

# Internet Communications—

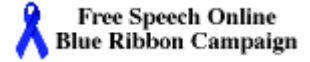
## *Surfing the World Wide Web<sup>1</sup>*

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# Getting Started



*The web is a wondrous thing. It can even help find you a fling. But user beware, there's a lot out there, and some might bite you or sting.*

—13<sup>th</sup> Century Computer Sage<sup>2</sup>

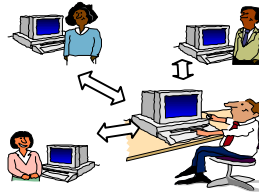
## Organizational Stuff

Computers can work in isolation or connected to other computers. When computers are connected to other computers using a closed, restricted system that permits only certain computers to be connected, this is termed a *local area network*. When different computer networks are interconnected using a common system that permits communication among many unrelated computers, this is termed an *internet*.

My computer



My computer connected to other computers (e.g., local area network; LAN)



My computer connected to the world (internet)

The world wide web is the standard internet system used to connect computers throughout the world.



## Main Internet Components

There are four main components to the internet.<sup>3</sup> These components support various functions which connect individual computers to “the outside world.”

**the web:** the network protocol and hardware “backbone” that interconnects various computers around the world (world wide web; www)

**e-mail:** electronic mail system used to send a message to a specific computer listed by its e-mail address (e.g., bozarth@acsu.buffalo.edu)

<sup>2</sup> But don't believe everything you read in printed form or on the internet.

<sup>3</sup> Actually, there's only 3 ½ components, but we'll call them four for simplicity.

**discussion groups:** electronic mail system used to send messages to a ListServ® computer<sup>4</sup> that redistributes the messages to users subscribed to the Discussion List (e.g., ARUrap-list@listserv.buffalo.edu)

**chat rooms:** interactive discussion groups usually posting messages in real-time to users logged into the chat room; technically, this is a web site that allows users to post messages to a type of bulletin board, and therefore, does not really constitute a separate internet component; chat rooms are sometimes used to make new ‘friends’ but can be a simple online discussion group; they have also given rise to computer stalking and provoked murder (no examples from me; find your own ‘friends’)

## Surfing the Web: The First Wave

Like any travel you must know your destination to arrive where you want to go (Serendipitous travel is fun, but if you have a particular purpose in mind planned travel is usually more productive.). This means you must know the location of your destination. Technically, this is the information’s address or URL (uniform resource locator). The URL can refer to a web site or to a specific page at a web site. (Actually, a URL directing you to a “web site” in fact directs you to a specific page at that web site—the home page or index.htm. The home page is usually like a web site directory or table-of-contents, and it is usually the starting point for navigating a web site.)

### *URL Structure*

URLs have a common format: usually a beginning prefix, followed by the computer site’s name (i.e., domain name), followed by a suffix indicating the type of site, and sometimes concluding with the name of a subdirectory and/or a specific web page.

“www” is the abbreviation for “world wide web.” It is the prefix for most, but not all, internet addresses; e.g., **www.wings.buffalo.edu/aru**. The next portion of the URL is the domain name; e.g., **www.wings.buffalo.edu/aru**. This usually ends with a suffix indicating the type of site; e.g., **www.wings.buffalo.edu/aru**. Some common suffixes are:

.com	commercial site
.edu	educational site
.gov	government site
.mil	military
.org	organizational site

Sometimes, a slash is used to indicate a specific subdirectory within the main site; e.g., **www.wings.buffalo.edu/aru** (This is the subdirectory containing web pages for the Addiction Research Unit. If no specific page is specified, accessing the subdirectory will read the page entitled index.htm or home.htm by default.). And another slash can direct you to a specific page at the web site; e.g., **www.wings.buffalo.edu/aru/biological.htm** (This is a web page at the Addiction Research Unit web site [on the UBwings computer] that describes some of the biological mechanisms underlying drug addiction.).

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<sup>4</sup> ListServ® is propriety software that manages messages to be distributed to a discussion list. There are other systems for managing discussion lists, but this one is the most popular.

