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The Newsletter of the Mark O. Hatfield Library, Willamette University

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■ SPRING 1997



Gloriana St. Clair

Third-Party Payer System Explored

By Gloriana St. Clair

UNIVERSITIES FACE A COMMON PROBLEM FROM the rising price for journals, and journal pricing suffers from the dysfunctions of a third-party payer system, one in which somebody other than the end user of the product picks up the bill. This column explores the characteristics of the third-party payer system: an upward push of demand and therefore spending, the possibility of increased conflict among constituents, and the denial of resources to those who have less power.

In the journal system, as in health care, we have witnessed an increasing push of demand and spending. The faculty who write for journals and the commercial companies that produce them have argued that through research, knowledge itself is expanding and that, therefore, journals should expand in number of pages and number of titles — both with concomitant price increases. The vendors appeal directly to these faculty customers. Because the library pays the bills, the customers see little value in economizing. Here are the relative changes in costs:

	1980	1996	% Increase
CPI General	82.4	152.4	85
CPI Medical	74.9	220.5	194
Higher Ed. Index	77.5	167.9	117
Acad. Library Index	78.5	184.4	135

There is no index for journal prices, but their rising cost offers some explanation of why the index for libraries has increased more than that for the remain-

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The New InfoStations:

Bringing Information Into Focus

By Michael W. Spalti

The physical organization of materials in a library reflects the intellectual structure of the information produced by authors and publishers. To novice researchers, however, this underlying structure is often hidden or at best obscure. While the experienced researcher sees in the library an orderly garden of information, the less experienced encounter something more bewildering. The lack of systematic instruction by librarians or faculty in the structure of information and the means of accessing it only makes the situation worse.

This confusion becomes increasingly problematic as the quantity of information spirals, and the challenge of using and understanding printed materials in a local library collection is compounded by the availability of electronic resources. While there are advantages to bringing workstations, software, and the Internet into the research process, this development can further obscure the means by which information itself is created, structured and organized. Some students conclude that research problems arise from a lack of computing skills, not realizing that their difficulties may be deeper, but are nonetheless similar to those encountered by novice researchers of past generations.

Relying upon a technology to solve problems that it has thus far only helped to worsen may seem a dubious exercise, but it is justified, in this case, because it helps to bring the structure of information more clearly into focus. This spring the Mark O. Hatfield Library is phasing in its newly reconfigured InfoStation. Highlighting the structure of information is one of our primary goals as we design this new library interface.

STRUCTURING INFORMATION

Creative research depends in part upon an ability to predict the existence of sources that could help to answer a given question or set of questions. In order to make such predictions, however, students must acquire a conceptual model of the types of resources available. The

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Electronic Access To SCI And SSCI

AS PART OF AN EFFORT TO IMPROVE SUPPORT FOR student and faculty research, particularly in the sciences, the Hatfield library has subscribed to both *Science Citation Index* and *Social Sciences Citation Index* on CD-ROM. Coverage for both databases goes back to 1991.

The electronic versions of these importance indexes bring not only a more user-friendly interface (the print version is exceedingly difficult to use), but also more flexibility in searching.

Searchers will now be able to search by cited author, cited journal, title word, keyword, author, and words in the abstract. The results include full abstract and indexing information, author's address, and full

citations lists for each article. Other added benefits include a related records feature that allows the searcher to link to other records that share citations and full Boolean searching capabilities. ■

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- Rage Against the Machine
- The New Biology
- Project Muse, Part II
- The Electronic Revolution

der of higher education. A look at Penn State's and Willamette's journal expenditures for 1980 and 1996 indicates:

	1980	1996	% Increase
WU Journal Expend.	\$ 74,028	\$ 243,359	+228
PS Journal Expend.	\$674,000	\$4,120,810	+511
No. of Titles (WU)	1,098	1,448	+31
No. of Titles (PS)	17,100	14,500	-15

Conventional wisdom states that the amount of available information doubles every 10 years. Thus, what would be useful for our faculty and students has almost quadrupled since 1980. Even though both Willamette and Penn State are spending a great deal more than previously, the proportion of information available on our library shelves relative to the total scholarly output has decreased.

In the scholarly community, the result has been an increase in conflict among all parties within the system. Scholars have defended their right to continue to create in all their traditional ways, to publish their findings in small increments in multiple outlets and to select the journals they will publish in, to sign away their intellectual rights and those of their universities, and to insist that all the journals they publish in should be owned by the library. Commercial journal publishers have continued to raise prices about four to five times the growth of the general economy, to increase both the size of journals and the proliferation of titles, and have become more and more hostile to librarians and libraries.

