOUS
password: GUEST (or LOGIN or ANY)
CD info-lib (change directories)
DIR (list the files)
GET hgi.txt (transfer the file to your computer)
```

There are many computers on the Internet that allow this type of "anonymous FTP," offering files as a service to the network community. How do I know what host computer to FTP to, what direc-

tory to switch to, and what document to get, you ask? The documents listed in the networkography provide that information, which you can substitute in the above example.

The TELNET command allows login to a remote host for the purpose of using a service such as an online catalog. Just as with the FTP command, the TELNET command expects the address of the remote computer to be included as a parameter. For example, the command TELNET MELVYL.UCOP.EDU will connect to the University of California's online catalog. The document Internet-Accessible Library Catalogs and Databases cited in the networkography lists many addresses that can be accessed by the TELNET command.

One more tip on FTP and TELNET: there are two versions of an Internet address. An address such as MELVYL.UCOP.EDU is known as a "domain name," while its counterpart "IP address" is 31.1.0.11. Some machines require using the IP address—for example TELNET 31.1.0.11. If only the domain name is known and the IP address is required (or vice versa), there is a network server to provide addressing information. To access it issue the command: TELNET NIC.DDN.MIL or TELNET 26.0.0.73

Once logged in, use the WHOIS command. For example, the domain name to log onto the OPAC at UC Berkeley is GPOAC.BERKELEY.EDU. If your local system requires that you know the numerical form of the address, the command WHOIS GPOAC.BERKELEY.EDU will reveal the IP address, and conversely WHOIS 128.32.159.19 will reveal the domain name for UC Berkeley. I know this information seems overly arcane, but file it away for later—when you've become an ardent network traveler you'll be glad to have it!

BITNET

BITNET (the Because It's Time NETwork) is solely a research network for electronic mail and file transfers. Because its communications capability is so much less than the Internet, logon to remote computers is not possible over BITNET. In September 1989 BITNET, Inc. merged with CSNET, to form the Corporation for Research and Educational Networking (CREN).

Nearly 500 colleges and universities are connected to BITNET, many more than Internet. While BITNET does not offer the advantages of logging in to remote systems, there are resources available over BITNET that go far beyond simple electronic mail with colleagues. For example, there are electronic journals, interest group forums, and file servers. File servers automatically respond to mail requests, normally for a very specific purpose,

such as sending out help files.

The best way to obtain a rudimentary knowledge of what BITNET has to offer is to obtain some of the basic help documents listed in the networkography. *Bitnet Userhelp*, *Bitnet Servers*, and *Some Suggestions for the New BITNET User*, are three good files to read first.

Again, you will need to contact your local computing center and ask about BITNET access. Once you have an account on a computer connected to BITNET (probably the same account used for Internet access), ask for information on that computer's electronic mail facility. Since BITNET is simply an electronic mail network, you will be sending BITNET messages using the mail syntax of your local computer. Information on how to send the message will differ for local computers. So, when the networkography indicates "send this message: ," you need to know the local method of sending the message. Most campus computing centers can provide local BITNET documentation.

Perhaps the most practical and worthwhile use of BITNET is the interest group lists. There are hundreds of discussion groups active on the network, and the networkography notes six of specific interest to librarians. The BITNET address for contributions to a list always differs from the address to which a subscription request is sent (more arcane, but necessary, information). For example, contributions to MLA-L are sent to MLA-L@IUBVM, while the initial request to subscribe to MLA-L is sent to LISTSERV@IUBVM. All mailing lists have a corresponding LISTSERV address which handles the "business." It is considered very bad network etiquette to send requests for subscriptions to the mailing list, since your request will be received (usually with annoyance) by all participants of the list!

Try it!

The first step is to obtain information about your local options for computing accounts. Next, you will need to know the procedure and syntax your computer uses to send network mail, both for BITNET and Internet mail. If you think your institution is not connected, you may be wrong—most colleges and universities have access to BITNET, and many are also connected to the Internet.

Once you have an account, send for the help documents and use them to lead you to further resources. Note that each item in the networkography specifies whether it is BITNET or Internet. Joining an interest group forum—even if only to "eavesdrop"—can also be a great way to learn more about the networks. An interest group such as PACS-L can engender a sense of belonging to an international family of librarians. Give it a try—it's worth the effort!