Internet addresses are sometimes shown as “http://www.wings.buffalo.edu/aru.” The “http” stands for “**h**ypertext **t**ransfer **p**rotocol; this is the standard method of communicating among computers on the internet and the world wide web. When entering a URL, most browsers (e.g., Netscape) assume the “http://” and this should **not** be typed in; i.e., at the location prompt, type only the URL (e.g., www.wings.buffalo.edu/aru).

When searching for a web site, educated guesses often take you to your destination. For example, to locate ABC News you would use “www.abcnews.com” (this is a commercial site); if you want to visit the web site for the ABC television program “Politically Incorrect,” try “www.abc.com/pi” (this might take you to the appropriate subdirectory as explained above); if you want to visit the web site for the ABC television program “The View,” try www.abc.com/theview” (hum, I think there’s a pattern here); for AAUW’s national office, enter aauw.org” (this is an organization); and for Bill Clinton, try “www.whitehouse.gov” (this is a government site). Some URLs are simple variations on common names (e.g., “www.AandE.com” not “A&E.com”). URLs are usually case sensitive; you can sometimes enter upper or lower case letters or any mixture of the two cases. Other times you must list the address as specified (usually in lower case letters). If you’re not lucky on your first or second try, use a search engine such as Yahoo to locate the URL (more on search engines later). Sometimes the URLs are very cryptic or are obtuse variations on the company’s/organization’s name. And remember, just because you reached an organization with a correct sounding URL, don’t assume you’ve reached the correct web site; look for indications that you’re where you think you are before you transmit sensitive information or trust important information from the site. Trade marks are hotly contested and most acronyms are not protected by Trade Mark and Copyright laws. Furthermore, some domain names (the central part of the URL) have been purchased by entrepreneurs for resale to the named company. But people want you to visit their web sites and whenever possible, they strive to make their URLs simple and descriptive (e.g., www.honda.com).

## **Things You Can Do After You’re “There”**

Obviously, reading the material found at various web sites is one of the primary activities of internet surfing. But there are other things you will want to do.

### ***Following Hyperlinks***

Material underlined and highlighted indicate hyperlinks on the web site. Clicking on a hyperlink takes you to another location. That may be a different place on the same web page, a different page at the same web site, or a different web site. Hyperlinks are used to navigate to related material and they provide one of the most useful features of internet-based material (Hyperlinks are also used with many help menus for computer programs.).

### ***Mouse Tricks (things your mouse can teach you)***

Explore the right mouse button; it can be very useful. Unlike the left mouse button which selects a highlighted item, the right mouse button usually opens a pop-up menu

with options relevant to your current task (This is true for many Windows 95 programs.). With Netscape Communicator, it can be used to add a bookmark, send a web page, or copy a graphics file when the cursor is positioned on a web page.

### ***Download Subdirectory***

Create a “download” subdirectory on your hard drive and use it. Be careful downloading executable files from any site other than well-known commercial or government sites. Viruses are real but fairly rare (see below). Use your download subdirectory to temporarily keep your downloaded files together. This makes it much easier when you do your housekeeping and delete old, unneeded files. Move the files you want to keep to other subdirectories.

### ***Bookmarks***

Bookmarks are used to store URLs in your web browser’s bookmark directory. This is the easiest way to keep track of interesting sites and to share these sites with others. Organize your bookmarks; web browsers have an editing feature that permits re-ordering your bookmarks and placing them in various subdirectories (Use the bookmark drop-down menu and edit feature.). With Netscape Navigator 3.x, move the cursor over the web page, then right click your mouse and select “add bookmark.” With Netscape Communicator 4.x, right click the mouse and select “add bookmark” or use the drop down menu to file your bookmark into a particular subdirectory.

### ***Sending a Web Page***

Web pages can be easily sent to e-mail addresses if the recipient’s e-mail system supports HTML pages. With Netscape Communicator 4.x, move the cursor over the web page, then right click the mouse and select “send web page.” (If you’re using Netscape Navigator 3.x, this is a good reason to upgrade.) Your e-mail program will automatically open asking where you would like to send the information. (You can also enter text information to be included in your e-mail message.) After sending the web page link, the e-mail program automatically closes and you’re back where you began in the web page.

