

InULA

Innuendo

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# Librarians vs. Expert Systems

by Gary Wiggins

**R**oger K. Summit, President of DIALOG Information Services, predicts that even with the computing power available in the first decade of the 21st century, people will turn for information to the librarian (or information specialist) who is "versed in worldwide public and commercial information sources, and in the computer/communication techniques necessary for obtaining, organizing, analyzing, reformatting and presenting the information in usable form."<sup>(1)</sup> Will li-

brarians really be a part of the complex, computer-based system which will evolve over the next decade and a half?

In some environments, for example in for-profit special libraries, the librarian already performs many of the functions described by Summit. In academic settings, however, librarians are often struggling to stay abreast of the new technology and frustrated by the costs of both the machines and the data they contain. Nevertheless, the array of available computer systems

and databases continues to multiply, and academic librarians must master these systems and incorporate them into their activities if they are to play an important role in the next century.

One key element missing from the present library environment is the capability for patrons to re-use without change their own bibliographic data when interacting with libraries. We force them to modify those records and to turn to us for expert advice on how to do so. However, if we do  
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# From the Editor

by Emily Okada

Way back in olden times—about 1981—I joined a book club. One of the three-titles-for-three-dollars I selected for my new member bonus was a book called *The Techno/Peasant Survival Manual* (Bantam, 1980). Much has changed since 1981, but the book's central theme “..if we want technology to liberate rather than destroy us, then we...have to assume responsibility for it” still holds. Information/knowledge/power will be beyond your grasp if you remain technologically illiterate; you will remain a “techno/peasant.” There are many interpretations of “power.” I define it as being

in control of your life, being aware of options and having the ability to follow whatever path you choose (am I a child of the sixties or what?). If you are technologically literate, you can take advantage of what is available, be it electronic mail, desktop publishing, InfoTrac, D-Base, or Zork to expand your horizons and increase your options.

The articles in this issue of the *Innuendo* invite us to participate in the application of new technology. Gary Wiggin's article explores the use of technology in libraries, Steven Schmidt's article focuses on how technology can be applied sys-

tem-wide by individuals within the libraries. Rebecca Cape initiates a new column that we hope will be a regular one: “Did You Know...” The column will present practical information about using the Vax electronic mail system, including LIRN. When that topic is exhausted, “Did You Know...” will branch out into other areas. However, it will never become a gossip column!

In the spirit of using new technology along with human talent, the new layout for the *Innuendo*, designed by Don Nissen, makes its debut with this issue.

*Emily Okada is Reference Services Coordinator for Undergraduate Library Services IU-Bloomington.*

## Book Sale Donations Wanted

**Donations for the InULA Book Sale are wanted:**

- Books, tapes, records, and videos are being sought for the annual InULA Book Sale.
- Arrangements for pick-up/drop off of donations may be made by contacting Carl Horne, Cataloging Dept. (335-5711).
- The sale will be held on April 18th during National Library Week, at the Main Library (IU-Bloomington). All proceeds from the Book Sale go to supporting InULA activities and the *Innuendo*.

For more information contact Rosann Auchstetter, Fine Arts Library (335-3314)

# Sweet Treats

by Steven J. Schmidt

There is a bakery at the end of our block. Every time my daughter and I walk past, she loves to stop and press her nose against the glass. Her nose smudges the glass as she looks at all of the sweet treats inside. The sales clerk waves and we continue on our way.

A lot of people I've spoken to seem to think that the electronic mail setup on the Bloomington Academic Computing System is a lot like that window. They see it as a high-tech window for those of us outside of Bloomington to look in. But a window can also be a barrier, something that separates or insulates the watcher, and that isn't the purpose of electronic mail. I prefer to compare it to a multi-lane highway carrying messages and ideas back and forth between campuses.

A good example of this highway concept is the President's Task Force Planning System on the gold vax. It is, in effect, an electronic committee where members located all over the state share their comments and opinions just as they would if they were seated

around the same table. The hours which used to be lost traveling from the far reaches of the state are now put to a far more productive use.

Another popular misconception is that use of these electronic mail, or E-mail systems, by the outlying campuses is new. The interlibrary loan system within the statewide IU library network has been using electronic mail heavily for years. Project Electro, a very BASIC program on the green vax, was initiated by Larry Griffin in 1983. Using the many-to-one style of electronic mail, participating libraries send messages into and receive them from one shared mailbox. File names are used to identify the recipients. Project Electro has undergone a number of upgrades over the years and has greatly improved the speed and efficiency of interlibrary loan service system-wide.

