

Linkage Newsletter

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1. EDITORIAL

This is the fifth year that the Linkage Newsletter is being published. It appears two to three times a year (but has occasionally also been issued only once) free of charge. This is the first time that it is also being distributed by e-mail over the *Bionews* electronic network (a brief description of *Bionews* is attached to the newsletter when mailed through the postal system). Individuals wishing to receive the newsletter by postal mail should write to us.

The purpose of this newsletter is to foster communication among researchers active in the analysis of human genetic linkage. The following three paragraphs are quotes from the first issue in 1987:

1. Basically, the newsletter should readily disseminate pieces of information relevant to genetic analysis that would not usually be published in scientific journals, where emphasis is on linkage analysis. This comprises, for example, proposals for new methods, notes on computer programs, computer hardware, meetings, experiences with analysis methods and — last but not necessarily least — gossip.
2. Readers are encouraged to submit articles or notes to be published in the newsletter, and I will make every effort at quickly including such contributions. I will not exercise any censorship, however advertisements for commercial products may have to be paid for (fee yet to be determined). When announcing computer programs you will have to specify at what cost they are available.
3. A Question and Answer section is planned in which I will discuss questions I have been asked and what I consider as meaningful answers. Again, contributions from readers to this section are welcome.

2. LINKAGE COURSES

The third linkage course at Columbia University (an advanced course) was held November 8-10, 1990. Of the 30 participants, 17 were from the United States and 13 came from other countries (Australia 1, Belgium 3, Denmark 1, England 3, Finland 2, France 1, Germany 2).

The fourth linkage course at Columbia University will be an *Introductory Course* held from May 15-18, 1991 (Wednesday through Saturday). *The previously scheduled dates of April 3-6 had to be changed because the microcomputer classroom was unavailable then.* Registration is now open and applications will be accepted until February 28, 1991. An application form is attached to this newsletter. *Please pass on copies of the attached announcement to anyone interested.* There is presently no possibility for travel stipends or for reduced admission fees. In the fall of 1991, the usual Advanced Linkage Course will be taught at Columbia University (date not yet set). The topics will include estimating and testing for heterogeneity; linkage disequilibrium; linkage with pseudoautosomal loci; risk calculations (also under linkage disequilibrium and locus heterogeneity).

Linkage courses will also be given in Europe on a more regular basis. The next European course (an introductory course) will be held July 9-12, 1991, at the Association Française contre les Myopathies (AFM) in Paris. Tuition is FR 6 000 and the language of instruction is English. Participants (maximum 24) must meet the following criteria: (i) be currently affiliated with an European laboratory, (ii) be familiar with a PC (i.e. word processing), and (iii) be able to exhibit an immediate need for linkage mapping. For further information and application forms, please contact:

Dr. Lynn Davis; AFM; 1 rue de l'Internationale
BP 59 - 91002 EVRY cedex, FRANCE;
telephone: (33)(1) 69 47 28 28, FAX: 60 77 12 16.

3. SOFTWARE NOTES

3.1 Bug in the SLINK program

The following contribution has been submitted by Dr. Weeks for inclusion in the newsletter:

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1/7/91

To: All users of the SLINK package
From: Daniel E. Weeks
Re: a bug in MSIM, ISIM, and LSIM

Instructions for correcting MSIM, ISIM, and LSIM:

We have discovered another bug in three programs of the SLINK package. In order to correct this bug, one line in the PROCEDURE readspseg has to be changed in each of the programs MSIM, ISIM, and LSIM:

IF j>0 THEN
has to be changed to

IF (j > 0) AND (i <= segperson) THEN

Using a text editor, find the appropriate line in each of your three source code files (as indicated below) and then change it. Then you must recompile each corrected program before you use it. If you have any problems, please feel free to contact me.