### ***Downloading Graphics***

Graphic images can be saved to your hard drive. With Netscape Communicator 4.x, move the cursor over the image, then right click the mouse and select “save image.” When prompted for a subdirectory to download the image, use your “download” subdirectory so that you can easily locate this file at a later time. (If you’re using Netscape Navigator 3.x, you now have two good reasons to upgrade.)

### ***Using Plug-Ins***

Plug-ins are accessory programs that expand the capabilities of your internet browser. Most popular plug-ins are free and can be downloaded from commercial sites. Browsers usually recognized when a required plug-in is missing, and you may be directed to a

source where you can obtain the software. Plug-ins need only to be installed once, and after installation they are automatically loaded whenever you visit a web site requiring that plug-in.

**Adobe Acrobat Reader** is used to read certain types of files (i.e., PDF files) and these files are found at many web sites. Adobe Acrobat permits complex formatting of documents prepared by various other programs (e.g., word processors). Without conversion to PDF files, this material would have to be rewritten using the native internet program language (i.e., hypertext markup language; html).

**RealAudio Player** is used to decode audio information contained at various web sites. There are also commercial versions of this software, but the basic audio player is free. Everything from recorded speeches to live radio and television broadcasts can be encoded into a format read by RealAudio.

**Apple Quick Time** is used to decode information that can produce moving video images on your computer. It is used with both CD-ROMs and web sites, and it's free.

**RealVideo Player** is another encoding method that provides both video and audio. It is becoming increasingly popular and is used for real-time broadcasts at some web sites (e.g., CNN.com, MSNBC.com)

**Other Plug-Ins** are available that perform specialized tasks (e.g., 3-D imaging) or simply offer other encoding methods for sound and video. The most commonly used ones are distributed free of charge; some of the plug-ins sold for special purposes are very good but only used for relatively few web sites.

## Some Basic Principles

1. Everything's on the Net (almost)
  - 1a. but finding it isn't always easy
  - 1b. and sometimes it's easier to use the telephone
2. Use a good, graphic-based browser with an integrated e-mail function (i.e., Netscape Navigator/Communicator, Microsoft Internet Explorer)
  - 2a. use the latest versions (or have a good reason to use outdated software)
  - 2b. install the popular plug-ins
3. Computers are dumb but they can do a lot of dumb things really fast
  - 3a. GIGO (garbage in garbage out): if you make a mistake on entering important information, it won't work (the task of setting up good error handling routines is left to the human programmer; some are very good and some are not)
  - 3b. How many people in the United States have my exact name? (Quickly check all of the telephone listings across the U.S.)

4. Don't pay without checking for free services: much of what you want is free, although someone will certainly be willing to sell it to you.
5. Bookmark your favorite sites. They may be hard to find later.

## Security Issues

The internet relays information sent from one computer to another. It uses various 'relay' computers to transmit the material, and the information can be intercepted at any number of points along its route. The very nature of this type of communication is insecure. Unlike conventional mail (i.e., snail mail), intercepted and read information can continue to its intended destination with neither the sender nor the recipient being aware that the information was intercepted. Another security issue with internet use involves information sent back to your computer from other sites. This information is usually harmless but has the potential to be disastrous. (For more information on security and privacy issues, visit the Center for Democracy and Technology at [www.cdt.org](http://www.cdt.org).)

### Credit Card Numbers and Other Confidential Information

Information transmitted on the internet must pass through numerous 'routing' computers before it reaches its final destination. This provides numerous points where the information can be intercepted and read. Special data encoding procedures **can be** used to render any intercepted information useless. But data encoding is not always used on sites requesting confidential information, and there are various levels of safety.

Netscape Navigator/Communicator presents a warning screen when entering or leaving an encoded web site. The small key or a small lock located in the lower left side of the browser window becomes locked (i.e., whole); with Netscape Navigator the number of teeth (one or two) on the key indicates the level of security. Yes, there are different levels of security and a "secure" site is not totally secure. In computer applications (like most of life), security is a relative thing. Different security techniques produce different levels of protection, but none are totally secure.

**Bottom line:** A lot of commerce is conducted over the net with relatively few problems. Use the same common sense you would use when giving the same information over the telephone and never send this information to an unsecured server.

