

Electronic Dissemination of Nutrient Data  
via Bulletin Boards and Internet.

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**Nutrient Data Bank Bulletin Board**

The Nutrient Data Bank Bulletin Board is operated by the Nutrient Data Research Branch of USDA's Human Nutrition Information Service to provide an additional source of information on HNIS activities and publications. It also serves an alternate means of distributing USDA's nutrient data through a number of data files which can be downloaded from this board.

To access the bulletin board you will need the following: Computer, modem, communication program, and telephone line. Although the bulletin board can be accessed from any computer, files for downloading are compressed, and made self-extracting using a program run on an IBM compatible PC. Therefore users of other machines will not be able to uncompress the files, but will still be able to read all bulletins. Users of other machines, as well as users of IBM compatible machines, who have access to the Internet will be able to access the data through Internet. The data files on Internet are not compressed. Instructions on accessing the data through the Internet will be described later in this paper.

The telephone number for the bulletin board is (301) 436-5078 and operates at either 1200 or 2400 baud. The line settings are N-8-1. Although these line settings are commonly the default values, you may have to change these on your communication program. Consult your manual to determine how.

A sample session on the Nutrient Data Bank Bulletin Board begins with figure 1.

```
Enter FIRST name? jean-luc
Enter LAST name? picard
Enter CITY and STATE? Starship enterprise
JEAN-LUC PICARD from STARSHIP ENTERPRISE
C)hange FIRST name/LAST name/CITY and STATE, D)isconnect, [R]egister? r
Enter password (dots echo)? .....
Re-Enter password for Verification (dots echo)? .....
Please REMEMBER your password
```

**Figure 1 - Initial sign-on to Nutrient Data Bank Bulletin Board**

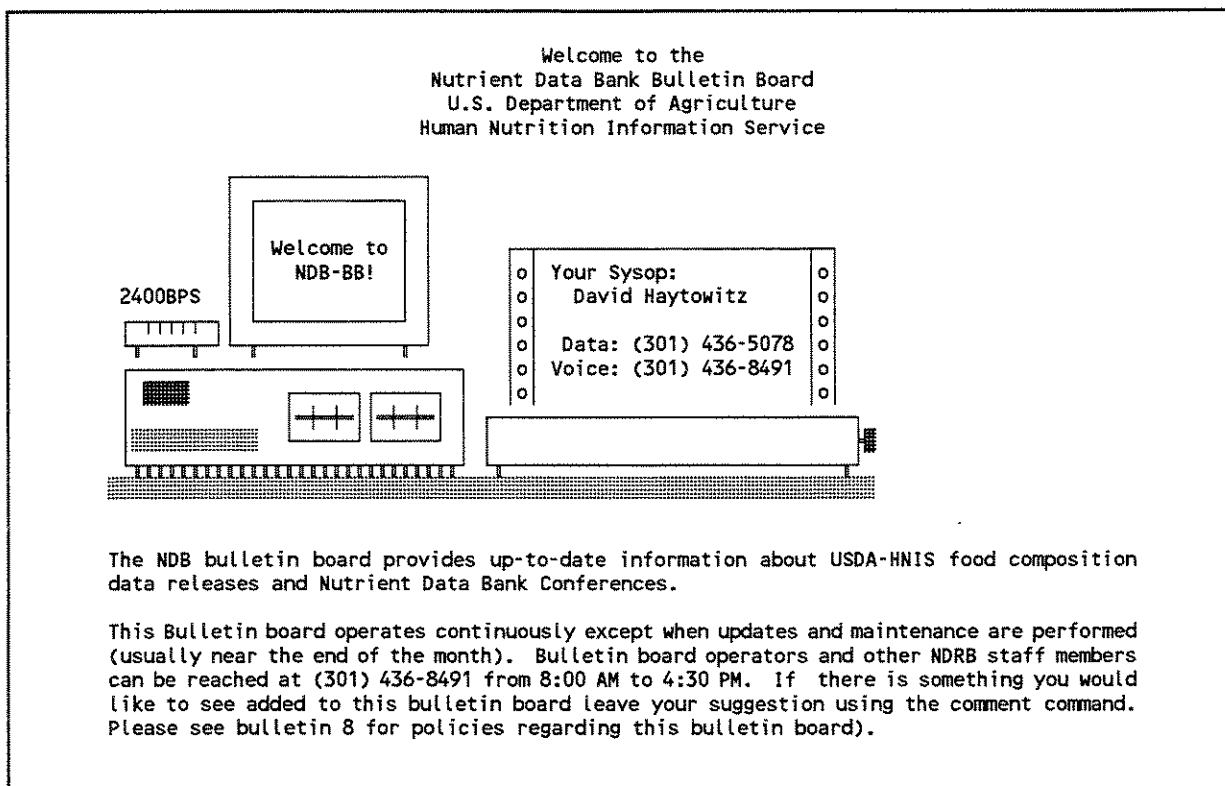
At this point you will be prompted for some information to be used by the bulletin board program in communicating with you. These include graphics, transfer protocols, etc. If any of the selections don't work correctly, they can always be changed by selecting the utilities option from the main menu.

