Engineering Libraries Division Newsletter

American Society for Engineering Education

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Message From the Chair

The most recent meeting of the Extended Executive Committee of ELD was held at the ASEE Annual Conference in Urbana-Champaign in June 1993. One issue which came up for discussion, and one which has surfaced several times in past meetings, was that of an increase in membership dues. This discussion is prompted by a frequently dwindling budget. While the division's literature guides produce some income, that profit is not great. The other source of income is our membership dues. At $1.00 per person, however, our coffers are not usually flush. If they ever appear that way, there is usually a payment waiting to be made. For example, at the present time, our budget shows a balance of approximately $650. Not great, but not terrible. However, our new membership directory comes in at approximately $400, so when that is paid, we really aren't so well off. That leaves us very little money for all those expenses other than the newsletter. If we wanted to spend money for equipment rental or honorariums at the annual conference, we wouldn't be able to do so. I suspect honorarium money will probably never be a feasible option to us as ELD brings to each conference a substantial number of outside speakers. But treating the speakers to a telephone call or a dinner is a minimal gesture which we have not even been able to provide. And now that we usually have several conference sessions where one or more computers are needed for demonstration, it is becoming increasingly difficult to acquire the needed equipment. So far through the outstanding ingenuity of our program moderators, the good will of our host institutions, and the unwavering cooperation of ELD members who bring their own equipment, we have been able to meet the needs of program presenters. But there probably will be times in the coming years when we will need to rent equipment which is not available through previously tapped channels. We will be faced at that time with either not giving a desired program for lack of funds or with limiting our selected speakers to only those who can bring their own equipment.

More next time on the use of our budget. In the meantime, please let me know what you think of a dues increase. Are there other solutions which you would recommend?

Please let me hear from you.

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Also in This Issue...

Reminder About the Homer I. Bernhardt Distinguished Service Award

This is a reminder to nominate someone for the Distinguished Service Award, which I invited you to consider in the September issue of the ELD Newsletter. You still have time to submit a nomination before the January 15 deadline. A copy of the nomination form is included in this issue of the newsletter for your use.

I hope to hear from you.

Raymond Bohling
ELD Awards Committee Chair
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ELD Program Set for Edmonton

Thanks to the hard work of the various session organizers, our division's program has been accepted by ASEE Headquarters with only minor modifications. Unfortunately, our suggested mini-plenary session on NEEDS was not chosen as a mini-plenary, but thanks to the cooperation of our planning group and Headquarters, we were still able to fit it in as a regular session. Here is the schedule for the 1994 conference, listing the date and time, session name, organizer, and the short description which was submitted to Headquarters in September:

Monday, June 27, 8:30-10:15 a.m. Get Acquainted/Rap Session (**Andy Stewart**) - Based on pre-conference input structured by the moderator, engineering librarians raise, discuss, and elucidate current issues and concerns. Broad topics are identified beforehand, handouts are available, and the discussion is guided. Attendees renew former acquaintances and meet new friends.

Monday, June 27, 4:30-6 p.m. Poster Session (**Tom Volkening**) - This session will highlight the activities of particular ELD members over the past year.

Monday, June 27, 8-10 p.m. Just-In-Time: Document Delivery (**Don Richardson**) - Science and engineering journal costs strain library budgets, and libraries have dropped many expensive subscriptions. Do document delivery services offer libraries a way out? Is "just-in-time" access as good as "just-in-case"?

Tuesday, June 28, 8:30-10:15 a.m. NEEDS: Advancing Engineering Education (**John Saylor**) - An overview of the National Engineering Education Delivery System (NEEDS) conceived by the Synthesis Coalition will be presented. It will include a discussion of its development, a demonstration, pedagogical background, and a look at future plans. Cosponsored by the following divisions: Computers in Education, Design in Engineering Education, Educational Research and Methods, and Information Systems.

Tuesday, June 28, 2:30-4:15 p.m. TULIP: Materials Science Journals Online (**Steve Gass**) - Elsevier Publishers in cooperation with a number of universities is experimenting with delivering full-text images of 50 of their most popular materials science journals online. This session will review the progress to date and look at the implementation strategies being employed at Cornell and the University of Michigan. Cosponsored by the following divisions: Computers in Education, Information Systems, and Materials.