Like most E-mail systems, Project Electro has one major drawback. At some point everything must be keyed in by hand. Good typing skills have never been the first priority for hiring

in our interlibrary loan offices, so this has been a pronounced weakness. In an attempt to overcome this problem, many of the interlibrary loan offices in the system have moved on to another new technology, telefacsimile.

Telefacsimile, or fax, is now being used by many of the system libraries to transmit interlibrary loan requests, photocopies and correspondence. Three of the IUPUI libraries—University Library, the Science & Engineering Library, and the IUPUI Columbus Center Library—use fax regularly to pass messages back and forth. Currently these libraries are investigating a BDS-like chargeout service for books using the telefax machines to transmit the chargeout slips to the holding library.

The telefax traffic is also very heavy between the Bloomington and IUPUI campuses. A study conducted at IUPUI last year found that books requested over fax were received on the average two days earlier than those requested using Project Electro. Better still, when photocopies were requested and delivered using fax, over three-quarters of the articles were in the patrons' hands in under 48 hours.

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# Librarians vs. Expert Systems, continued from page 1

adapt our systems soon, we may discover that our users have found another expert--one that talks as we do, but also whirrs, beeps, and plays music!

Let us take as an example the scientific journal literature. It is no secret that scientists rely very heavily on the journal literature, indeed, so heavily that some are being driven from their own offices by the cache of journal volumes, article copies, etc., which they have acquired over the years. These collections of materials constitute "private libraries" which are every bit as much in need of automation to organize them as are the collections in academic libraries. There is quite a difference in emphasis between the two types of collections, however. While most academic libraries provide access to their materials at the most general level (subject and descriptive cataloging of books and journals), scientists seek access at a much more detailed level (the article within the journal, the chapter within a book, conference proceedings, etc.). Although some special libraries abstract and index at such a detailed level, academic libraries seldom do. Instead, we rely

on secondary information services for access at the level most desired by the scientist. We supply a set of records which indicate only if a particular book or journal issue is available.

Missing in this scenario is the link between library records and the bibliographic data scientists use more frequently. The standards followed by most of the scientific abstracting and indexing services for citations to primary source documents differ radically from those used by academic libraries. Thus, a scientist who comes to the library with a perfectly good citation is faced with the problem of translating the entry into the library standard. For example, *J. Am. Chem. Soc.* may be found in a card catalog under *American Chemical Society. Journal.*

In designing library automation systems, librarians should be guided by a very simple principle: never make the user re-key anything. If the library records and those of the scientist are incompatible, build the computer interface which does the translation. In fact, the computer already gives us the capability to remove some barriers to information retrieval. A

database which ties together most of the world's scientific journal entries (as scientists cite them) and the main entry form used by most libraries is CASSI, the online counterpart to the *Chemical Abstracts Service Source Index*. Since this translation step is so crucial in linking the scientist and his literature, why is that link not routinely provided in libraries? Because there is far less standardization for serial entries on the scientists' side than there is on the library side. The journal abbreviation used in one scientific abstracting or indexing service may not be the same as the one used in another. Even major services like Science Citation Index and Chemical Abstracts use conflicting abbreviations for the same journal. For example, CASSI cites *Chemical Communications* as *J. Chem. Soc. Chem. Commun.*, but *Science Citation Index* uses J CHEM S CH.

It is no trivial matter to translate abbreviations from all of the scientific abstracting or indexing services into the library form of the entry. Nevertheless, building the interface is the necessary first step to integrate the library into scientific communication

cesses. Two existing standard data elements which can facilitate this process for most scientific journals are the CODEN and the ISSN.(2)