The first question regards graphics capabilities. You may select either none, color, or ASCII. If you have a color monitor, you may select C for color. If you do not see words in color or some strange characters, select A to use IBM graphics characters, otherwise select none. If you find that one of these

selections does not work properly they can be changed with the graphics option under the utilities submenu.

You will then be prompted for a protocol to be used in downloading files. If you select 'none' as your default protocol, you will be prompted with the entire list of protocols each time you download a file. Whichever protocol you select here, you also should tell your communication program to use the same protocol. This is very important. No matter what you decide, you can still override the default protocol by including the letter of your choice along with the name of the file you wish to download (e.g. "D FILE1.ZIP X" will download FILE1.ZIP with Xmodem protocol, regardless of your default choice). The following protocols are available: ASCII, crc Xmodem, Kermit, Windowed Xmodem, Xmodem, Ymodem (1K Xmodem), and none. The board will then ask you if you would like to use the TurboKey. This is faster, as the program does not have to list the menu before every prompt. However, unless you are familiar with the RBBS-PC commands, you should respond 'no' to this option.

You will only have to answer these questions the first time you sign-on to the bulletin board, as the program stores this information for future reference. If you have successfully completed the above steps you will then get the bulletin board welcome message (figure 2).



**Figure 2 - Nutrient Data Bank Bulletin Board welcome screen**

The bulletin board will now let you know if there are any messages for you. You may leave messages for the system operator ("sysop"), who will respond to your message through the board. If you desire a faster response, leave your phone number and we'll get back to you as soon as we can.

A list of current bulletins is then displayed (figure 3). This list is current as of June 1992. During subsequent sessions you will be informed if there are any new or updated bulletins and will be given an opportunity to read them. You may then read any or all of the bulletins. After each bulletin, the list will be repeated. You may read the bulletins on the screen or use your communication program to capture them and read them later at your convenience.

----- Nutrient Data Bank Bulletin Board Menu -----		
#	Subject	Date of Last Update
1.	Special Announcements	6/10/92
2.	Current Food Composition Data Sets prepared by USDA-HNIS	10/25/91
3.	Descriptions of Food Composition Data Sets listed in Bulletin 2	8/14/89
4.	Ordering Instructions for Data Sets	8/11/89
5.	Food Composition Publications issued by USDA-HNIS	10/25/91
6.	USDA-HNIS Dietary Analysis Program for PC (description)	7/15/91
7.	Nutrient Data Bank Conference Announcements	6/10/92
8.	Purpose and Policies of the NDB Bulletin Board	6/15/89
9.	Overview of functions on this bulletin board	9/27/89
10.	Meetings, Symposia and Exhibits	5/1/92
11.	Description of Files for Downloading	10/3/90
12.	USDA's Role in the National Nutrition Monitoring System	3/3/92
13.	HNIS Specialists	5/1/92
14.	HNIS Publications for Sale	3/3/91

-----  
Read what bulletin(s), L)ist, S)ince, N)ews ([ENTER] = none)? 1

**Figure 3 - List of Bulletins**

The bulletin board main menu will now be displayed (figure 4). From this menu you can read mail, leave comments for the sysop, switch to the utilities or file submenus, and of course log off.

In order to download a file, select "F" from the main menu to display the file menu (figure 5). From the file menu, you can review the list of files available for downloading, and select the ones you wish to download.

By selecting "L" for list, we can see the files available for downloading (figure 6). This list is current as of June 1992 and will change as files are added and removed.