The end of this dilemma in the health care arena seems to be the imposition of rationing. Universities find themselves in a like situation. Because of the competition for university financial resources, many grant only a portion of the funds necessary to maintain journal subscriptions.

To mitigate this situation in the scholarly communications system, a reform of the whole system would seem desirable. Such a reform would have to begin with the scholars themselves, who might consider the following points:

- * emphasis on quality, not quantity;
- * joint ownership of intellectual property;
- * university ownership of journals; and
- * electronic information in discipline databases.

If there is no reform in the scholarly communications system, then rationing must continue. Both students and faculty will find fewer and fewer of their information needs met by journals on the home library's shelves — even shelves augmented by electronic access to full text. ■

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A View from the Library

The Virtual Alexandria:

Library Resource Sharing Comes Of Age

By Larry R. Oberg

Librarians have a long and honorable tradition of lending books, not only to their own borrowers, but between institutions as well. History records that as far back as 200 B.C., the great library at Alexandria lent materials to Pergamum. The interlibrary loan services we depend upon today have been in place, and essentially unchanged, for close to a century. Until recently, however, the possibility of moving beyond this useful, if limited, protocol has been hampered by the lack of an adequate technology, fear of decentralized governance, and the persistence of the romantic, yet impossible, dream of building self-contained collections.

Today, the introduction of the new technologies, financial belt-tightening, pressures for accountability, a nearly exponential increase in the cost of books and journals and the availability of foundation and Federal funding for multi-type library initiatives have lessened librarian xenophobia and heightened interest in cooperation. As we work together more closely, resource sharing and, importantly, the coordinated development of library collections, become realistic goals for a consortium, a state, or a region to adopt.

"Despite these caveats, the potential for enhancing the resource base we provide our students and faculty is enormous."



Oregon is a leader in this cooperative movement. Orbis is one model local venture that has attracted national attention. A consortium of 12 academic libraries in Oregon and Washington with collections of nearly four million volumes, Orbis is an attractive option. Participants, and Willamette has been a member since Orbis' inception, share a common catalog and a circulation system. Our students and faculty borrow books directly, either on-line or in person, from the other 11 participating libraries.

The vision is grander, however, than the simple exchange of books. The Orbis Council is weighing other mutually beneficial initiatives, including the provision of electronic journal indexes and full-text databases, improved access to information through the enrichment of catalog records, materials preservation and the coordination of collections. The Council recognizes that coordinated collection development benefits users, reduces costs and unnecessary redundancies and helps to provide a level of information sufficiency that an individual library could not hope to attain.

The cooperative development of a dispersed resource base that serves multiple constituencies is not a new idea. Alaska adopted this strategy to ensure that the information needs of its small, scattered population are met. Other states with strong cooperative programs include Colorado, Illinois, Minnesota, New York and Ohio. Within academia, North Carolina's Research Triangle institutions, and such multi-campus systems as the University of California, have long histories of cooperative collection development.

The University of California enriches its collections by pooling a small percentage of the member campuses' materials budgets. The fund thus created is used for group purchases of desirable, but expensive, materials that individual libraries might not be able to afford. The members decide as a group where these materials are to be housed and the library selected agrees to circulate them to the others without restriction.

The process of coordinating Orbis' shared collections will, no doubt, be a political one. In order to reduce the risks inherent in the process, policy will need to be elaborated and the limits of cooperation defined at the outset. The Orbis Council will move with caution and member libraries will wish to ensure the integrity of their own core collections.

Despite these caveats, the potential for enhancing the resource base we provide our students and faculty is enormous. Orbis librarians have been given a chance to create their own modern library of Alexandria, a virtual library that promises to support an even higher level of scholarship on all of our member campuses. ■

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Rage Against The Machine, Or:

How I Learned To Love The Computer I Gave My Library Job To ...

By Nigel Kerr

These are interesting times for us librarians, as I have found in my four years in the field. Little did I know back in 1993 that I was stepping into a profession that was struggling with its identity and purpose. Little did I know that I was entering a field whose future is fluid and volatile even now. Little did I know that this professional turmoil would define my training, projects, and the work I do today.

Working with the librarians at Willamette's Mark O. Hatfield Library, with other students at graduate school and, finally, with colleagues in my current job, I discovered that librarians are struggling with the definition of their strengths and abilities. In a culture fascinated by and increasingly dependent upon computers and computer-mediated communication and information, what place do librarians have? If we can digitize all of the past information we care about, publish all new works directly to computers, access them from the intimacy of our own homes and offices, build powerful networks to make this all fast and sexy, what do we need librarians for?