### e-mail Confidentiality

Not only is e-mail easily intercepted by computer hackers (including some probably working for the government), but there are three other features that make e-mail even more risky than conventional mail. First, the mail can be intercepted and read without interrupting the flow of information to the intended reader; you won't even know it's been intercepted. Second, many businesses consider e-mail accounts managed by company computer company property; the system operator (SYSOP) can easily peer into your private e-mail. (This is also true of private e-mail services, but they presumably

have less motivation to spy on their service users.). And third, your message can be easily redistributed to any e-mail recipient in the world; it doesn't even require a stamp!

Special encoding programs are available for encrypting e-mail messages. One of the best is Pretty Good Privacy (PGP). In fact, this encrypting system is so good that its export from the U.S. is banned, the government tried to block its public distribution, and the U.S. intelligence community has lobbied to have PGP-encoded files contain a special decoding feature so that "authorized" government agencies could read the encrypted messages. PGP-encrypted e-mail is the most secure method of communication available; obviously better than telephone communications. It's not surprising that the government has taken such a strong interest in its development and distribution. If e-mail confidentiality is critically important, use PGP or another encrypting method.

**Bottom line:** Confidential information should only be sent through e-mail when special precautions have been taken. Secure servers or encrypted messages provide a reasonable degree of security. Otherwise, assume everyone in the world can potentially read your message.

## Surfer Anonymity

When you visit a web site, information is automatically sent regarding your computer link. This usually includes your browser type, the domain you are connected to, and may include specific information about your location (network port, user-ID). Do not assume that you are anonymously surfing; assume that the host computer knows who (or at least roughly where) you are. If security is important, use one of the anonymous web-browser gateways. Better yet, don't worry about it because you're not abusing the Net.

**Bottom line:** Assume the web sites you're visiting know who you are. Don't worry about anonymity unless you're a terrorist.

## Viruses

"Viruses" are malicious programs that alter (usually destroy) information on your computer. They can be encoded in various types of program files. The files most susceptible to virus infection are "bat, com," and "exe" files. Always be careful when downloading these types of files. You cannot receive a virus by simply reading a file (e.g., html page); you must run the program. (Someone will eventually develop a virus that infects the cached information normally written to your hard drive when you surf the Net; when you return to that site, the cached information is read and the virus could be activated. But so far, none have been developed; sounds challenging.) Generally, it is safe to download graphic and document files, but a new type of virus can be encoded in Microsoft Word files (i.e., macro virus). Virus checking software is available from a number of vendors. Commercial sites routinely check their software for viruses, although occasionally a virus has been planted on a commercial site.

**Bottom line:** Viruses are a potential hazard only when you download files—not when you simply cruise the Net.

## Why You May Not Want a “Cookie”

“Cookies” are packets of information you allow a remote computer to send to your computer; this information is written on your hard drive. Cookies are used to record information about pages you have visited, advertisements you have seen, and even usernames and passwords necessary to log onto the host computer. Cookies accepted from trustworthy sites can make cruising smoother. Cookies accepted from malicious sites could trash your entire system. Netscape can be configured to notify you when the remote computer wishes to send you a cookie; you can accept or decline on a cookie-by-cookie basis.

**Bottom line:** Don’t accept “cookies” from a stranger.

## Getting Online

### Internet Service Providers (ISPs)

Look for the best deal, local or national. Try the trial subscriptions. Surveys show that around 60% of the users have local ISPs, but national companies give you more mobility.

### Computer System Requirements

Most novices think they have to purchase the latest computer equipment to use internet services. In fact, computer equipment several generations old works very well for cruising the Net. The cost for this equipment is about ¼ the cost of the ‘state-of-the-art computer systems and around ½ the cost of computer systems usually sold to home users. The “bottle neck” in internet services is usually not the computer but the connection to the internet. The modem and the ISP are the primary limiting factors in speed of communication. Given the widespread availability of high speed modems, technology limitations at the ISP are the real limiting factor.

There are several key components to a computer system. These components determine the overall system performance.

#### *Microprocessor (Central Processing Unit; CPU)*

The central processing unit (CPU) determines the speed at which all internal computing operations are conducted. Faster is generally better, but the difference is only important for certain operations. Some computers still available use the **80386** or **80486** CPUs developed over a decade ago. These CPUs are adequate for basic internet surfing but do not run most of the newer software.<sup>5</sup> Except for special applications or bare minimum entry into internet surfing, these machines are best avoided.