To download a file press return or enter. You will then see the file menu again. Select 'D' for download. You will then be prompted for the name of the file. The program will search for the file, and when found, will indicate the file size and estimated transfer time (figure 7). The program then waits for you to tell your communication program to receive the file and to specify where you want it put. If you are unsure how to do this, check your communication program manual.

```

-----*>>>  RBBS-PC  MAIN MENU  <<<-----
MAIL      SYSTEM      UTILITIES      ELSEWHERE
[E]nter Messages  [A]nswer Questions  [H]elp (or ?)  [*]ools
[K]ill Messages   [B]ulletins          [*]Join Conferences  [F]iles
[P]ersonal Mail   [C]omment to Sysop  [*]iew Conf. Mail  [G]oodbye
[R]ead Messages  [I]nitial Welcome  [X]pert on/off    [Q]uit
[S]can Messages  [O]perator Page    * = unavailable   [U]tilities
[T]opic of Msgs  [W]ho's on
-----
Current time: 10:02 AM      Minutes remaining: 57      Security: 5
-----
MAIN: 57 min left
MAIN command <?,A,B,C,E,F,G,H,I,K,O,P,Q,R,S,T,U,X>? f

```

**Figure 4 - Bulletin Board Main Menu**

```

-----*>>>  RBBS-PC  FILE MENU  <<<-----
-- TRANSFER ----- INFORMATION --- UTILITIES --- ELSEWHERE -
[D]ownload file   [L]ist files        [H]elp (or ?)  [G]oodbye
[P]ersonal dwnld [N]ew files         [X]pert on/off  [Q]uit
[*]pload file    [S]earch files
                  [*]iew archives    * = unavailable
-----
Current time: 10:05 AM      Minutes remaining: 54
-----
MAIN: 54 min left
FILE command <?,D,G,H,L,N,P,Q,S,V,X>?

```

**Figure 5 - Bulletin Board file menu**

NTISFORM.TXT	5176	08-11-89	NTIS order form (2 pages)	NDB
LVG.EXE	79210	10-19-89	AH-8-17 Lamb, Veal and Game	NDB
CRL.EXE	68061	10-19-89	AH-8-20 Cereal Grains and Pasta	NDB
SUPP1.EXE	56397	10-19-89	AH-8 First (1989) Supplement	NDB
FF.EXE	64571	10-24-89	AH-8-21 Fast Foods	NDB
DAP2.EXE	243241	03-13-90	Dietary Analysis Program, Ver. 5.0	NDB
SUGAR.EXE	32467	03-19-90	Sugar data and Sugar documentation	NDB
BEEF90.EXE	171283	06-01-90	AH-8-13 Beef Products (revised 1990)	NDB
MAN9.EXE	119808	06-12-90	Coding Manual for Release 9	NDB
VITK.EXE	15274	07-20-90	Vitamin K Table (HNIS/PT-104, 6-90)	NDB
HG72.EXE	56060	01-07-91	HG-72, Release 3.2	NDB
VITD.EXE	16616	06-14-91	Vitamin D Table (HNIS/PT108, 6-91)	NDB
NDBFCS4A.EXE	305203	08-23-91	Survey Nutrient DB, Rel 4, Part A	NDB
NDBFCS4C.EXE	231582	08-23-91	Survey Nutrient DB, Rel 4, Part C	NDB
NDBFCS4B.EXE	261844	11-04-91	Survey Nutrient DB, Rel 4, Part B	NDB
RETN3.EXE	18151	01-03-92	Retention Factors, Release 3	NDB
SNKSWT.EXE	105842	01-03-92	AH-8-19 Snacks and Sweets	NDB
FRSHPOK.EXE	62144	01-24-92	Fresh pork data (Revised 1991)	NDB
SUPP2.EXE	56664	06-15-92	AH-8 Second (1990) Supplement	NDB
SUPP3.EXE	44273	05-12-92	AH-8 Third (1991) Supplement	NDB

**Figure 6 - List of files available for downloading**

The program will then display the file menu (Figure 5) again. You may download another file, go back to the main menu, or quit (leave) the board. You may leave the bulletin board from either the file menu or the main menu.

```
(file menu appears here)
MAIN: 57 min left
FILE command <?,D,G,H,L,N,P,Q,S,V,X>? d
Download what file(s)? supp3.exe
Searching for SUPP3.EXE.
File Size      : 346 blocks  44273 bytes
Transfer Time: 3 min, 56 sec (approx)
Xmodem SEND of supp3.exe ready. <Ctrl X> aborts
      (program will display blocks transferred during download)
Download successful
```