When viewed this way, the problem seems insurmountable: if computers can obviate the need for libraries, then what purpose do I and my many thousands of colleagues around the world serve? If we and our collections are to be replaced by astonishingly large data and processing farms, and obscene amounts of bandwidth exploited by the latest killer apps, why do we not all just give up, go home and take up pizza tossing instead? If all the periodicals in my library can live on a hard disk that would fit inside my lunch box, what good am I to any patron with an information need? Man, we are doomed.

But, it seems to me that this would be the worst of all possible ways to consider

what I prefer to call our insurmountable opportunities. If we let the question remain "what good are libraries in a networked information era?" then I submit that libraries and librarians will always lose. Libraries have been our homes for millennia, but they are only our homes, only the tools we work with; they themselves are immaterial in this struggle. If we ask instead "what good are *librarians* in a networked information era?" then we stand a much better chance of living in a future of our own making.

Librarians have hundreds, if not thousands, of years of experience organizing the bolus of collected human knowledge, describing and interrelating what our culture produces and cares about, helping people swim through our information immensity, and doing all of this *on behalf of the patron*. This is what librarians are good at; these are the tasks that we should continue to perform. And, we should consider computers and electronic information as further tools available to us, further languages of expression. Today, we are required to learn new skills and perform a lot of work (a lot of mind-bending work at times). But, we do not have a choice if we are to promulgate our detail, structural, and descriptive sensibilities beyond our traditional realms into our annexed realms. We cannot sit idly by and wait for anyone to ask our opinion; with the constant commentary of the patrons we serve, we must make computers and electronic information our own.

Wandering back into the ancient history of my library career, when I was still an undergrad at Willamette, working as a part-time assistant to the systems librarian, I ran into this idea for the first time. The clearest example to come to mind is the time the librarians saw a need to shape a public computer interface to as many of our electronic resources as possible. We saw the potential to make high-demand electronic resources and even some not-so-high-demand ones (all the weird, useful little oddments that we had accrued as a library, and we wanted to have more, make no mistake) broadly available to the campus, and certainly exhaustively available inside the library itself.

The public computer workstations you see in the Hatfield library today are direct descendants of the first generation of numerous, consistent public computers that the then-systems librarian Sara Amato and I designed and deployed (with the immeasurably helpful support, comments and patience of the rest of the staff). Where we could, we struggled with getting the interface to be as intelligible as possible, to make it as easy as possible for J. Random Patron to figure out which end was up. Where we could not change the interface of the resource in question, we tried to write good documentation. If we had to do it again, it would look very different, because we are always learning more about the way patrons look at things.

Things only got more complicated when I left Willamette to attend library school. My mantra throughout was "How do I get this ?\$@#!^!?! thing to do what I want?" where the thing in question was usually some flavor of computer program or programming language. I spent the vast majority of my time with electronic information organization and structure, and human-computer interaction, but I see these as merely new fields of librarianship. Fellow students and I worked with questions about representing and structuring information electronically so that it is suited to computer manipulation and human creation. What makes for a good search interface, what do we have to know about the people using it, about the nature of the material being searched? How should the electronic resources we design mesh with what already exists, with how people already think about this subject matter? I work today in the electronic texts division of the library at the University of Michigan, where I tangle with insurmountable opportunities of this kind every day. It is fascinating work.

These questions have not been answered, by any stretch of the imagination. Librarians have only just begun asking them, and mass-market computer and information technology is in its infancy. The new library is a problem child that must be raised patiently and exuberantly, with the help and advice of librarians and patrons alike, lest the skills and sensibilities librarians apply to information be lost to mere brute force. ■

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JANE ELIZABETH PATTERSON

Nigel Kerr

Test Of CPS System To Occur This Spring

DURING THIS SPRING SEMESTER, THE MARK O. Hatfield Library will participate in a statewide test of the CPS InterLoan System. A part of the Oregon Information Highway Project, the test is sponsored by the Oregon State Library. CPS is an electronic resource sharing system that enables libraries in a defined region to locate items and submit and fill interlibrary loan requests from other members. The other test participants are the Oregon Health Sciences University, Oregon State University Library, Portland Community College, Portland State University, and the Oregon State Library.

The CPS system includes a central server that manages interfaces and connections between the library automation systems and users, thus integrating the processes of item location and requesting. The server also holds a record of all interlibrary loan transactions for tracking and statistical purposes. The CPS system is platform independent and allows libraries with catalogs manufactured by different vendors to participate.