Tuesday, June 28, 4:30-6 p.m. Annual Business Meeting (**Cecilia Mullen**) - Discussion of Committee/ Officer's reports and activities of the past year and comments on division goals for the coming year. Open to all ELD members.

Tuesday, June 28, 6:30-8:30 p.m. Annual Dinner (**Steve Gass**) - Members of ELD and their guests gather at a local restaurant for their annual dinner celebration.

Wednesday, June 29, 7-8:15 a.m. Extended Executive Committee Breakfast (**Steve Gass**) - The Executive Committee, Past Chair, Chairs of Committees, and Editors meet to plan the coming year of division activities. This is a closed session for committee members.

Wednesday, June 29, 8:30-10:15 a.m. Internet Update - Gopher, Wais, Archie, and Veronica, the Internet changes daily. How can you keep up? How can the Internet make your students more competitive? This session will give you the highlights of the changes in engineering sources on the Internet. Cosponsored by the

following divisions: Computers in Education and Information Systems.

Wednesday, June 29, 2:30-4 p.m. Accreditation and Standards Committee Meeting **(Karen Andrews)** - This open meeting of the Accreditation and Standards Committee is designed to discuss the committee's recent work regarding the gathering of library statistics and the development of a checklist for evaluating library services.

Wednesday, June 29, 4:30-6 p.m. Extended Executive Committee Meeting **(Steve Gass)** - A continuation of the Extended Executive Committee breakfast. Closed to all but committee members.

I expect that over the next few months the final details of all these programs will be worked out, and I will be able to report to you in a future newsletter who will be the speakers for each of the programs. Also, please remember that our division activities traditionally begin on Sunday with the society-wide picnic. I am working with our division members local to Alberta to make sure we have adequate social content to our meeting as well as intellectual sustenance. Please mark your calendar now for your attendance in Edmonton, June 26-29th. It promises to be a productive and fun time.

--***Steve Gass***, ELD Program Chair

1994 Conference Site:
Is it Really the Frozen North?

Edmonton is the capital city of the province of Alberta and the site for the ASEE and CCEE Annual Conference in June 1994. Edmonton has a population of over 600,000 in a province of 2.5 million people. The "other" big city in the province is Calgary. Alberta is directly north of Montana, and Edmonton is 320 miles north of the Canada/U.S. border.

The November issue of ASEE Prism noted some things about Edmonton to which I would like to draw your attention. The conference begins only five days after the longest day of the year, so the sun rises about 4:30 a.m. and sets about 11 p.m. One side trip not mentioned in Prism which would be an experience would be to proceed up to Alaska or the Yukon, or even to cross the Arctic Circle! However, these are long drives or flights on small planes. A side trip to the Canadian Rockies is definitely in order. A loop can be made from Edmonton to Jasper, through the mountains to Lake Louise and Banff, and then returning through Calgary. Temperatures in June average a high around 70 degrees Fahrenheit or 21 degrees Celsius. The North Saskatchewan River runs through Edmonton and has very pleasant walking/cycling trails.

Edmonton began its life as Edmonton House, a trading post for the Hudson's Bay Company. The name came from Edmonton in Middlesex, England, a suburb of London. The fort was relocated a few times in the vicinity of the city, several times because of severe flooding (one of the sites abandoned due to flooding is a couple of blocks from the home I purchased a year ago in the river valley, so I find the history of flooding particularly interesting). A restored Fort Edmonton is one of the places you could visit while you are here. Edmonton became a city in 1904 and the capital of the province when it joined the Confederation in 1905.

The University of Alberta is a public university and began classes in 1908 with only 45 students. It is located on the south side of the river in what was formerly a rival city, Strathcona. Engineering began in 1913. There are now about 2,200 undergraduates in Engineering and over 400 graduate students. The total student body of the University of Alberta is about 28,000. There are 13 libraries on campus holding 3.5 million volumes, 3/4 million government documents, and myriad other materials. The Library will be opening its off-site storage facility with a capacity of several million volumes in early 1994. The Science and Technology Library includes the main Sci/Tech Library (Cameron Library) and five branches: Computing Science, Mathematics, Physical Sciences, the William C. Wonders Map Collection, and the Canadian Circumpolar Library. Excluding the latter two substantial libraries, the collection is over 500,000 volumes. The libraries serve the Faculties of Agriculture, Forestry and Home Economics; Science; and Engineering, a user group of approximately 10,000. The librarians of the Science and Technology Library look forward to your visit in June.