**Figure 7 - Sample file download**

#### Nutrient Data Bank Bulletin Board on the Internet - Access via telnet

In 1991, HNIS took another step to broaden access to nutrient data. In cooperation with the University of Maryland in College Park nutrient data were made available through the Internet system. The Internet is a network of regional networks connected by a high-speed "spine" maintained by the National Science Foundation and others and is capable of transferring data at speeds of over 1 megabyte per second. Work is under way to increase the speed of data transfer even more. To access nutrient data over the Internet type

```
telnet info.umd.edu
```

at your system prompt. The logon ID is info. There is no password. A sample login screen is shown in figure 8.

```
[annex2.umd.edu/28] annex: telnet info.umd.edu
Trying...
Connected to info.
Escape character is '^]'.
ULTRIX V4.1 (Rev. 52)
At the login: prompt below, enter:
      INFO      for access to the Information On-line files and programs.

login: info

Please enter your terminal type (or press RETURN for a list): vt100
```

**Figure 8 - Initial sign-on to access nutrient data on Internet**

At this point, the INFO welcome screen will appear. This screen contains several instructions for using the INFO system. Press any key to move on to the main INFO menu (figure 9).

As you can see, a wealth of information is available here. However, we are looking for nutrient data and we will need to pass through some more menus. Since this system is maintained by the University of Maryland, it can be changed without notice. Although the precise route to get to any data may change, the method will still be the same. Move the cursor to item 3, "Government" and press enter. The screen will then show those directories available under Government. From this screen move the cursor to item 4, "US" and press enter. These screens were omitted to save space, but are similar to the screen shown in figure 9. Select Nutrient Data (number 7), and the main nutrient data menu will be displayed (Figure 10).

From this menu, you can choose to view either the bulletins or the data. The bulletins contain the same information as those on the dial-up Bulletin Board and

VIEW Return Select X-fer Go-To Protocol Quit					INFO 2.0k
-----					
9 FILES IN /					
	Name	Description			protocol = None
-----					
1	Computers	Directory	24 Apr, 1992	10:50	
2	EconData	Directory	28 May, 1992	10:04	
3	Government	Directory	24 Jan, 1992	16:35	
4	ReadingRoom	Directory	18 Jun, 1992	09:56	
5	USAToday	Directory	14 Apr, 1992	07:59	
6	UofMaryland	Directory	23 Jun, 1992	15:47	
7	INDEX	File	27 Jun, 1992	19:00	66247 bytes
8	UPDATE	File	28 Jun, 1992	07:00	10092 bytes
9	WELCOME	File	09 Jan, 1992	16:05	2027 bytes
-----					
Use the up/down arrow keys to select a directory or file, press the first letter of a menu item to act on the selection. Press ? for help.					

**Figure 9 - INFO main menu**

VIEW Return Select X-fer Go-To Protocol Quit					INFO 2.0k
-----					
3 FILES IN /Government/US/NutrientData					
	Name	Description			protocol = None
-----					
1	.. (Previous)	Directory	23 Jun, 1992	09:31	
2	Bulletins	Directory	01 May, 1992	13:30	
3	Data	Directory	21 May, 1992	16:22	
-----					
Use the up/down arrow keys to select a directory or file, press the first letter of a menu item to act on the selection. Press ? for help.					

**Figure 10 - NutrientData menu**

can be viewed on the screen or downloaded to your system. These bulletins are updated at the beginning of each month or when new information is available. A sample list of bulletins available through the Internet (current at of June 1992) is given in Figure 11.