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<sup>5</sup> These computers require 16-bit software and run under the old Windows 3.x operating system. Technically, 80486 CPUs can run under Windows 95, but they operate so slowly that few people use them with this operating system.

Most computers sold today use various **Pentium processors**. These CPUs range in speed from 133 to 400 MHz (the original Pentium processors operated at 60 MHz). The Pentium II series offers several improvements over the original Pentium processors. All Pentium processors will run 32-bit as well as most 16-bit software, although some older 16-bit programs may not run properly. Pentium-based computer systems are shipped with the Windows 95 or Windows 98 operating systems. The Pentium Pro and Pentium II processor offer some advantages over earlier Pentiums, but the differences may not be noticeable for internet surfers. (Some computer games best reveal the enhancements.)

*The minimum practical CPU for general use is probably the Pentium 133.* Computer systems based on Pentium 133 to Pentium 200 processors are a couple of generations behind the newest computers. This makes their prices particularly attractive, and these computers will run all of the new software for Windows 95 and Windows 98.

### ***Computer Memory (Random Access Memory; RAM)***

Computer memory is measured in megabytes (MB) and is another important factor for determining the ability of a computer system to handle complex applications and can affect how fast the computer communicates on the internet. The main computer memory uses a type of information storage termed **random access memory (RAM)**.<sup>6</sup> This memory is used to store information needed while the computer is running (The contents of RAM are lost when the computer is turned off.).

Computer memory prices have dropped dramatically during the past few years, so most computer are equipped with what was considered only a few years ago a lot of memory. Minimum systems start at 16 MB and performance improvements may be seen with up to 64 MB of memory. The main improvement seen with increasing RAM above 32 MB is the ability to run multiple programs concurrently. This is important for professional applications but does not affect appreciably internet surfing. RAM is cheap, but adding RAM above 32 MB has little impact for most users. *The practical minimum computer memory is probably 16 to 32 MB.*

### ***Hard Disk Drive***

The hard disk drive is the storage device used to store files, including programs, text files, and graphics. Like computer memory the cost of hard disk storage space has decreased dramatically over the past few years. And because the newer computer operating systems (e.g., Windows 95) and programs (e.g., Microsoft Word 95, Netscape Navigator) require a lot of storage space, a 'large' hard drive is necessary. Graphic images require the most storage space, and users that wish to save and manipulate a lot of graphic files should invest in extra large hard drives.

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<sup>6</sup> Other types of computer memory include read only memory (ROM), L2 cache memory, and video memory. They contain information necessary for your CPU to communicate with the operating system, the system RAM, and the video card, respectively. ROM size is not a user option, but an L2 cache of 512 MB and a video memory from 2 to 4 MB can improve system performance.

Hard disk storage space was once measured in megabytes (MB), but most new computers have much larger storage capacity measured in gigabytes (GB). It is possible to run Windows 95 and surf the web with as little as 512 MB, but *the practical minimum hard disk drive is round 1 GB*. Hard disk drives with 2 GB are often worth the slight additional cost for most users.

### ***Modem***

The modem is used to connect the computer system to the internet service provider (ISP). The early modems had a transmission speed of 300 to 1200 bits-per-second (bps). At this speed, one could literally watch the text being slowly written to the computer screen one letter at a time. Because the modem determines the maximum speed that information can be exchanged between a computer and the internet, this is usually the rate-limiting device for internet communications. Telephone lines seriously limit transmission speeds, and this technology is far behind computer system technology—it will slow even the fastest computer down to an annoying pace. A modem speed of 14.4-kbps is the minimum acceptable speed and then only for special hand held computers (H/PCs). *The practical minimum modem speed is 28.8-kbps with the newer 56-kbps modems preferred*. Special ISDN and T1 connections are available that boost internet access considerably, but they are either very expensive (i.e., ISDN) or not available (e.g., T1) to home users. Despite the variety of modems available, there are not any real performance-enhancing options beyond the standard 56-kbps modem.