Old version:

```
*****
PROCEDURE readspseg;
{Reads from the speedfile in appropriate segments}

VAR
  i, j, a, b, sys: integer;
  ch                : char;

BEGIN                                {readspseg}
  { Note that each person[]^unknown is set to FALSE as the
  person is read in}
  i:=lastspeed;
  j:=lastspeed-lastseg;
  IF j>0 THEN
    BEGIN
      person[j]^unknown:=TRUE;
      NEW(person[j]^store);
      { person[j]^store:=infoptr(NewPtr(SizeOf(information)));}
      WITH person[j]^store^ DO
        FOR sys:=1 TO nlocus DO
          FOR a:=1 TO maxall DO
            FOR b:=1 TO maxall DO
              possible[sys, a, b]:=FALSE;
    END;
*****
```

Corrected version:

```
*****
PROCEDURE readspseg;
{Reads from the speedfile in appropriate segments}

VAR
  i, j, a, b, sys: integer;
  ch: char;

BEGIN                                {readspseg}
  { Note that each person[]^unknown is set to FALSE as the
```

```

person is read in)
  i := lastspeed;
  j := lastspeed - lastseg;
  IF (j > 0) AND (i <= segperson) THEN
  BEGIN
    person[j]^unknown := TRUE;
    NEW(person[j]^store);
    ( person[j]^store := infoptr(NewPtr(SizeOf(information)));)
    WITH person[j]^store^ DO
      FOR sys := 1 TO nlocus DO
        FOR a := 1 TO maxall DO
          FOR b := 1 TO maxall DO
            possible[sys, a, b] := FALSE;
  END;
*****

```

3.2 Computer programs for human genetic linkage analysis

There has not been much change regarding the LINKAGE programs since the last Newsletter, except that version 5.1 has just arrived from Mark Lathrop. We are in the process of carrying out a few tests and hope to have this latest version ready for distribution soon.

A particular version of the LINKAGE programs is now available, which allows for two loci to be jointly responsible for occurrence of a disease (DISK22 in list of programs). To receive a list of all our programs please write, fax, or send an e-mail message.

We are planning on making our programs available by e-mail. One possibility of doing this would be to install a file server on our IBM mainframe running under VM/CMS, which is a Bitnet node. However, we have no file server available and might have to write one. Does anyone have experience with such programs? The other possibility is to run a microcomputer under Kermit in server mode so that people can call up and download information and program files. The latter solution would be relatively easy to implement but requires people to pay telephone tolls.

Appendix to Linkage Newsletter of Jan. 1991, based on a document distributed through Bionews by David Kristofferson, PhD, GenBank On-line Service Manager, Sat Apr 28 1990

THE BIOSCI BULLETIN BOARD NETWORK

The BIOSCI bulletin board network was developed to allow easy worldwide communications between biological scientists who work on a variety of computer networks. By having distribution sites or "nodes" on each major network, BIOSCI allows its users to contact people on other networks around the world without having to learn a variety of computer addressing tricks. Any user can simply post a message to his/her regional BIOSCI node (see list below) and copies of the message will be distributed automatically to all other subscribers on all of the participating networks.

The following is a list of newsgroup topics available for distribution to sites on the ARPANET/Internet, BITNET, EARN, NETNORTH, HEANET, and JANET as well as UUCP sites. For each of these bboards, BITNET name abbreviations and analogous UNIX USENET newsgroup names are provided in a second list below. Also below is a list of the various sites (nodes) that distribute the bboards, the address format for posting messages, and the addresses used for subscription requests.

BBOARD NAME -----	TOPIC -----
AGEING	Scientific Interest Group
AGROFORESTRY	Scientific Interest Group
BIONAUTS	Address & other info about biologists on networks
BIONEWS	General announcements of widespread interest to biologists
BIOTECH	Biotechnology issues
BIO-CONVERSION	Scientific Interest Group
BIO-JOURNALS	Tables of Contents of biological journals
BIO-MATRIX	Applications of computers to biological databases
BIO-SOFTWARE	Information on software for the biological sciences
EMBL-DATABANK	Messages to and from the EMBL database staff
EMPLOYMENT	Job opportunities
GENBANK-BB	Messages to and from the GenBank database staff
GENOMIC-ORGANIZATION	Scientific Interest Group
HUMAN-GENOME-PROGRAM	NIH-sponsored newsgroup on human genome issues
METHODS-AND-REAGENTS	Requests for information and lab reagents
MOLECULAR-EVOLUTION	Scientific Interest Group
PIR	Messages to and from the PIR database staff
POPULATION-BIOLOGY	Scientific Interest Group
PROTEIN-ANALYSIS	Scientific Interest Group
RESEARCH-NEWS	Research news of interest to the community
SCIENCE-RESOURCES	Information from/about the funding agencies
SWISS-PROT	Messages to and from the SWISS-PROT database staff

The following list includes BITNET newsgroup names (<= 8 characters) and also the names of the corresponding UNIX USENET newsgroups.