In the future the research process will be quite different. Imagine this scenario: A researcher poses a verbal question in natural language to a microcomputer (or work station). The microcomputer then analyzes the question and selects the appropriate vocabulary words to use in a search for information on the topic. The terms are displayed for (or told to) the user, who accepts or rejects them. The search is formulated and run against a master file of database indexes to see which databases are appropriate to search. Front-end or gateway software then automatically selects the appropriate vendor or accesses the appropriate local databases to perform the search. The retrieved references are scanned by the computer for duplicates, and a combined list, ranked in order of predicted importance, is presented to the researcher. The list is scanned by the user for relevance, and sources of interest are chosen and flagged electronically. Those references are then automatically matched, first against the researcher's private library, then, if

necessary, against the local library holdings. If found in the personal file, a digitized version is put into a work file to await further use. If found only in the academic library's collection, pointers to the works are put into a work file to await an order from the researcher for downloading to a work station. Finally, if neither the private file nor the local library collection has the material, a massive search of a union listing of all available material is con-

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**The reference function in libraries has always been akin to a search of a "superdirectory"**

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ducted and pointers to those works placed in the researcher's work file. If it becomes necessary to obtain for the researcher the material not held locally, the selected items are automatically transmitted to the personal work station. The entire burden of locating the material is taken from the user and the librarian.

The scenario described above will ultimately come about. However, we are still a long way from that point. Until that time arrives librarians will continue to serve as the interfaces between the researcher and what is actually available. We serve the function of an

"expert system," translating the questions asked of us into the terms needed as input to the systems which will actually be used for many years to come. Until truly computerized expert systems become a reality, there is little alternative to the librarian as a "gateway" to the sources of information. In a sense, the reference function in libraries has always been akin to a search of a "superdirectory" from which the librarian selects the few relevant sources among myriad possibilities. This is a function we will continue to perform with increasing help from the computer.

Librarians must also advise scholars on the best ways to organize information once it has been retrieved from the larger store of knowledge. Software is available which will allow the user to take bibliographic data from a personal library and manipulate it into the format required by dozens of major style guides. One example is the "Editor" component of ISI's Sci-Mate system. With other components of Sci-Mate, the users can formulate and run online searches on four major online search vendors' systems without knowing their command languages

("Searcher") and down-  
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# Did You Know...

by Rebecca Cape

*...That electronic mail is a fast, convenient, and easy method of communicating with IU faculty and co-workers?*

*...That an online Library Information and Reference Network (LIRN) is available through which you can renew books, request materials through Bloomington Delivery Service (BDS) or Inter-Library Services, search OCLC, or ask a reference question?*

*...That Gold Vax accounts for gaining access to electronic mail and LIRN are available for all library faculty, and for support staff with approval?*

To obtain a Gold Vax account on the Bloomington campus contact the Bloomington Academic Computing Services office for an application form. After completing the form forward it to Lynn Smith, Library Budget Officer, for approval. On other campuses contact your local computer services office. After you have received your account take a few minutes to learn how to use it. The preliminary steps for connecting to the system will vary accord-

ing to the type of computer and communications software you are using.

## **A few hints:**

After you receive the "#" prompt, type CALL 1300, followed by two carriage returns <CR> <CR>. The next prompt that appears is "Username." Enter your user name as assigned by BACS, followed by <CR>. Then the "Password" prompt appears at which you enter your assigned password and <CR>. After a few seconds the Main Menu of the Academic Information Environment scrolls up on the screen. At the prompt "Type 1-9 or an option letter" type in M and <CR> to gain access to the electronic mail system.

To read new messages press <CR> at the prompt "MAIL>." To delete the message just read, type in DELETE or D, followed by <CR> at the "Mail" prompt. If you do not delete a message it remains in your mail file. To find out what messages are in your file enter DIR <CR> at the prompt and then the number of the message you want to read.

To send a message, type SEND or S and <CR> at the "MAIL>" prompt. You are then prompted to enter the electronic mail address of the recipient and the subject of the message. Next enter your message, pressing CTRL Z when finished. Press CTRL C if you don't want to send the message. You can send your message to more than one person by separating the recipients' addresses with commas. You can also send the message to yourself! If you wish to reply to a message that you have just read, type in REPLY or R, then <CR> at the "MAIL>" prompt. The system will supply the header information and then you enter your message the same way as sending a message.

If you want your electronic mail to go to another address either all the time or just while you're away, type SET FORWARD and then the address you want your messages forwarded to, then <CR>. To see if it worked, enter SHOW FORWARD <CR> and the system should respond that your mail is being forwarded to the new address. To stop the

ing, enter SET NOTFORWARD, then <CR>. If you then check with SHOW FORWARD the system should respond that you have not set a forwarding address.

BACS has a number of handouts about using electronic mail and offers workshops on the topic as well. Call BACS or send a message to gold::infoctr for more information.