VIEW Return Select X-fer Go-To Protocol Quit   INFO 2.0k				
-----				
13 FILES IN /Government/US/NutrientData/Bulletins				
Name	Description			protocol = None
-----				
1	.. (Previous)	Directory	21 May, 1992 16:23	
2	HNISpublist	File	17 Mar, 1992 12:29	11720 bytes
3	HNISstaff	File	12 Jun, 1992 13:42	3300 bytes
4	NDBconfinfo	File	12 Jun, 1992 13:44	3746 bytes
5	announcements	File	12 Jun, 1992 13:43	3471 bytes
6	datadesc	File	31 Oct, 1991 11:07	11350 bytes
7	datalist	File	31 Oct, 1991 11:05	2683 bytes
8	dietproginfo	File	31 Oct, 1991 11:09	3159 bytes
9	filedesc	File	31 Oct, 1991 11:21	4478 bytes
10	foodcompulist	File	31 Oct, 1991 11:08	5294 bytes
11	meetinginfo	File	01 May, 1992 13:30	942 bytes
12	nutrmonit	File	17 Mar, 1992 12:29	7276 bytes
13	orderinfo	File	31 Oct, 1991 11:07	1856 bytes

Use the up/down arrow keys to select a directory or file, press the first letter of a menu item to act on the selection. Press ? for help.

**Figure 11 - List of bulletins available through Internet**

To go back to the previous menu, move the cursor to item 1 and press enter, or press the escape key. From here we have selected the data directory, which is shown in Figure 12.

VIEW Return Select X-fer Go-To Protocol Quit   INFO 2.0k				
-----				
8 FILES IN /Government/US/NutrientData/Data				
Name	Description			protocol = None
-----				
1	.. (Previous)	Directory	21 May, 1992 16:23	
2	Other	Directory	27 May, 1992 14:46	
3	Standref	Directory	06 Jun, 1992 19:04	
4	SurveyNDB	Directory	27 May, 1992 14:46	
5	dapz.zip	File	21 May, 1992 16:20	228061 bytes
6	index	File	23 Jan, 1992 17:19	393 bytes
7	pkz110.exe	File	21 May, 1992 11:20	148592 bytes
8	readme	File	30 Mar, 1992 15:54	220 bytes

Use the up/down arrow keys to select a directory or file, press the first letter of a menu item to act on the selection. Press ? for help.

**Figure 12 - List of directories available under Data directory**

To find out more about what is contained in these directories, move the cursor to item 6, "index" and press enter. The contents of the index file for this directory is shown in Figure 13.

```

TOP Bottom Up Down Left Right Number Search Quit | INFO 2.0k
-----
.../US/NutrientData/Data/index                lines 1 - 13 of 13
-----

Standref      Nutrient data from Agriculture Handbook No. 8
                Composition of Foods--Raw, Processed, Prepared

SurveyNDB     Nutrient data used in USDA's Nationwide Food
                Consumption Survey conducted in 1987-88.

Other         Nutrient data from other publications and
                provisional tables.

dapz.zip      Dietary Analysis Program in compressed format.

-----
Use left/right arrow keys and RETURN (or first letter of menu item) to perform
function. Press ESCape to leave menu, ? for help about highlighted item.

```

**Figure 13 - Contents of index file for nutrient data**

After pressing the escape key to return to the previous menu, you may select any one of the data directories listed in the menu. For this example the "Standref" directory is shown in Figure 14. Since this directory contains 40 files, not all of them could fit on one screen. To see the remaining files use the arrow keys to scan through the directory.

To transfer a file to your system, move the cursor to highlight the file you wish to transfer. Then move the cursor to 'X-Fer' (at the top of the screen) by using either the right arrow key and pressing enter or pressing the letter "X". You will then be asked to verify if you want to transfer the file you highlighted above. After responding in the affirmative, you will be asked to select a transfer protocol as shown in Figure 15.

Either use the arrow keys or the first letter of your choice to select a transfer protocol. If you select Kermit, you will then need to tell your communication program, which must support use of the Kermit protocol over telnet, that you are sending a file and what you want to do with it. If you are not sure about what to do here, check your manual. If you select FTP you will be prompted for the name of your host machine, your user ID and password, and a what you want to call the file on your system.

The transfer will then take place. Unlike the dial-up bulletin board, these files are uncompressed and you may need to download several files to obtain all of the information available. For example to get all of the information needed to update your files for the new data on cereals you will need to transfer five files:

- crl.dat        The actual data.
- crl.del        A list of records to be deleted from the previous release.



```

VIEW Return Select X-fer Go-To Protocol Quit | INFO 2.0k
-----
40 FILES IN /Government/US/NutrientData/Data/Standref
Name Description protocol = None
-----
1 .. (Previous) Directory 21 May, 1992 16:22
2 beef90.dat File 01 Nov, 1991 11:47 608370 bytes
3 beef90.man File 01 Nov, 1991 11:57 154408 bytes
4 crl.dat File 31 Oct, 1991 11:46 132582 bytes
5 crl.del File 31 Oct, 1991 11:50 235 bytes
6 crl.doc File 31 Oct, 1991 11:50 6922 bytes
7 crl.lnk File 31 Oct, 1991 11:50 913 bytes
8 crl.man File 31 Oct, 1991 11:49 24337 bytes
9 ff.dat File 31 Oct, 1991 12:20 120480 bytes
10 ff.doc File 31 Oct, 1991 13:06 5987 bytes
11 ff.man File 31 Oct, 1991 13:05 21841 bytes
12 frshpork.cdm File 24 Jan, 1992 13:45 78975 bytes
13 frshpork.dat File 24 Jan, 1992 13:45 124426 bytes
14 frshpork.doc File 24 Jan, 1992 13:45 5286 bytes
15 frshpork.ids File 24 Jan, 1992 13:45 829 bytes
16 index File 06 Jun, 1992 19:08 3787 bytes
-----
Use the up/down arrow keys to select a directory or file, press the first
letter of a menu item to act on the selection. Press ? for help.

```

**Figure 14 - List of files available in Standref directory**

```

View Return Select Go-To Protocol Quit | INFO 2.0k
-----
40 FILES IN /Government/US/NutrientData/Data/Standref
Name Description protocol = None
-----
1 .. (Previous) Directory 21 May, 1992 16:22
2 beef90.dat File 01 Nov, 1991 11:47 608370 bytes
3 beef90.man File 01 Nov, 1991 11:57 154408 bytes
4 crl.dat File 31 Oct, 1991 11:46 132582 bytes
5 crl. +-----+ bytes
6 crl. | bytes
7 crl. | Which communications protocol would you like? | bytes
8 crl. | (Press ? for help) | bytes
9 ff.d | KERMITE FTP TFTP Quit | bytes
10 ff.d +-----+ bytes
11 ff.man File 31 Oct, 1991 13:05 21841 bytes
12 frshpork.cdm File 24 Jan, 1992 13:45 78975 bytes
13 frshpork.dat File 24 Jan, 1992 13:45 124426 bytes
14 frshpork.doc File 24 Jan, 1992 13:45 5286 bytes
15 frshpork.ids File 24 Jan, 1992 13:45 829 bytes
16 index File 06 Jun, 1992 19:08 3787 bytes
-----
Enter the first letter of your choice, or use the left/right arrows to
position the highlight then press RETURN. Use ? for more help.

```

**Figure 15 - Selecting Protocol for File Transfer**

- crl.doc A documentation file containing instructions on updating previous releases.
- crl.lnk A list of ID's from the current file along with the ID's they replace from the previous release.
- crl.man The coding manual for the cereal data. This file contains complete, unabbreviated descriptions of items in the data file.

If you do not transfer all of the appropriate files for a food group or data set, you may miss some important information.

You may exit the INFO system at anytime, by pressing "Q" for quit or by using the arrow keys to highlight "Quit" at the top of the screen. You will be asked to verify that you wish to leave the system, and after responding yes will be returned to your host system.

#### Nutrient Data Bank Bulletin Board on the Internet - Access via Anonymous FTP

Another method for accessing the files from the Internet is by the use of anonymous FTP. While some users find this method faster than the menu driven INFO system available through telnet, it does require the user to navigate through the directories unassisted. To make this a little easier the following instructions and figures will illustrate how to find the nutrient data by using anonymous FTP. Since the system is maintained by the University of Maryland, the directory structure illustrated here may change. If this happens, the directory names be different, but the approach would be similar. The user will then need to use the "dir" command to find which directories contain the data.