The conference will be held in the Convention Centre on the north bank of the river. There are eight or nine conference hotels in the downtown area, and arrangements have been made for use of the university dormitories as well. A Light Rail Transit system links downtown to the University, or it is about a 3/4 hour walk.

Edmonton has two airports: an international airport and a municipal airport. It is okay to arrive at either one.

From the International Airport there is an airport bus to the downtown area; from the municipal airport, downtown is a small cab fare. Air Canada and Canadian fly into Edmonton several times per day at each airport. Delta and NorthWest also serve Edmonton at the international airport. Edmonton's two major highways are #2 south, running to Calgary and intersecting with the TransCanada Highway, and #16, running east/west and connecting Jasper to the west (and on to Vancouver) and Saskatoon in the east.

I will continue to provide information about Edmonton for upcoming issues of the newsletter. If you have particular questions, please let me know and I will try to address them personally or through the newsletter. My e-mail address is myoung@vm.ucs.ualberta.ca.

--***Margo Young***, ELD Member and Science and Technology Librarian, University of Alberta, Edmonton

Call for Literature Guide Compilers

Compilers are needed for the following topics: Automotive Engineering, Bioengineering, CAD/CAM, Expert Systems, Food Engineering, Hydraulic Engineering, Polymer Materials Engineering, Safety Engineering, Statics and Applied Mechanics, Superconductors, and Transportation Engineering.

Co-compilers for the following topics are also needed (i.e., someone has begun the work, but feels it is too big a job, or they do not have the necessary access to collections any more): Energy Engineering, Materials Handling, and Ocean Engineering.

Finally, the following guides need to be updated: Agricultural Engineering, Chemical Engineering, Computer Graphics, Engineering Geology, Engineering Management, and Software Review Sources.

If you want to embark on one of these exciting projects, or if you know someone who would be interested, please contact ELD's Literature Guide Subcommittee Co-Chairs **Beth Brin** (University of Arizona, 602-621-6386, blbrin@arizvms.bitnet or blbrin@ ccit.arizona.edu) or **Godlind Johnson** (SUNY-Stony Brook, 516-632-7148, gjohnson@sbccmail.bitnet).

93/94 Membership Directory Now Available

The 1993/94 Directory of Members and Resource Guide was mailed to division members at the end of November. If any current members did not receive their copy, please contact the Membership Directory Editor **Jim Van Fleet**. Unfortunately, the following members in good standing were omitted from the printed directory:

Robert S. Allen
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The electronic version of the Membership Directory has also been updated and corrected, courtesy of **Mel DeSart**. Instructions for accessing the electronic version of the directory are reprinted below from the December 1992 issue of the ELD Newsletter. The directory is available in electronic format via anonymous FTP from a computer at the University of Illinois. Members wishing to access the directory will have to use their local FTP software. If you are not familiar with FTP (File Transfer Protocol), contact your local computer guru for help. Once you are into the FTP software, type:

ftp vmd.cso.uiuc.edu

The system will respond by asking for your sign-on name. Type: **anonymous**

When you sign on under the name "anonymous," the system skips asking for a password, and just leaves you with an FTP prompt. Now you have to access the

subdirectory of VMD which has the ELD Membership Directory in it. To do this, type: **cd desart.192**

You are now in the right subdirectory. Typing either:

dir OR **ls** (depending on what kind of operating system your host computer uses)

will give you a list of the files in this particular directory and who the intended audience is. To latch on to the Membership Directory file, type:

get ELD.MEMBERS

and the file should be zapped to your electronic doorstep. Then, simply type

quit OR **end**

to get out of the FTP session.

Note: The Directory is an ASCII format file, based on a Microsoft Word document saved as "text only with line breaks." If your FTP software assumes BINARY rather than ASCII format, before using the GET command to retrieve the file, you will need to type **ASCII** at the FTP prompt and your system should prepare itself to accept an ASCII file. MOST systems currently have ASCII as a default. If you retrieve the file and it looks like a monkey got hold of the keyboard, try the above step and re-GET the file.

The Membership Directory file will be updated on a regular basis, so feel free to GET another copy anytime you want to make sure you have the most recent information. There is a date in the top left corner of the file, so that anyone GETting a new copy of the file can check it against their old one, to see if it is the same "edition," or if changes have been made and the file updated.