### ***System Configurations***<sup>7</sup>

**Minimal System Configuration:** 80486 DX4 processor, 16 MB RAM, 1 MB video memory, 512 MB hard drive, 28.8-kbps modem. (This configuration is acceptable only for certain portable computing applications<sup>8</sup> and for bargain-basement purchases.)

**Practical System Configuration:** Pentium 133 MHz processor, 256 k L2 cache, 32 MB RAM, 2 MB video memory, 1 GB hard drive, 56-kbps modem.

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<sup>7</sup> There are two different schools of thought regarding purchasing computer systems. One advocates purchasing the 'latest' computer system because the technology is always improving and software increasingly makes use of these technology enhancements. The other school advocates purchasing computer systems that are at least two or three generations behind the newest systems. This school also acknowledges that technology is constantly improving, but that you will never have the latest technology and that most available software does not fully use the capabilities of the latest computer systems. It capitalizes on the greatly reduced prices of older computer technology, while assuring that the purchased computer will meet the current and intermediate-future needs of the user. Don't let the high cost of the latest technology keep you off the Net; the minimum system requirements for reasonable internet use are quite small and the computers are inexpensive.

<sup>8</sup> The Philips VELO 500 is a hand held computer (H/PC) that fits easily into a pocket. Its operating system is a special version of Windows 95 (Windows CE v2.0), and it interfaces easily with desk top and portable computers using Windows 95. The VELO 500 has 16 MB RAM and a 28.8-kbps modem. This is adequate for e-mail messages and for simple internet use. The features that make this unit worth compromising system components are its extreme compactness and portability. The VELO 500 is the size of a normal appointment/address book (and also provides these functions), and it supports both wired (i.e., access via telephone line) and wireless (i.e., access via cellular phone) communications for remote computing anywhere in the world.

**Optimal Performance System Configuration:**<sup>9</sup> Pentium 166 to 200 MHz processor, 512 k L2 cache, 64 MB RAM, 4 MB video memory, 2 GB hard drive, 56-kbps BPS modem.

## The “Catch 22” of Free Browsers

The two major web browsers (i.e., Netscape Communicator, Microsoft Internet Explorer) are available free of charge from the manufacturers; there’s only one catch; you have to download them from their web sites. How do you visit their web sites if you don’t have your first browser? You don’t. So find a browser; any old browser will do. Visit [www.netscape.com](http://www.netscape.com) and follow the links to their latest offerings. Download it and use it. With a bit of luck, Netscape will automatically configure itself except for the local phone number used to access the internet and the information it needs to manage your e-mail account. (And don’t be too surprised if Netscape manages to find and load most of that information from your old browser.)

Some books on the web include free browsers on CD-ROM or 3 ½” diskette. These are often not the latest versions (the software changes too fast), but they will get you up and running. The shrink-wrapped boxes are strictly for idiots and people with no friends. Don’t get caught buying one. Veteran surfers sometimes watch with amusement to see what kind of people pay \$79 for the boxed version of Netscape Communicator.

Microsoft’s Internet Explorer is usually packaged on new computers with the Windows 95 operating system. Sounds like an unfair business practice, the stuff major law suits thrive on. But it will get you started fast. You can switch to Netscape Communicator but don’t uninstall the Microsoft product. Mr. Bill has managed to intermingle his Internet Explorer with the Windows operating system and you might find your computer no longer works. Oops, you deleted the wrong file; some computer pros have spent hours undoing the damage after a hasty delete or two. Just gripe about the wasted disk storage space and live with it. And hope Mr. Bill doesn’t win the next round of DOJ lawsuits.

## Search Engines

Special computer programs are available online to search internet sites and web pages. These search engines allow you to enter a term, concept, or other information and obtain a listing of web pages that are related to your search term. How are they related? That depends on which search engine you use to conduct your search. Popular search engines include Yahoo, Infoseek, and Excite. Yahoo.com is a good starting point for most searches. It will automatically transfer your search to other search engines after it has exhausted its own search capabilities. In addition, Yahoo.com has special directories set-up for popular topics including people and business directories. Want to know how

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<sup>9</sup> Boosting individual system components beyond these values will not appreciably enhance internet performance for most users. Some applications may perform better (multitasking, graphics, games), and changes in internet technology could utilize these enhanced components.

many people in the United States have your name? Try Yahoo's white pages. Looking for a specific business in your area? Try Yahoo's yellow pages. Want to locate an address in Buffalo (or anywhere else in the U.S.)? Use Yahoo's mapping feature. Want to know the local weather conditions and forecast? Yahoo has it!