To access the nutrient data on the Internet via anonymous FTP, type the following (or a similar) command at your system prompt (user interfaces to FTP differ somewhat, although usually not significantly, on different host systems).

```
ftp info.umd.edu
```

You will then be prompted for an ID and password. The logon ID is "anonymous" and the convention is to use your ID and hostname as the password. This is a courtesy to let the people on the system you are accessing know who you are. For example, I would use info-12@info.umd.edu as my password. A sample login session is shown in Figure 16.

```
info[1.163] ~ % ftp info.umd.edu
Connected to info.umd.edu.
220 info.umd.edu FTP server (Ultrix Version 4.35 (logging) Fri Jan 3 19:29:13 E.
Name (info.umd.edu:info-12): anonymous
331 Guest login ok, send ident as password.
Password:
230 Guest login ok, access restrictions apply.
ftp> dir
200 PORT command successful.
150 Opening data connection for /bin/ls (128.8.10.29,4633) (0 bytes).
total 6
drwxr-xr-x 2 root 0 512 Jul 2 1991 bin
drwxr-xr-x 2 root 0 512 Apr 13 14:55 etc
drwxrwxr-x 8 root 17 512 Jun 10 18:10 info
drwxr-xr-x 3 root 0 512 Jul 2 1991 pub
drwxrwxr-x 2 root 99 512 Jul 1 14:11 uploads
drwxr-xr-x 3 root 0 512 Jul 2 1991 usr
226 Transfer complete.
368 bytes received in 0.19 seconds (1.9 Kbytes/s)
```

**Figure 16 - Initial sign-on to InterNet using anonymous FTP**

After logging on, issue the 'dir' command to list the files in the current directory. The next step is to change to the directory containing the nutrient data. The University of Maryland system runs under the UNIX operating system and is case sensitive: the directory names must be typed exactly as they appear. This step, along with a listing of the files in the directory is shown in Figure

17. Note the similarity of these names and the structure to that shown in Figure 10.

```
ftp> cd info/Government/US/NutrientData
250 CWD command successful.
ftp> dir
200 PORT command successful.
150 Opening data connection for /bin/ls (128.8.10.29,4634) (0 bytes).
total 2
drwxrwxr-x 2 154      512          512 May  1 13:30 Bulletins
drwxrwxr-x 5 154      512          512 May 21 16:22 Data
226 Transfer complete.
134 bytes received in 0.17 seconds (0.78 Kbytes/s)
ftp>
```

**Figure 17 - Changing to NutrientData directory**

The next step is to change to one of the directories shown in Figure 17. In this case, we have selected the Bulletins directory, which is shown in Figure 18 along with a list of the files available. This list is the same as Figure 11 under the INFO system accessed via telnet.

```
ftp> cd Bulletins
250 CWD command successful.
ftp> dir
200 PORT command successful.
150 Opening data connection for /bin/ls (128.8.10.29,4635) (0 bytes).
total 65
-rw-rw-r-- 1 512      512          11720 Mar 17 12:29 HNISpublist
-rw-rw-r-- 1 512      512          3300 Jun 12 13:42 HNISstaff
-rw-rw-r-- 1 512      512          3746 Jun 12 13:44 NDBconfinfo
-rw-rw-r-- 1 512      512          3471 Jun 12 13:43 announcements
-rw-rw-r-- 1 512      512          11350 Oct 31 1991 datadesc
-rw-rw-r-- 1 512      512          2683 Oct 31 1991 datalist
-rw-rw-r-- 1 512      512          3159 Oct 31 1991 dietproginfo
-rw-rw-r-- 1 512      512          4478 Oct 31 1991 filedesc
-rw-rw-r-- 1 512      512          5294 Oct 31 1991 foodcomppublist
-rw-rw-r-- 1 512      512           942 May  1 13:30 meetinginfo
-rw-rw-r-- 1 512      512          7276 Mar 17 12:29 nutrmonit
-rw-rw-r-- 1 512      512          1856 Oct 31 1991 orderinfo
226 Transfer complete.
806 bytes received in 0.19 seconds (4.1 Kbytes/s)
```

**Figure 18 - Changing to Bulletins Directory and list of contents**

We can then switch to one of the data directories by entering:

```
cd ../Data/Other
```

This is shown in Figure 19 along with a list of files in the directory.

To transfer a file to your host computer enter the command:

```
get bbs-file-name local-file-name
```

```

ftp> cd ../Data/Other
250 CWD command successful.
ftp> dir
200 PORT command successful.
150 Opening data connection for /bin/ls (128.8.10.29,4645) (0 bytes).
total 198
-rw-rw-r-- 1 512 512 128057 Oct 29 1991 hg72.dat
-rw-rw-r-- 1 512 512 2800 Oct 29 1991 hg72.doc
-rw-rw-r-- 1 512 512 17059 May 1 13:31 ndbcprog.txt
-rw-rw-r-- 1 512 512 24441 Jan 3 1992 retn3.dat
-rw-rw-r-- 1 512 512 2286 Jan 3 1992 retn3.doc
-rw-rw-r-- 1 512 512 8033 Oct 29 1991 vitd.dat
-rw-rw-r-- 1 512 512 1877 Oct 29 1991 vitd.doc
-rw-rw-r-- 1 512 512 3938 Oct 29 1991 vitk.dat
-rw-rw-r-- 1 512 512 796 Oct 29 1991 vitk.doc
226 Transfer complete.
593 bytes received in 0.15 seconds (3.9 Kbytes/s)