Please send any corrections, comments, etc., regarding the ELD Membership Directory to:

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ELDNET-L Marches On

The ranks of subscribers to ELDNET-L, the Engineering Libraries Division's electronic discussion list, continue to grow. At the Annual Conference this summer, I reported 213 subscribers. That number has now increased to 255, or an average of approximately two new subscribers per week. Traffic on the list has also increased, particularly in the last few weeks, which puts a smile on the face of the Listserv Editor.

I'd like to encourage all ELD members with e-mail access who are not currently subscribed to ELDNET-L to join the list. To do so, simply send an e-note to LISTSERV@ either UIUCVMD or VMD.CSO.UIUC.EDU. Don't type anything in the subject line. The only text in the note should read SUBSCRIBE ELDNET-L YOURFIRSTNAME YOURLASTNAME. You will be sent a short subscription note automatically by the listserv software followed by a slightly more detailed note explaining the purpose of the list and expanding on the functions and commands available for your use.

The comments that I have received from list subscribers (ELD members and non-members alike) indicate that they find ELDNET-L to be both informative and a useful communications tool. But don't take my word for it. Give ELDNET-L a try.

--***Mel DeSart***, ELDNET-L Editor

New Member Biographies

Tim Cole, a relatively new member of ELD (he has been involved with ELD since June 1991, when he helped **Mel DeSart** with a poster session at the ASEE Annual Conference held in New Orleans), has a BS in Aeronautical and Astronautical Engineering (1978) and an MS in Library and Information Science (1989), both from the University of Illinois at Urbana-Champaign. Between degrees he worked as an aerospace engineer, first for Martin Marietta Aerospace and later for the Jet Propulsion Laboratory. Since earning his MSLIS, Tim has been an Assistant Engineering Librarian and Assistant Beckman Institute Librarian at the University of Illinois at UC. He is one of the authors of the client software used by patrons of the University's libraries to access the

statewide online catalog and journal article databases. He is also involved in a number of library automation projects currently underway in preparation for the opening next May of the University's new Grainger Engineering Library Information Center. He is married and with his wife shares a home with a pedigreed miniature poodle and an unpedigreed, not-so-miniature lab-beagle mixed breed dog.

ELD member **Tom DePetro** has a BA in "distributed studies" from the University of Colorado at Boulder (1978). While there he studied primarily German, biology, and chemistry. He spent his junior year at the Friedrich-Alexander Universitaet in Erlangen-Nueremberg, Germany. Tom's MLIS is from the University of Texas at Austin. He worked at the Houston Public Library in the central facility's Business, Science, and Technology Department from 1986-1988. From there he went to the NASA Johnson Space Center in Houston, where he worked in reference from 1988-1989. Tom has been the Aviation and Engineering Librarian at the Wichita State University Library since 1990. He serves the College of Engineering (Aerospace, Electrical, Industrial, and Mechanical) and the School of Business' Aviation Management Program. In addition, he is the de facto special librarian for the University's National Institute for Aviation Research. Tom's interests include BI for engineering, comparative and international engineering librarianship, and the international distribution of technical literature. He is co-author of an article entitled "Bibliographic Control of a Technical Report Series through OCLC Cataloging and Indexing/Abstracting Services," which will soon appear in Cataloging and Classification Quarterly. Tom speaks German, Spanish, French, and "a tiny bit" of Japanese, and is an international short-wave radio enthusiast.

Dena Thomas received her BS in Genetics from the University of California at Davis and her library degree from the University of Washington. Her current position as Science/Engineering Librarian in the Centennial Science and Engineering Library at the University of New Mexico combines "the thrills and chills of reference work, the perils of online searching, the mysterious rites of collection development, and the hair-raising antics of library instruction all in one." Dena also serves as the Patent and Trademark Depository Librarian and selector for the Department of Civil Engineering. Her publications include a review of biographical sources on plant geneticists, reference work in Patent Depository Libraries, and information sources on radioactive waste storage and disposal. Dena is interested in making fuller use of the information contained in U.S. patent collections, and has several reference training projects underway in that area.