Requests to borrow will be sent electronically to the lending library, and a hold placed upon the item. The item will then be checked out and sent to the borrowing library, where it will be held for the patron who requested it. ■

Librarian Evaluation Being Redefined

MANY ACADEMIC LIBRARIANS FEEL THAT THEY fall into a kind of no man's land when it comes to their status on campus. They may be considered faculty in name only, rarely feel comfortable with the administrator classification, and are sometimes described by some other descriptor, academic staff, for example, that only serves to indicate that they function in a role that has never been successfully defined. Nowhere is their difficulty more evident than in the areas of evaluation and compensation.

Dissatisfied with the current method of annual evaluation, the librarians of the Mark O. Hatfield Library have formed a committee charged with studying various methods of evaluating librarians and presenting a policy and procedure for evaluation that will more closely suit the needs of professional library staff than does the present method. The committee plans to have this policy ready for review by all Hatfield librarians at the end of the Spring Semester, after which it will be presented to the library administration for approval. ■

The "New" Biology

Can Undergraduate Colleges

By Gary Tallman

Extraordinary changes have occurred since 1950. The World War that was such a pervasive part of people's lives just prior to mid-century is now a fading memory. The postwar economy, rooted in heavy industry, has shifted to an economy of sophisticated technologies that are revolutionizing methods of agricultural production, communication, media diagnosis, treatment of diseases, and transportation. Advances in these technologies promise to fuel the world economy well into the next century.

World-wide expenditures in research and development now total one billion dollars per day, making the pace of

development truly revolutionary. I am astounded to think that television, computers, manned and unmanned space exploration, satellite and digital communication technologies, most pharmaceuticals, and commercial jet aircraft have all been developed within my lifetime.

Indeed, revolutionary developments in science and engineering technologies have been occurring at such high rates and over such short periods of time that it has not been uncommon for several to occur within a science faculty member's tenure. As a consequence, colleges and universities have been struggling to address society's changing expectations of our system of undergraduate science education. Because some of the most revolutionary discoveries ever made in biology have occurred since 1950, this struggle has been particularly evident in undergraduate biology education.

Biology changed dramatically at mid-century when it was discovered that DNA (deoxyribonucleic acid) was the chemical material of which genes are made. Shortly after James Watson and Francis Crick described the molecular structure of the DNA molecule, the mechanisms were deciphered by which the information encoded in DNA is used to make proteins. We now know that, among other things, proteins make our eyes blue, our hair blond, and our bodies resistant to diseases. The number and variety of proteins for which information is encoded in the genes is staggeringly large, influencing virtually every aspect of our being. For the first time, biology has its own technology, one by which genes for individual traits can be isolated and transferred from one organism to another. This "biotechnology" is being used to manipulate genes (a process called genetic engineering) to produce useful protein products for agricultural, medicinal and environmental purposes. For example, at one experimental facility in the East, goats are being "engineered" to carry genes for vaccines against communicable human diseases. After the genes are introduced into their chromosomes, the vaccine molecules are harvested from their milk.

The "new" biology is creating some formidable challenges for those of us engaged in undergraduate biology education. Biology is information-rich because it is process-oriented. Two of the greatest challenges to biology educators are the search for ways to teach undergraduates by engaging them in the scientific research process, and the necessity of managing the enormous amount of information amassed by practitioners of the discipline.

By its nature, the study of biology is borne of curiosity about life. A biologist's curiosity demands satisfaction in the form of experimental investigation (research). Like other scientists, biologists observe phenomena, formulate hypotheses about the mechanisms that produce those phenomena, design experiments to test those hypotheses, analyze and interpret research data, and present their results in the scientific community and to the public. When students of science read the textbooks, they are reading the experimental results obtained by scientists. When they participate in the traditional three-hour laboratory exercise, they are engaging in a self-guided demonstration. As necessary as these curricular elements are to good education, neither gives the student any feel for what scientists actually do, i.e., the process of science.

As an educational community, we became aware of this curricular weakness in the early-to-mid-1970s. That awareness led to a national reform effort aimed at providing research



Gary Tallman

SHAN GORDON

Meet The Challenge?

experiences for undergraduates. At Willamette, the Department of Biology recognized the importance of student participation in research long before it became a national trend. In 1960, a requirement that all students complete a senior project was instituted. Each graduating senior was asked to use the scientific method to perform and report the results of an original research project of his/her own design. When this requirement was instituted, the department was small and biology was still a descriptive science with roots in taxonomy and anatomy. Biologists usually studied things that could be seen with the eye, and much, if not most, of the research conducted was observational.

Times have changed! At mid-century, biology began a metamorphosis from a descriptive to a molecular science with its bases in chemistry, physics and information technology. While there is still a great need for good descriptive biology, most biologists now use the tools of chemistry, biochemistry and physics to answer research questions. Many of the hypotheses formulated by biologists are evaluated indirectly through chemical tests or assays, the theoretical bases of which must be envisioned with the mind's eye, instead of being observed.