```

**Figure 19 - Changing to and Listing Contents of Data/Other Directory**

at the prompt, where "bbs-file-name" is the name on the INFO system, and "local-file-name" is the name you want to have the file to have on your own system. With many systems, the local-file-name can be omitted if you want it to be the same as the "bbs-file-name" (figure 20).

```

ftp> get hg72.dat hg72.dat
200 PORT command successful.
150 Opening data connection for hg72.dat (128.8.10.29,4646) (128057 bytes).
226 Transfer complete.
local: hg72.dat remote: hg72.dat
129018 bytes received in 0.82 seconds (1.5e+02 Kbytes/s)
ftp> quit

```

**Figure 20 - Transferring Files to Host System**

As you can see, transfer speeds are extremely fast. While this transfer rate is probably faster than what you will experience, Internet transfer rates are significantly faster than those encountered with dial-up systems. Unlike the dial-up bulletin board, these files are uncompressed and you may need to download several files to obtain all of the information. This is explained in greater detail above in the discussion under accessing data via telnet. To leave the system, type "quit" at the prompt and you will be returned to your host system.

#### **Nutrient Data Bank Bulletin Board on the Internet - Access without direct Internet connections**

Many people have access to electronic mail systems that are connected to "the outside world", but are not on systems which are directly connected to, and part of, the Internet. As a consequence, while electronic mail can be sent to and from their hosts, they cannot issue such commands as "telnet" or "ftp" directly. This distinction and limitation is particularly important for academic and research sites that are part of BITNET, EARN, or the affiliated networks (many of these sites have acquired direct Internet connections in the last year or so; if you are attached to these networks, please check with experts at your site before using the more complex procedures outlined in this section) and to users of commercial electronic mail systems such as ATTMail, CompuServe, MCIMail, and SprintMail. In many cases special servers are available that can accept requests

by electronic mail, perform retrievals by FTP, and then send the results back to the original users by electronic mail. Consequently, there are alternatives when use of the dial-up bulletin board is not convenient and Internet facilities are not directly available.

The facilities change frequently and you should check with your local experts if you have any trouble accessing them. Each one also uses a different set of commands and logic, so there is little point in trying to make a comprehensive listing here.

One of the most important of these sites as this is being written is the BITFTP facility, based at Princeton and accessible only to users at BITNET, EARN, or other sites of the affiliated networks. To obtain current information on how to use it, send mail containing "help" as the first or only line of the message body to bitftp@pucc (bitftp@pucc.princeton.edu). Another site, ftpmail@decwrl.dec.com provides similar services for users of other systems. To get information on how to use it, send mail with "help" in the message body to that address.

These systems have in common the fact that they are not convenient, or, in calendar time, quick to use. They must be supplied with the same information (often in the form of the same commands) that you would issue to FTP as outlined in the sections above, and no information is kept about what you were doing between requests. Consequently, all requests must be correct, and you must be able to determine and remember how things are organized on the INFO host. Since these servers often impose limitations on the number of characters of data or the number of requests that they will process in a day, retrieval of several files may have to be spread over a period of several days. In some cases, it may be sensible to use the bulletin board to explore what is needed, then use the mail-based FTP servers to actually

#### Additional information

If you have any questions or comments, E-mail can be sent to us at the following address:

info-12@info.umd.edu

There are a large number of user or special interest groups on Internet, through which users can share data and information. One such group, in the area of food composition, is hosted by the Massachusetts Institute of Technology. To join the group, send a message to:

food-comp-request@infofoods.mit.edu

and you will be added to the user list. To send messages to all members of the group, use the E-mail address:

food-comp@infofoods.mit.edu

Through these methods of electronic data dissemination, USDA hopes to make its data available in a rapid, efficient, and inexpensive manner to better serve its use community.

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