

Linkage Newsletter

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EDITORIAL

Our newsletter, now in its eighth year, is sent to many hundred recipients world-wide. More and more people receive it by e-mail, but we are still sending several hundred copies by postal mail. Please, if you receive this by postal mail, send us your e-mail address if possible - we would like to further reduce the labor intensive task of sending the newsletter by postal mail. If you are afraid of not receiving the newsletter by e-mail, we can send you a test message, or you may ask us to send you the newsletter twice, or to different e-mail addresses.

LINKAGE COURSES

The next two linkage courses are Introductory Courses. They will take place as follows: June 6-10, 1994, at Columbia University, New York (maximum of 30 participants), and June 13-17, 1994, at the University of Zurich, Irchel Campus Computer Center (Switzerland; maximum number of participants is 18).

These courses are for researchers with little or no experience in using linkage programs. A basic knowledge of linkage analysis is, however, required. *Topics:* Introduction to linkage analysis; practical aspects of data collection; strategies and methods of linkage analysis; incomplete penetrance; inbreeding loops; simple risk calculations; introduction to computer simulation. As usual, the main focus will be practical exercises and linkage analyses carried out by the participants on IBM PC's using the LINKAGE and other programs. Each session will begin with a theoretical introduction on the material to be worked on. We will use our new book as the course textbook instead of mimeographed handouts (Terwilliger and Ott, "Handbook for Human Genetic Linkage," Johns Hopkins University Press, to become available in May 1994).

COURSE/MEETING ANNOUNCEMENTS

(Contributed by Dr. Pericak-Vance)

COURSE ANNOUNCEMENT GENETIC ANALYSIS METHODS FOR MEDICAL RESEARCHERS

Description: A four day intensive course on mapping human genetic diseases. The concentration is on the entire disease mapping process, including clinical classification, pedigree collection, molecular genetic analysis, statistical analysis, and gene characterization. The emphasis is on the global decision-making process, rather than details of specific techniques. Participants will be expected to discuss their own research projects.

Date and Location: May 15-18, 1994
Duke University
Durham, NC

Deadline for completed application: March 1, 1994.

For information contact: Dr. Margaret Pericak-Vance
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(Contributed by Dr. A.W. Eriksson)

INTERNATIONAL SYMPOSIUM GENETIC EPIDEMIOLOGY OF TWINS & TWINNING

On April 22 and 23, 1994, the International Symposium 'Genetic Epidemiology of Twins & Twinning' will be organized at the Free University in Amsterdam, The Netherlands. At this symposium two main issues will be addressed. First, causes and consequences of the recent epidemic of multiple gestations as well as the possibilities to repel current high multiple birth rates. Second, twins as a methodological instrument in genetic epidemiology and behavior genetics.

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SOFTWARE NEWS

PC version 5.2 of LINKAGE

Two bugs were reported to me by Drs. Ken Morgan (McGill U.) and Marcella Devoto (Columbia U.). Both resulted in wrong lod scores in a LINKAGE program that seemed to run fine otherwise. The first bug was fixed by Dr. Mark Lathrop; the updated LINKMAP program is being mailed out since about November 1992. The second bug is caused by an overflow of an integer variable in Turbo Pascal, where integers are only 2 bytes long. Until a better solution can be found, the problem may be cured by the statement, TYPE integer=longint, at the beginning of the Turbo Pascal LINKAGE programs (this has been implemented in the currently mailed versions).

Turbo Pascal versions of SLINK and TLINKAGE

The Prospero Pascal compiler for a while seemed a good choice for PC's because it can generate code to run under DOS or OS/2. Because of availability problems and because it does not seem to do well with version 5.2 of LINKAGE, we are converting all our Prospero Pascal programs to Turbo Pascal (for DOS) and NDP Pascal (for OS/2). For a few weeks now, we have been mailing Turbo Pascal versions of SLINK and TLINKAGE. We just became aware of problems with these program versions. These programs are based on earlier LINKAGE versions, in which some dynamically allocated arrays had not been initialized. We have now taken corrective action - if you are experiencing problems with your Turbo Pascal version of SLINK or TLINKAGE, please let us know, we'll gladly send you an amended version.

SLINK will soon be available in a fast version. Drs. Alejandro Schaffer and Daniel Weeks have incorporated some of the features of FASTLINK in SLINK. More information will be available in the next Newsletter.

Turbo Pascal for OS/2?

An article in the German computer magazine -ct- reported on a rather easy patch to Turbo Pascal with the effect that code generated will run under OS/2. I do not yet know much more about this interesting possibility but hope to be able to provide detailed information in the next Newsletter. If anyone has experience with this, please let us know so all linkage analysts can profit from it.

Two potential problems with NDP Pascal

End-of-file character: In DOS, the character with ASCII no. 26 (Ctrl-Z) serves as an end-of-file mark. Our OS/2 NDP Pascal version, however, does not recognize this character and its function in DOS, rather it treats it just like any other character. This creates a problem in pedigree input files for which the LINKAGE programs apply an end-of-file test to see whether an input line is the last line in the file. If Ctrl-Z is present on the next line, the end-of-file test is "false" and the program attempts to read another input line (a pedigree number). It then issues the error message "invalid real" and aborts. Obviously, the problem may be overcome by removing the Ctrl-Z character before the file is used by the LINKAGE programs. Neither PREPLINK nor MAKEPED append a Ctrl-Z but, unfortunately, both editors supplied with OS/2 do. Thus, if you modified one of the input files for the LINKAGE programs with an OS/2 editor, you must remove the trailing Ctrl-Z character. This may be achieved by using an editor that does not append a Ctrl-Z, for example, DOS EDIT or the old WordPerfect Program Editor. If you use DOS EDIT, press Ctrl-End to move the cursor to the end of the file - the cursor should then be at the beginning of the line immediately following the last input line. If it does not, press the backspace key as often as necessary until the cursor is at the end of the last input line (on that line); then save the file.

Numbers with preceding 0's: Most Pascal programs read a number such as 023 simply as 23. Not so programs compiled with NDP Pascal. They treat numbers with preceding 0's as octal numbers. For example, 023 is interpreted as the decimal number 19. Numbers with preceding 0's that contain 9's are interpreted as 0. Consequently, if two pedigrees carry the ID numbers 08 and 09, they will in NDP Pascal programs wind up with the same ID number (that is, 0). We have thus added a small program to the MAKEPED batch file. It replaces the first 0 in a pedigree ID by P0. That way, pedigree ID's are treated by MAKEPED as characters rather than numbers, and the pedigree ID's output by MAKEPED are simple numbers.

LSP for the DOS version of CLINKAGE

As reported over a year ago, for the CEPH families version of the LINKAGE programs (eg. CILINK), the LSP program created a faulty datafile when the number of loci was larger than about 20. This problem has now been resolved by Ms. Xiaoli Xie - it was due to an inappropriate array bound in LSP.

LCP and LSP for OS/2

The OS/2 versions of LCP and LSP until recently ran only in full screen mode. If a user started one of these programs in a window the screen temporarily switched to full screen until the program finished. Ms. Xie has now made these programs window-compatible.

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