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Dear Dr. Chipman:

Enclosed are three copies of the second quarterly report for grant N00014-91-J-1903 titled "BrainMap - A Database of Functional Neuroanatomy Derived From Human Brain Images". Sorry to be a little late with this report.

Last week we reviewed the status of the BrainMap project and the enclosed report is for your information. If you have questions concerning this report please call me or Dr. Fox at 512-567-5549.

Sincerely,

Jack L. Lancaster, Ph.D.
Enclosures

cc: Peter Fox

BrainMap

A Database of Functional Neuroanatomy Derived From Human Brain Images

BrainMap Mac:

Our efforts during the second quarter were again primarily devoted to the Macintosh version of BrainMap. The status of the four main components of BrainMap-Mac software are: (1) **Search Windows** (fully conceived, fully designed; awaiting SQL interface), (2) **SQL interface** (mostly conceived; partly designed; not operational), (3) **Review Windows** (mostly conceived; mostly designed; awaiting SQL interface), and (4) **Report Generation** (partly conceived; partly designed; awaiting SQL interface). Software development is proceeding in a timely fashion, and at present we see no major problems with completing the project on time. Work on BrainMap-SQL has begun and more focus on that portion of the project will be given when BrainMap-Mac is operational.

BrainMap-Mac:

Search Windows: We've finished the SuperCard coding of the Search Windows which provide user interaction for searching through a BrainMap database. The design functionality of this software was described in the first quarterly report dated 16 Aug 91. The Search Windows application will interface to the SQL database to perform user directed searches and queries of the BrainMap database. Users will have the option to search the entire database if desired. However, a special feature of the Review Windows application allows users to make repeated searches on data with subsequent searches applied to the subsets of the database resulting from the previous searches. This narrowing-by-searching approach will help investigators quickly find unique combinations of research results stored within the database.

SQL Interface: We recently shifted our focus from the graphical user

interface (Search and Review Windows) to the development of the SQL Interface. We are coding the SQL portion of BrainMap using Oracle database software. We have defined numerous SQL tables (see enclosure) and are currently in the process of developing data entry routines. Once the data entry routines are complete we will begin testing a small database of PET findings to verify integrity of data and search and query functions of Oracle. The next step will be to add the SQL functionality to the Supercard windows user interface which we've developed. We expect to complete the SQL interface for BrainMap-Mac prior to 1 January 1992.

Review Windows: This is the SuperCard application used to review, edit, and plot the data selected by the Search Windows. Review Windows is accessible from the home window of Search Window and vice versa. The Review Window visual interface incorporates many of the same screens used with the Search Windows application. The Review Windows portion of BrainMap deals with data returned from the SQL database as a result of searches.

Report Generation: Hardcopy output will rely heavily on the report generation capabilities of the SQL software, but will have a custom designed interface allowing users to select a variety of report formats. This will be developed during the 4th quarter of the project.

BrainMap-SQL:

We acquired Oracle for the IBM RS6000 the first week of November. The Oracle applications for entry and report generation are being developed to run on either Mac or IBM RISC series computers. Our current plans are to develop the SQL portion to work totally on the Mac and then test a combination system which uses the Mac for the user interface and the IBM Risc for actual SQL database operations. Finally we hope to have software which can be run either in combination or independently on either computer system. We will concentrate more effort on the unix version of BrainMap after we have a functional SQL version running on the Macintosh.

BrainMap Tables

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