Messages can be posted directly to any of these newsgroups without editorial intervention. Use the address format

bboardname@nodename

where "bboardname" comes from either the left or middle column below and "nodename" is found at the bottom of the respective column.

For example, the BIOSCI node at SERC Daresbury in the U.K. utilizes the BITNET names and is thus listed below the middle column in the following list. To post a message to the METHODS-AND-REAGENTS newsgroup, U.K. users would mail to methods@uk.ac.daresbury.

USENET users can also post news directly to the USENET groups listed below by using the "postnews" software on their local UNIX computer. Be sure to set the message distribution to "world." USENET groups are read using, e.g., the "readnews," "rn," or "vnews" software on UNIX systems. USENET news software is in the public domain and is available for most UNIX systems. A public domain USENET news software package named ANU-NEWS is also available for VAX/VMS systems. Your local BIOSCI node can point you towards acquiring the software for use on your computer system (BIOSCI addresses below).

BBOARD NAME	BITNET/EARN Name	USENET Newsgroup Name
AGEING	AGEING	bionet.molbio.ageing
AGROFORESTRY	AG-FORST	bionet.agroforestry
BIONAUTS	BIO-NAUT	bionet.users.addresses
BIONEWS	BIONEWS	bionet.general
BIOTECH	BIOTECH	bionet.technology.general
BIO-CONVERSION	BIO-CONV	bionet.technology.conversion
BIO-JOURNALS	BIO-JRNL	bionet.journals.contents
BIO-MATRIX	BIOMATRIX	bionet.molbio.bio-matrix
BIO-SOFTWARE	BIO-SOFT	bionet.software
EMBL-DATABANK	EMBL-DB	bionet.molbio.emblatabank
EMPLOYMENT	BIOJOBS	bionet.jobs
GENBANK-BB	GENBANKB	bionet.molbio.genbank
GENOMIC-ORGANIZATION	GENE-ORG	bionet.molbio.gene-org
HUMAN-GENOME-PROGRAM	GNOME-PR	bionet.molbio.genome-program
METHODS-AND-REAGENTS	METHODS	bionet.molbio.methds-reagnts
MOLECULAR-EVOLUTION	MOL-EVOL	bionet.molbio.evolution
PIR	PIR-BB	bionet.molbio.pir
POPULATION-BIOLOGY	POP-BIO	bionet.population-bio
PROTEIN-ANALYSIS	PROTEINS	bionet.molbio.proteins
RESEARCH-NEWS	RESEARCH	bionet.molbio.news
SCIENCE-RESOURCES	SCI-RES	bionet.sci-resources
SWISS-PROT	SWISSPRT	bionet.molbio.swiss-prot

Node Addresses for left column	location	Node Addresses for middle column	location
bmc.uu.se	(Sweden)	irlearn.ucd.ie	(Ireland)
genbank.bio.net	(U.S.A.)	uk.ac.daresbury	(U.K.)
		genbank.bio.net	(U.S.A.)