Margo Young is Science and Technology Librarian at the University of Alberta, a position she has held for 12 years. Reporting to the Director of Libraries, Margo supervises six librarians and 33 associate staff in the Science and Technology Library. She has a BSc in Chemistry from the University of Alberta and an MSLS from Simmons College in Boston. She has worked in a regional library system in the province, at the University of British Columbia Library, and as a consultant. In January, Margo will be teaching a course on Scientific Information Resources at the University of Alberta School of Library and Information Studies for the second time. In addition, she is President Elect of the Canadian Association of Special Libraries and Information Services, a division of the Canadian Library Association. When she has spare time, Margo enjoys cross country skiing, hiking, scuba diving, and watching baseball. She thanks **Liz Watson** for introducing her to our division!

--compiled by ***Nancy Schiller***, ELD Newsletter Editor

Continuing Competency Among Engineers and Other Professionals

ELD member **Mel Matthias'** Ph.D. dissertation, published as "A Comparative Study of Continued Competence Among Male Members of Selected Professions" (University of Toronto, 1991), looks at how professionals, including engineers, perceive their continuing competence, how they assess it, and the means by which they keep current. As stated in the abstract of the study, 60 male subjects were selected from practicing professionals in the metropolitan Toronto area to represent three professions: engineering, pharmacy, and medicine. Five subjects in each profession were interviewed to represent each of four age categories: 25-34, 35-44, 45-54, and 55 years and older. Matthias used a semi-structured, intensive interviewing technique in interviews that lasted an average of 55 minutes.

The findings of the study revealed a wide variation in the subjects' expressed perceptions of continuing competence. Variations seemed to result from the

subjects' affiliation with their profession's mission, the nature of their interaction with peers or clients, and the career paths in their respective type of work. Feedback from clients, peers, and superiors, and knowledge and practice of acquired skills were two main criteria shaping the professionals' perceptions of competence. In terms of the means by which they kept current, the overwhelming majority of the subjects stated reading.

Subjects were asked how much time they spent on learning activities related to the improvement of skills, performance, upgrading of knowledge, or keeping current. The physicians in the study registered 12.8 hours a week, as compared to 8.4 for engineers and 3.3 for pharmacists. As a sample, the overall average was 8.2 hours per week. The study showed that more than 90 percent of the subjects had taken part in self-directed learning, with this factor contributing 25 to 50 percent to their continuing competence.

The most unexpected answers came in response to the question regarding the most rewarding learning experiences. Not only did the subjects' experiences vary from profession to profession, but there were noticeable variations within each profession and across age groups. However, responses tended to cluster under eight categories: learning and knowledge acquisition; application of knowledge and learning; contribution to the body of knowledge; peer interaction and information exchange; feedback from patients and clients; counseling of patients; reflection; and recognition by peers.

The study has implications for adult education practice and educational theory building. The study's findings provide a better understanding of professionals as a distinct group of learners, which should, in turn, provide program planners with a clearer insight into the professional learner's actual continuing education needs and preferred delivery modes. For theory building, the implications point to the provision of a conceptual model for the participation of professionals in continuing education. It is hoped that an optimum model for professionals' participation in continuing education may evolve in the future from the present model. The study concludes with several recommendations for future research in this area.

Mel is currently preparing a follow-up study which he would like to expand to include a larger number of professionals from both Canada and the U.S. In addition, he wishes to include female as well as male practitioners and perhaps practitioners from other professions such as dentists, lawyers, and accountants. Mel is thinking of using electronic mail to solicit responses rather than in-person, semi-structured interviews. He would like to hear from other ELD members with comments or suggestions on his research or on conducting such research via e-mail. In particular, he is interested in hearing from you about engineering faculty you know who might be interested in participating in such a study. He can be contacted at:

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Next Generation of Internet Tools

Reprinted from a message posted November 24, 1993, by Christinger Tomer, Assistant Professor, School of Library and Information Science, University of Pittsburgh, as part of NAVIGATING THE INTERNET: LET'S GO GOPHERIN', an Internet workshop conducted by Richard J. Smith and Jim Gerland this past fall.

The Limits of Gopher

In terms of the applications developed in recent years to support resource discovery and information retrieval over the Internet, the University of Minnesota's Internet Gopher is arguably the most important development. Part of its importance owes to the scope of deployment; a recent estimate fixed the number of active Gopher servers worldwide well in excess of 1,200. But the larger reason for its importance is the more obvious one--Gopher has made the Internet both accessible and usable for large numbers of users, many of them new users otherwise lacking the means to make extensive use of the resources accessible to them.