Watch DID YOU KNOW... for information about creating and using electronic mail distribution lists for sending the same message to a group of people and about the Library Information and Reference Network (LIRN). In the meantime, if you have any questions, comments, corrections, or helpful hints, contact me at either 335-2452 or gold::gibson.

*Becky Cape is Assistant Curator of Manuscripts, Lilly Library, IU-B*

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**Coming in May: the  
4th annual  
InULA  
Auction**

**Watch for official  
announcements.**

# Notes From InULA

by Mary Popp, President, 1987-88

It's Spring! Traditionally, this is InULA's busy season and all the InULA committees are hard at work.

The Program and Social Committee gave us a wonderful program December 16th about "How to Get the Most Out of a Conference." Even veteran conference-goers got new tips. This committee is now hard at work planning the auction.

InULA's National Library Week Book Sale will be held in the Media Showing Room of the Main Library (Bloomington) on April 18th. Donations are welcome; call Roseann Auchstetter (Fine Arts Library-Bloomington, 335-3314).

The Fund Raising Task Force is exploring the possibility of holding a raffle during the National Library Week Book Sale. Other ideas are welcome; contact Mary Krutulis (SLIS, 335-2018 in Bloomington).

The Board has appointed a task force to evaluate the Research Incentive Fund Program by April 15th. The group--Kris Brancolini, Julie Bobay, and Betty Hanson, will interview applicants and recipients of the grants. If you have comments, please call any

member of the task force.

Mark your calendar for the upcoming All Librarians Meeting. This all day meeting is being co-sponsored by the InULA Continuing Education Committee and IULFC. It will be held in Indianapolis on either May 18th or 25th. President Ehrlich will be the morning keynote speaker. Afternoon sessions will feature discussions on a variety of topics of interest to librarians.

The Board will discuss several new projects during its March meeting: establishing a research clearinghouse/network, helping to coordinate an IUL development workshop, surveying the InULA membership to get input/opinions on this organization's activities, member needs, and expectations. If you have any other items you wish the Board to address, please contact me (Undergraduate Library Services-Bloomington 335-9857) or any other member of the Executive Board.

*Mary Popp is Instruction Coordinator, Undergraduate Library Services, IU-B*

## Sweet Treats

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J. Robert Oppenheimer once remarked that it will take an open society, one where the access to knowledge is unrestricted, to make a vast, complex and ever-changing technological world into a human community. The IU system is just such a complex system with different but overlapping needs and wants spread over 36,000 square miles. The modern technologies such as telefacsimile

and electronic mail have, I feel, removed the limits of geography making us truly a statewide university.

Unlike the treats my daughter longs for through the glass, we can sample all of the treats of the IU system.

IU librarians are eligible to receive a computer access account. Start sampling now. It's easy, it's fun, and it's non-fattening.

*Steve Schmidt is Circulation/ILL Librarian, University Library, IUPUI*

## Librarians vs. Expert Systems,

*continued from page 5*

load that data and reload it (without reformatting) into their own computer ("Manager"). There is even related software, MARC-Mate, which can automatically reformat downloaded OCLC records into the format required in Sci-Mate. References to laboratory notebooks, as well as to other printed material, may also be entered into the "Manager," which then can be searched as you would a major online database. Up to 32,767 records can be entered on a 20 MB hard disk.(3)

These are exciting developments in the scholarly

world. For the library to provide the greatest possible service in such an environment, we must design systems which accommodate the computerized records of our users. Conflicting systems of bibliographic citations in use among those users is a problem.

However, we can and must create systems which cope with those differences without inconveniencing the user.

### Notes:

1. Roger K. Summit, "Special Libraries and Information Centers in 2009," in *Information and Special Libraries in 2009: Informed Speculations*, ed Judy Genesen and David D. King (Chicago: Special Libraries Association, Illinois Chapter, 1984), p.24.

2. The CODEN is a six-character abbreviation assigned to scientific and technical journals. The ISSN,

or International Standard Serial Number, is a number of eight digits divided into two sets of four by a hyphen. The CODEN for the Journal of the American Chemical Society is JACSAT and its ISSN is 0002-7863.

3. For a demonstration of the Sci-Mate system, send a blank diskette to the author.

*Gary Wiggins is Head, Chemistry Library, IU-B.*

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