Subscription Requests and other Information

There are FOUR main BIOSCI nodes. The BIOSCI nodes in Sweden, UK, and USA all have managers who can add new members to the Bboards, whereas the BIOSCI node in Ireland allows for automatic subscription at LISTSERV@IRLEARN (see detailed instructions on LISTSERV use below). To make the management/debugging of the BIOSCI network easier and to minimize network traffic, it would be most helpful if the following guidelines could be adhered to:

Your Geographical location	subscription address	BIOSCI node location
Scandinavia & Cont. Europe	biosci@bmc.uu.se	Sweden (Internet)
Ireland and Cont. Europe	LISTSERV@IRLEARN	Ireland (EARN/BITNET)
United Kingdom	biosci@uk.ac.daresbury	UK (JANET)
North and South America	biosci@genbank.bio.net	USA (Internet/BITNET)

NOTE: The procedure for automatic subscription through LISTSERV@IRLEARN (primarily for EARN users) is described further below. The BIOSCI manager at IRLEARN may be reached by mailing to BIOSCI@IRLEARN.

Canceling Subscriptions

If you have subscribed to a Bboard and are now leaving an institution or changing your e-mail address, then it is IMPERATIVE that you send a note to one of the addresses above and cancel your subscription. Non-existent addresses or overflowing mailboxes cause computer mail programs to send back "daemon" messages which bother everybody on the Bboard. We will immediately remove any address causing such a problem, but would prefer it if you would notify us in advance as a courtesy to the rest of the user community.

NOTE TO EARN (European Academic Research Network) USERS

Currently the LISTSERV service which allows automatic subscription is available from IRLEARN (NOT from any of the other BIOSCI nodes!). To subscribe to any of the Bboards at IRLEARN, send a message to LISTSERV@IRLEARN containing one of the following lines in the body of your mail message to select the Bboard of interest. If you want to belong to many different Bboards then send all the subscriptions at once in a BATCH mail file.

Replace your_personal_name in the list below with your own name. For example:

SUBSCRIBE +BIONEWS John A. Doe
SUBSCRIBE BIO+SOFT John A. Doe etc....

```
#####  
\      Mail the message to LISTSERV@IRLEARN      /  
* PLEASE DO NOT SUBSCRIBE DIRECTLY TO THE NEWSGROUP ADDRESS *  
#####
```

If you wish to cancel your subscription to a bulletin board, please send a similar message to LISTSERV@IRLEARN replacing SUBSCRIBE with the word SIGNOFF and omit your name, e.g., use simply

SIGNOFF +BIONEWS

It is also possible to cancel all LISTSERV subscriptions with a single command:

SIGNOFF * (NETWIDE

```
#####  
* PLEASE DO NOT SEND YOUR SIGNOFF MESSAGE TO THE NEWSGROUP ITSELF *  
#####
```

Both subscription and cancellation requests are to be sent to LISTSERV@IRLEARN.

Bboard Name	Subscription/	Cancellation Command
AGEING	SUBSCRIBE +AGEING your_personal_name	SIGNOFF +AGEING
AGROFORESTRY	SUBSCRIBE AG+FORST your_personal_name	SIGNOFF AG+FORST
BIONAUTS	SUBSCRIBE BIO+NAUT your_personal_name	SIGNOFF BIO+NAUT
BIONEWS	SUBSCRIBE +BIONEWS your_personal_name	SIGNOFF +BIONEWS
BIOTECH	SUBSCRIBE +BIOTECH your_personal_name	SIGNOFF +BIOTECH
BIO-CONVERSION	SUBSCRIBE BIO+CONV your_personal_name	SIGNOFF BIO+CONV
BIO- JOURNALS	SUBSCRIBE BIO+JRNL your_personal_name	SIGNOFF BIO+JRNL
BIO-MATRIX	SUBSCRIBE +BIOMATR your_personal_name	SIGNOFF +BIOMATR
BIO-SOFTWARE	SUBSCRIBE BIO+SOFT your_personal_name	SIGNOFF BIO+SOFT
EMBL-DATABANK	SUBSCRIBE EMBL+DB your_personal_name	SIGNOFF EMBL+DB
EMPLOYMENT	SUBSCRIBE +BIOJOBS your_personal_name	SIGNOFF +BIOJOBS
GENBANK-BB	SUBSCRIBE +GENBANK your_personal_name	SIGNOFF +GENBANK
GENOMIC-ORGANIZATION	SUBSCRIBE GENE+ORG your_personal_name	SIGNOFF GENE+ORG
HUMAN-GENOME-PROGRAM	SUBSCRIBE GNOME+PR your_personal_name	SIGNOFF GNOME+PR
METHODS-AND-REAGENTS	SUBSCRIBE +METHODS your_personal_name	SIGNOFF +METHODS
MOLECULAR-EVOLUTION	SUBSCRIBE MOL+EVOL your_personal_name	SIGNOFF MOL+EVOL
PIR	SUBSCRIBE PIR+BB your_personal_name	SIGNOFF PIR+BB
POPULATION-BIOLOGY	SUBSCRIBE POP+BIO your_personal_name	SIGNOFF POP+BIO
PROTEIN-ANALYSIS	SUBSCRIBE +PROTEIN your_personal_name	SIGNOFF +PROTEIN
RESEARCH-NEWS	SUBSCRIBE +RESEARC your_personal_name	SIGNOFF +RESEARC
SCIENCE-RESOURCES	SUBSCRIBE SCI+RES your_personal_name	SIGNOFF SCI+RES
SWISS-PROT	SUBSCRIBE +SWISSPR your_personal_name	SIGNOFF +SWISSPR