Yet, as significant as it has been and remains today, Gopher is in many ways already outmoded. Designed primarily as a document delivery system, it lacks the finer granularity that many users require. Where users were once satisfied, say, to identify the machines on which the latest version of the manual for the Elm mail user agent resides, today they want to be able to query an array of servers and retrieve the relevant sections of

the manual. The availability of the search engine known as Veronica has helped to some degree, but the main problem is that Gopher's designers did not outfit their system with native mechanisms for more sophisticated forms of searching or processing of comparatively more complex document types. (Although release of the software to the Internet community clearly implied a desire for deployment beyond the University of Minnesota system, the fact that the system is based on a simple, hierarchical file system suggests that the designers of the original system did not envision supporting a network of well over a thousand file servers scattered across a global network.) The "Gopher+" enhancements, which rely on transmitting tab-delimited fields beyond those specified by the first generation of Gopher servers and clients, support the retrieval and display of pictures, sounds, and motion video, but the basic Gopher mechanisms remain fairly primitive and inflexible, with the bookmark feature being the only significant option for customizing at the client level.

NCSA Mosaic and the Next Generation of Resource Discovery Tools

However, the next generation of tools is already at hand. Perhaps the most interesting of them is the National Center for Supercomputing Application's Mosaic. Based on the so-called "WorldWideWeb" technologies developed at CERN in Switzerland, Mosaic's developers call it "a distributed hypermedia system designed for information discovery and retrieval over the global Internet" (Marc Andreessen, "Getting Started with NCSA Mosaic," unpublished paper, National Center for Supercomputing Applications). Using the X Window system as its interface, NCSA Mosaic unifies access to various protocols, data formats, and archives, and provides interfaces to external viewers designed to handle display formats other than the X bitmap, e.g., JPEG, TIFF, DVI, MPEG, and PostScript. For example, within the framework provided by a single interface, a user may run a Gopher session, instruct an Archie client to run a search, or retrieve images from the Library of Congress Vatican exhibit.

Mosaic's hypermedia capabilities are derived from the use of the HyperText Markup Language (HTML). Based on the Standard Generalized Markup Language SGML), the ISO standard for internal document description, HTML uses tags to indicate formatting or structural information. One of the structures HTML tags may specify is a link to another document, which may be situated on the same server or located somewhere else on the network. Based on a single directive known in the context of HTML as an "anchor," the tag points to a specific file and provides the basis for a traversable link between the anchor and the file to which the link points.

The operational significance of the embedded "anchors" is that, at least in principle, files located anywhere on the Internet may be linked, and that links may be added or deleted in accord with the requirements of either document designers or end users. As a result, Mosaic is capable of supporting several modes of asynchronous collaboration, including document annotation, document crosslinking, and document revision control. In addition, NCSA Mosaic can communicate directly with Collage, which is NCSA's synchronous collaboration tool intended mainly for use in scientific data analysis and manipulation, as well as NCSA's Data Management Facility, which is a relational database system designed especially for scientific data. (One of the threads connecting Mosaic, the WorldWideWeb, and the Internet Gopher is a scheme for document naming known as the Uniform Resource Locator (URL). The URL has been described as "a networked extension of the standard filename concept: not only can you point to a file in a directory, but that file and that directory can exist on any machine on the network, can be served via any of several different methods, and might not even be something as simple as a file; URLs can also point to queries, documents stored deep within databases, the results of a finger or archie command, or whatever. Perhaps more to the point, the use of URLs and the deployment of a similar scheme for resource naming represent key factors in further regularizing the processes supported by tools like Gopher, WWW, and Mosaic.)

The Near Future

In the near term, we can expect that the Gopher system will be superseded, albeit slowly, by Mosaic and similar applications. Already there are Mosaic clients--in effect, "proof-of-concept" applications--that will run successfully under Microsoft Windows 3.1 and Macintosh System 7. The speed of this transition will depend in large measure upon the capabilities of the local area networks from which clients are launched and the processing capabilities of the computers upon which those clients run. For example, so-called "fast Ethernet" will support transfer rates of up to 100 megabytes per second. Coupled with the next generation of desktop computers, which are expected to be RISC machines, or the equivalent thereof, available network bandwidth and local processing power should be great enough to

support a generation of robust resource discovery/ retrieval tools based on or emulating the X Window interface.