Networkography

Information on where to find network resources is often difficult to obtain, since there is no standard bibliographical coverage. In the interest of sharing information gleaned from hours of searching network file servers, this "networkography" offers a sampling of the different types of resources available, including those most important for librarians. The documents and services listed will, in turn, provide references for further inquiry.

Bailey, Charles W. (LIB3@UHUPVM1), *Public Access Computer Systems Forum* (PACS-L). Ongoing, BITNET.

The PACS-L forum is an ongoing discussion among librarians, covering far-ranging issues related to library services in an electronic age. To subscribe send the following one-line message to LISTSERV@UHUPVM1: SUBSCRIBE PACS-L your_full_name.

Example: SUBSCRIBE PACS-L John Smith

Once you have subscribed, send contributions to PACS-L@UHUPVM1.

Condon, Christopher (CONDON@YALEVM), *Bitnet Servers*, *Bitnet Userhelp*, *Listserv Lists*. Ongoing, BITNET.

These are valuable files for orienting yourself to the BITNET world. You can retrieve the first two by sending the following messages (one per line) to either NETSERV@BITNIC, LISTSERV@MARIST, or LISTSERV@CMUCCVMA:

GET BITNET USERHELP

GET BITNET SERVERS

The file *Listserv Lists* contains all mailing lists (discussion groups) known to be active on the network. This file is obtained by sending the following message to LISTSERV@BITNIC:

SENDME LISTSERV LISTS

Condon, Christopher (CONDON@YALEVM), *NetMonth*. Monthly, BITNET.

NetMonth is the monthly network news magazine of BITNET. It is valuable for keeping up with the latest BITNET/CREN news, new mailing lists, network servers, etc. To subscribe, send the following one-line message to LISTSERV@MARIST:

SUBSCRIBE NETMONTH your_full_name

Dunn, John A. (DUNN@TUFTS), "Some Suggestions for the New BITNET User."

Another introductory document, with valuable advice and references to more network documents. The file is available by sending the following message to LISTSERV@BITNIC:

SENDME BITNET DUNN_J

FTP List, Ongoing, BITNET.

If you send the message SENDME BITNET FTPLIST to LISTSERV@MARIST you will receive a listing of many Internet computers which accept anonymous FTP login. It takes some effort to explore the plethora of sources listed, but many files of value can be downloaded—including executable IBM PC and Macintosh programs, photo-quality image files, hypercard stacks, and much more.

Gore, Senator Albert, "National High-Performance Computer Technology Act." (Gore Bill), Internet.

The text of S. 1067, introduced by Senator Gore, et al., outlining a strategy for a National Research and Education Network. The file can be obtained via anonymous FTP from NIS.NSF.NET. Switch to the RESOURCES directory and GET GOREBILL.TXT. For example, the session might proceed as follows:

```
FTP NIS.NSF.NET (connect to host)
Username: ANONYMOUS
Password: GUEST
CD RESOURCES (switch to RESOURCES
directory)
DIR (check to see what files are there)
GET GOREBILL.TXT (if it's still there!)
```

Krol, Ed (KROL@UXC.CSD.UIUC.EDU), "The Hitchhiker's Guide to the Internet." September 1989, Internet.

This is a classic Internet document—so much so that it has been granted status as an official Internet RFC (Request For Comment). The document is technically oriented, and can be retrieved via anonymous FTP (described above) from nis.nsf.net, in the RFC directory, file RFC1118.TXT-1.

MAIL MANNERS. April 1987, BITNET

This file is actually a large quote from "Toward an Ethics and Etiquette for Electronic Mail" written by Norman Z. Shapiro and Robert H. Anderson. It can be obtained by sending the message SENDME MAIL MANNERS to LISTSERV@BITNIC.

Merit Computer Network/NSFNET, *Link Letter*. Monthly, Internet.

Link Letter is the monthly news magazine of the Merit Computer Network and NSFNET Information Services. Provides somewhat technical news related to the NSFNET backbone of the Internet. The electronic version of the journal can be obtained by sending a request message to NSFNET-Linkletter-Request@merit.edu (an Internet address).

Murphy, Michael (MURPH@MAINE), *Network Audio Bits*. Monthly, BITNET.

An electronic journal devoted to compact disk and record reviews. To subscribe, send a message to MURPH@MAINE.

Music Library Association, MLA-L. Ongoing, BITNET.