Introductory Linkage Course

Wednesday through Saturday, May 15-18, 1991

Course Description and Prerequisites

This course is intended for researchers without or with only little prior knowledge of linkage programs. However, familiarity with the principles of linkage analysis and with the use of IBM PCs will be required. The course will begin with a brief introduction to theory and techniques. The main part will consist of problem-solving sessions with use of computer programs (LINKAGE, Linkage Utility Programs) and general question-and-answer sessions. The topics to be covered include strategies and methods of linkage analysis; reduced penetrance; application of computer programs (LINKAGE, Linkage Utility Programs); affecteds-only analyses; inbreeding loops; simple risk calculations. Computer programs can be taken home (on 3½" or 5¼" diskettes). A copyrighted course manual will be mailed for study before the course begins. Please distribute copies of this course announcement to anyone interested.

The course will be taught by myself and my collaborators. It will take place in the computer classroom of the Health Sciences Library (701 West 168th Street) which is equipped with 20 microcomputers of type IBM PS/2 (3½" diskette drives). Due to space limitations, course attendance is *limited to 30 participants*. Participants should plan on arriving in New York on the evening of Tuesday, May 14, 1991.

Course Fee

The fee for the 4-day course is \$500 for researchers at an academic institution, and \$600 for individuals from private (for profit) companies. It may be paid by check drawn on a U.S. bank made payable to Columbia University Dept. of Psychiatry, by Government pay order, or by Travellers checks, but send no money now — applicants will receive an invoice with detailed instructions. As there is presently no support for this course from sources other than the course fee, no reduction of the cost to applicants is possible. This fee covers tuition and course related expenses (handouts, diskettes, rental of classroom etc.) but not room, board or meals. Course participants will receive a list of good and moderately priced hotels in New York and will have to make their own arrangements (except foreign participants). A small number of guest rooms are available in Bard Hall next to the Health Sciences Library (double rooms at \$65 per room per night, single rooms at \$60).

Application for Linkage Course by Dr. Jurg Ott

Please fill out this page and send it by mail or, preferably, by FAX (see below). People interested in staying in a double room at Bard Hall should indicate a preferred roommate, or else we will match applicants. **PLEASE PRINT.**

Your name: _____

Affiliation: _____

Address: _____

Tel. number: _____

FAX number: _____ Bitnet: _____

Interested in staying at Bard Hall? YES / NO DOUBLE / SINGLE

If yes, which nights? Tue Wed Thu Fri Sat Sun

What size diskettes do you use? 3½" 3½"HD 5¼"HD (please circle)
(we prefer 3½"; we have no easy way of writing to low-density 5¼" disks)

For applicants from abroad: Do you want us to make hotel reservations? What accommodations?

Below, please describe which linkage programs you have used if any, how many families you have analyzed, and other experience in linkage analysis you might have:

Signature: _____

Date: _____

Katherine Montague, Course Coordinator
Tel. (212) 960-2507
FAX +1 (212) 568-2750 or 960-5624
Bitnet: OTT@NYSPI