## **Boolean Algebra: Focusing Your Search**

There are two general types of searches: basic and advanced. Basic searches match information entered as the search term. Advanced searches permit more control over the search by using Boolean algebra operators. The most frequently used operators are: AND, OR, NOT. Explore the "advanced search" feature on Yahoo for a quick lesson.

## **Backtracking on Your Hits**

One trick that is sometimes missed even by experienced web surfers is backtracking on your hits. Your search engine may lead to an interesting web page at a site that contains the type of information you are searching for. Standard web-programming technique dictates that every page should contain a hyperlink to the site's home page and other useful information. Sometimes, however, you land on a web page without any information directing you to the primary directory for that page. You can backtrack quite easily by manually modifying the URL your browser is viewing; this will usually allow you to search backwards through the web site. For example, if you found the page describing the biological mechanisms of addiction and it did not contain a hyperlink to the home page, you could read URL "www.wings.buffalo.edu/aru/biological.htm," erase the information after the last slash which takes you to the specific web page (i.e., /biological.htm), and you would find the home page for the ARU web site. Many long URLs have multiple layers that can be explored by backtracking. With Netscape Navigator/Communicator, simply click on the URL found on the "location" line; this highlights the entire URL; next highlight just the ending section you wish to delete; delete this part of the URL (you can use the backspace key); then hit the enter key to jump to the new URL.

# **e-mail Savoy**

## **Etiquette**

The use of e-mail permits rapid, free-flowing communication between parties at a pace that is more conversational than traditional (snail) mail. It also seems to encourage more spontaneous outbursts of heated opinion or anger (i.e., flaming) than conventional mail. And it certainly permits the free distribution of advertisements and other junk mail (i.e., spam) without even paying bulk postage rates.

Anything you send is potentially in the public domain and can be sent to anyone. Anything you send could lead to litigation, although this seems to rarely happen. Avoid flaming and spamming. Don't write in upper case letters except for brief emphasis (it's

considered shouting). And don't give out your friends' e-mail addresses without their explicit permission.

## **Distributing Your e-mail Address**

Be judicious when providing your e-mail address to commercial concerns. Sending unsolicited e-mail advertisements is the latest wave in aggressive marketing. Like your home address, companies may redistribute or even sell your e-mail address. The volume of spam can be overwhelming.

## **Working in Groups**

There are three popular systems for working with groups. Discussion Groups involve special computer systems that manage the information and distribute it to all members registered on the Discussion List. Mailing Lists are e-mail addresses managed by your e-mail program that sends your messages to multiple recipients. And Newsgroups are a third method of group messaging that involves dedicated servers on the internet.

### ***Discussion Groups***

For a detailed example of how to subscribe to a discussion group, visit the [www.wings.buffalo.edu/aru](http://www.wings.buffalo.edu/aru) web site and follow the "Discussion Group" hyperlink.

### ***Mailing Lists***

Netscape Navigator/Communicator supports mailing lists which permit sending an e-mail message to multiple recipients. Simply enter the e-mail addresses of all recipients in your address book, and then create a mailing list. Enter the name of the mailing list in the "send" field of your e-mail message.

## **Attachments**

Netscape Navigator/Communicator has an attachment function included with its e-mail manager. You can 'attach' various elements to your e-mail. Popular attachments include graphics files and entire documents. Simply click on "attachments" in your e-mail manager and you are prompted for the name of the file to attach. Regular e-mail messages can be included with the attachments. Microsoft Word is one of the more popular word processors and Microsoft provides a free Word reader for recipients who don't have Microsoft Word. Adobe's PDF files are another popular way of sending lengthy documents via e-mail, and users can read these files using Adobe's Acrobat Reader which is available as a free plug-in (described earlier).

## **The Free Speech Caveat**

The internet is unregulated and open to all. Anyone can have a web site and anyone can post anything. User beware, but keep it that way! It is the ultimate free speech vehicle.