The MLA-L list is a forum for topics relating to music librarianship and the activities of the Music Library Association. To subscribe send the message SUBSCRIBE MLA-L your_full_name to LISTSERV@IUBVM.

NOTIS-L (general NOTIS/DOBIS interests), NOTISPRO (NOTIS programs list), NOTMUS-L (NOTIS Music Library list). BITNET.

To subscribe to one of these NOTIS discussion lists, send the appropriate message:

```
SUBSCRIBE NOTIS-L your_name to
LISTSERV@TCSVM
SUBSCRIBE NOTISPRO your_name to
LISTSERV@IUCVM
SUBSCRIBE NOTMUS-L your_name to
LISTSERV@UBVM
```

St. George, Art (STGEORGE@UNMB - BITNET), (STGEORGE@BOOTES.UNM.EDU - Internet), "Internet-Accessible Library Catalogs and Databases." September 1989, BITNET or Internet.

If you get only one document on the Internet, get this one! This directory lists Internet addresses and logon procedures for many library OPACS, databases, and other information resources. The file is updated periodically. It is available on BITNET by sending the message GET INTERNET LIBRARY to LISTSERV@UNMVM. The listed resources, however, are accessed via the Internet.

Storer, Micheal (MSTORER@ZODIAC), Geac Users' Forum. Ongoing, BITNET.

An interest-group forum for libraries using the Geac integrated system. To subscribe, send a note to MSTORER@ZODIAC. At the time of this writing, the Geac list was just getting started, with the address being used for contributions being an Internet address:

```
GEAC-USERS@ELBERETH.RUTGERS-
.EDU
```

If the Geac list thrives, it may have the usual LISTSERV address for subscription requests and a BITNET address for ongoing contributions. Query MSTORER@ZODIAC for the latest information.

Tuttle, Marcia (editor, TUTTLE@UNC.BITNET), *Newsletter on Serials Pricing Issues*. Monthly, BITNET.

This newsletter (ISSN 1046-3410) is published by ALA's Association of Library Collections and Technical Services, Vendor-Library Relations Committee, Serials Pricing Issues Subcommittee. To subscribe via BITNET send the following one-line message to `LISTSERV@UNCVX1`:

`SUBSCRIBE PRICES-L your_full_name`

Updegrave, Daniel (`UPDEGROV@EDU-COM`), Muffo, John A. (`IRMUFFO@VTVM1`),

Dunn, John A. Jr. (`DUNN@TUFTS`), "Electronic Mail and Networks: New Tools for Institutional Research and Planning." July 1989, BITNET.

This is an excellent introduction to e-mail and national networks, written for the beginner. The document includes tips on e-mail etiquette and specific suggestions for getting started. To obtain the file send the message:

`GET EMAILNET UPDEGR_D to
LISTSERV@BITNIC` ■ ■



BIOSIS Previews and psychological research

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The literature in psychology is replete with references to the advantages of multi-database searching in conjunction with PsycINFO.¹ Whereas PsycINFO and PsycALERT are the databases of choice for psychology researchers, many other files have been shown to be highly relevant for information retrieval in the behavioral sci-

ences—including BIOSIS Previews.² Although the potential usefulness of BIOSIS has been documented for the behavioral researcher, no studies have surveyed the extent of its present use in

¹Chris Piotrowski and Bob Perdue, "Multi-Database Searching in Forensic Psychology," *Forensic Reports* 1 (1988): 55-63; Linda K. Lewis, "Bibliographic Computerized Searching in Psychology," *Teaching of Psychology* 13 (February 1986): 38-40; and Alice A. Brand, "Searching Multiple Indexes and Data Bases in the Behavioral Sciences: Which and How Many?" *Behavioral and Social Sciences Librarian* 1 (1979): 105-12.

²Bob Perdue, "BIOSIS Previews: Implications for Research on Behavioral Medicine," *Medical Reference Services Quarterly* 7 (1988): 57-62; Nancy G. Bruce and Ann L. Farren, "Searching BIOSIS Previews in the Health Care Setting," *Medical Reference Services Quarterly* 6 (1987): 17-37; Bob Perdue, "Personality Assessment Online Literature Retrieval Strategies," *Forensic Reports* 1 (1988): 259-66; Larry S. Perry and Richard H. Dana, "Macroconceptual Analysis of Psychological Literature: Online Computer Search Systems," *Professional Psychology: Research and Practice* 16 (1985): 354-62.