The more difficult question is how long it will be necessary to support the several generations of machines built on the PC AT bus and running versions of MS-DOS. As long as those machines represent a significant factor, and it would seem at this point, given their numbers, the state of the general economy, and the nature of end-user computing that these machines will be a significant factor for at least another five years, the Internet Gopher and other essentially low-end systems will remain a potent factor in this area of network computing.

Accessing the Mosaic Software

Reprinted from a message posted to ELDNET-L, Friday, December 3, 1993, by ELD member **Tim Cole.**

For those who might be interested (but haven't yet gotten around to it), the binary-executable and compilable files are available via FTP to run the National Center for Supercomputing Application's Mosaic program. It will run on a number of RISC machines (using the X Window System), high-end Intel PCs (under Windows 3.1), and Macintoshes. The Windows and Macintosh versions are still a little slow, but they give you a pretty good idea of what the Mosaic interface looks like and how it works. Of course, none of the versions are yet flawless. Bugs are still present, and somebody's always coming up with an unanticipated hardware configuration on which things just don't work right. However, speaking from personal experience with the Mosaic IBM and Mosaic Windows 3.1 versions, I think the interfaces involved are very interesting--they've given us a lot of ideas for the library interfaces we're working on here in Urbana.

(For those who haven't run across it yet, NCSA Mosaic is, according to NCSA, "a networked information discovery, retrieval, and collaboration tool and World Wide Web browser." I think of it as a more natural-language, hypertextual gopher with multimedia features. Whatever you want to call it, it's an interesting take on human-machine interfaces and Internet access that's worth at least looking at if you have the right equipment and a few minutes of spare time.)

The NCSA FTP server is at IP address ftp.ncsa.uiuc.edu (numeric IP address 141.142.20.50), and be aware that it has been extremely busy recently. If you have difficulty transferring files, you may want to wait and try at a less congested time.

For the X Window (RISC) version, you'll find the Mosaic source code and executable binaries in the /Mosaic directory (zipped, of course; be sure you have a current version of PKUNZIP -- most NCSA files were zipped with PKZip 1.10, but some are now being zipped with PKZip 2.04). The executable binaries available are:

Mosaic-alpha for DEC Alpha, OSF/1 version 1.3
Mosaic-dec for DEC MIPS, Ultrix 4.0
Mosaic-hp700 for HP 9000/730, HP-UX 9.01
Mosaic-ibm for IBM RS/6000, AIX 3.2.4, X11R.5
Mosaic-sgi for SGI IRIX 4.0.x
Mosaic-sun for Sun SunOS 4.1.3, linked to system libresolv.a
Mosaic-sun for other Sun SunOS 4.1.3.

For the Windows 3.1 (IBM-compatible PC) version, you'll find the needed files in the /PC/Mosaic directory. If you also need a WINSOCK socket library (DLL), NCSA says there is one in the sockets subdirectory (subdirectory of what they don't really say, but look around in the /PC /Mosaic directory first--I think it's off that one). NCSA recommends an absolute minimum configuration of a 80386SX CPU and at least 4 MB RAM. For decent performance, you should have at least a 33MHZ 80486 CPU, and 8 MB RAM. At a minimum, you'll need to download a file with a name like "WMOS1_0.ZIP," which should unzip to the following files:

WMOSAIC.EXE (the executable)
WMOSAIC.INI (the Windows initialization/configuration
file for Windows Mosaic)
README.TXT
FEATURES.WRI (a MS Write file listing current features)

Note: The exact names of the current .txt and .wri file may vary.

Be sure WMOSAIC.INI ends up in your Windows directory. You may need to edit this file yourself to customize your Mosaic installation. The program also writes to this file on occasion. Before running Windows Mosaic, you must have a WINSOCK 1.1 compliant sockets DLL functioning and domain name serving set

up. We have had good luck with Novell's LAN WorkPlace for DOS and their associated WinSock DLL, but there are lots of other options out there.

Finally, regarding the Mac version, I don't know the exact directory on the NCSA FTP server where the Mac files are. You can poke around and see if you can find it yourself, you can e-mail the mosaic-mac address below, or perhaps somebody who's recently FTP'd the software could volunteer the information. In any event, I can tell you that NCSA says the minimum configuration required is a Mac with system 7 or later, MacTCP 2.0.2 or later (version 2.0.4 or later recommended), and 4 MB of memory. MacTCP is available from Apple as part of the "TCP/IP Connection"; last time we checked, version 2.0.4 could be ordered by phone from Apple (1-800-795-1000). The cost was $59, order number D1785.

When installing the Windows 3.1 version, it helps if you're already familiar with accessing network services and functions from Windows, and in particular with WINSOCK compliant sockets libraries. Once set up, it's a cinch to use. As I indicated, I've only worked directly with Mosaic-IBM and Mosaic for Windows 3.1, and I don't know all the ins and outs of installation for even these two versions.

If you have questions, you're better off addressing them directly to the Mosaic developers. For questions about the X Windows versions, e-mail mosaic-x@ncsa.uiuc.edu. For questions about the Windows 3.1 version, e-mail mosaic-win@ncsa.uiuc.edu. For questions about the Macintosh version, e-mail mosaic-mac@ncsa.uiuc.edu. I'd be interested in hearing people's opinions on the interface. Please e-mail me at t-cole3@uiuc.edu or coletim@vmd.cso.uiuc.edu.

--***Tim Cole***, ELD Member

People & Places

The employees of the **University of Arizona Library** began reporting to their new "team" on October 1, 1993. The library's organizational re-design began in the spring of 1992. The intent was to design an organization which would be more flexible in responding to challenges currently facing libraries, and also be a user-centered organization. The library is presently in a "transition phase" as the final details of the work flow and responsibilities are completed. ELD member **Beth Brin** is a full-time member of the Science-Engineering Team.

The **Purdue University Engineering Library** hosted a day-long patent workshop on November 4, 1993, organized by **Charlotte Erdmann**. Presentations were made by Jim Arshem, Amanda Putnam, and Marie Moisdon of the U.S. Patent and Trademark Depository Library Program. They also presented a seminar for library faculty and staff in addition to a training workshop for library staff.

Norma Godavari has news to share with ELD members as well as several requests for help. Recently she installed Ei's workstation in the **Donald W. Craik Engineering Library** at the **University of Manitoba, Canada**. As far as she knows, her library is the first in Canada to have it. She would like to hear from anyone who has it or has used it or beta-tested it regarding its performance, your promotion of it, any handouts you may have developed for it, etc. You can e-mail Norma at ngodava@bldgeng.lan1.umanitoba.ca or ngodava @cc.umanitoba.ca, or at:

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In addition, Norma has acquired the claims for American and European patents from Micropatent, which she plans to have mounted on the Engineering Building's local area network for dial-up access. Any tips, suggestions, or handouts relating to this endeavor would also be appreciated. Finally, Norma reports that they have just set up their campus-wide information system (CWIS) at Manitoba and each library is developing its section. Norma has been tunneling through Gopherspace in search of examples of good engineering CWIS connections, such as the Gopher at **Cornell University's Engineering Library**. If you would like to recommend others, drop her a line. Norma said she is willing to compile this information for publication in a future issue of the ELD Newsletter.

Kate Herzog, Director of the **Science and Engineering Library at the State University of New York at Buffalo**, has had her review article, "Collection Development and Evaluation in the Electronic Library," published in the Encyclopedia of Library and Information Science, vol. 53, suppl. 16, 1994 (Marcel Dekker).

Jean Poland, Purdue University, has an entry in the latest volume of the Encyclopedia of Library and Information Science (vol. 54, 1994, Marcel Dekker) on "Informal Communication Among Scientists and Engineers." She is also the author of a feature article in the November 1993 issue of Sci-Tech News (vol. 47, no. 4) on "Purdue University's Aviation Technology Library." In addition, Phillip Wankat of Purdue's Chemical Engineering Department, in an article entitled "Learning Through Doing: A Course on Writing a Textbook Chapter" (Chemical Engineering Education, vol. 27, no. 4, 1993), acknowledges Jean's contribution to that course.

LeAnn Weller, formerly at the **University of Kansas Engineering Library,** is now librarian at the **Samuel Roberts Nobel Foundation** in Ardmore, Oklahoma. The Foundation supports on-site agricultural research.

Glee Willis, University of Nevada--Reno, was one of the panelists this past November at the "Driving the Information Superhighway" session at ONLINE '93 in Washington, DC. Her presentation was entitled "Putting the Pedal to the Metal: Practical Advice for Drivers in the Fast Lane." While in Washington, Glee also spoke at the CIA and at Georgetown University.

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Deadline: January 15, 1993

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