What have these changes meant for faculty members in biology departments across the nation? Over the last 35 years, many who were trained in the methods of descriptive biology have been asked to re-invent themselves as cell biologists, biochemists and molecular biologists. At the same time, they have been asked to increase their commitment to engaging undergraduates in meaningful research using the latest technologies. Because the new biology requires the high-tech instruments of chemistry, physics, and computer science, faculty members and their institutions have had to seek extramural funding to build and equip new laboratories. For a college to be competitive for either public or private funding for laboratories, it must demonstrate that its faculty has a history of successful research collaboration with the institution's undergraduates. That history must be documented in the form of presentations of undergraduates at professional meetings, publications with undergraduates in refereed journals, and funded grant proposals.

To develop the necessary track record, faculty members have taken on additional responsibilities for writing grant proposals to secure funding for their individual research programs. This has been necessary because only faculty members have the expertise to write research proposals with the technical detail needed to survive competitive peer review. Competition for available research funds is keen, and the level of a faculty member's research and record of publication must be high to compete effectively. Finally, biologists contribute nearly a half million journal articles to the scientific literature each year. While no faculty member (or student) could or would want to read all of them, the information explosion that has accompanied the development of the new biology has challenged faculty members to master electronic information technologies so that the specific information needed to support their research efforts with undergraduates can be located and retrieved.

Not only biology faculty, but librarians as well have been challenged. Like all libraries, Willamette's Mark O. Hatfield Library can not afford to subscribe to all of the highly specialized journals that contain information of interest to biologists. To meet demand, the Hatfield librarians are investing in powerful electronic research engines that can locate the most recent research literature and retrieve it rapidly through user-initiated, electronic interlibrary loan.

For the last two years, biology has been the most desired major among freshmen entering Willamette University. As enrollments increase, the faculty of Willamette's Department of Biology is challenged to maintain the University's tradition of high-quality teaching and to do publishable research with undergraduates that is worthy of funding. Like faculty members who staff competitive biology programs at many fine undergraduate colleges across the nation, faculty members at Willamette must act as development officers, business managers, and information technologists. We do this because our faculty seeks to develop and secure an infrastructure that is adequate to ensure that present and future generations of students of biology at Willamette will be able to participate in the research process as an important part of their educational experience. ■

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*"By its nature,
the study of
biology is borne
of curiosity
about life."*

Me

Food For Fines Program A Success

DURING THE FINAL TWO WEEKS OF NOVEMBER 1996, patrons of the Mark O. Hatfield Library were invited to pay off their overdue fines with non-perishable food, or have their fine money donated to the Marion Polk Food Share. The Food Share project was a great success. Six large boxes of food and a total of \$221 were donated by the library to the Marion Polk Food Share. The project elicited positive comments from many patrons, as well as a large thank you from the Marion Polk Food Share. ■

Exciting Exhibits On Display

IN RECENT MONTHS, THE HATFIELD LIBRARY HAS continued its efforts to provide interesting and unique displays in the exhibit area on the second floor. Recent exhibits have included Pottery in the Middle East and Islamic Calligraphy, the Art of Collecting, Fifty Years at the Opera: 1946-1996, and Literary History of Gays, Lesbians and Bisexuals. National theme weeks and months have provided further intriguing exhibit opportunities; these include displays for National Women's History Month, National Poetry Month, Banned Book Week, National Children's Book Week, and Black History Month. The display area is designed to showcase visual materials of interest to the Willamette community and includes two free-standing locked cases and several display panels. If you have any ideas or suggestions for a potential exhibit, contact Dayna Collins, administrative assistant, at (503) 370-6312. ■



Virginia Woolf anticipates the spring ...

JENNA GALK

New Print Reference Resources

TWO MAJOR PUBLICATIONS HAVE BEEN ADDED to the library's reference collection. These important reference works were purchased from the Hallie Brown Ford Art fund, the Helen Pearce fund, and the Meyer Memorial Trust grant. *The Dictionary of Art*, published by Grove's Dictionaries, Inc., took 15 years to produce. The word "dictionary" in the title is somewhat misleading — this massive 34-volume work is better classified as an encyclopedia. And a very impressive encyclopedia it is! This resource endeavors to cover visual arts from ancient times to the present and from every civilization. Subjects include painting, sculpture, architecture, photography, decorative arts, performance art and multimedia installations; biographies of artists are included as well. Articles vary in length from short paragraphs to hundreds of pages and include illustrations and up-to-date bibliographies.

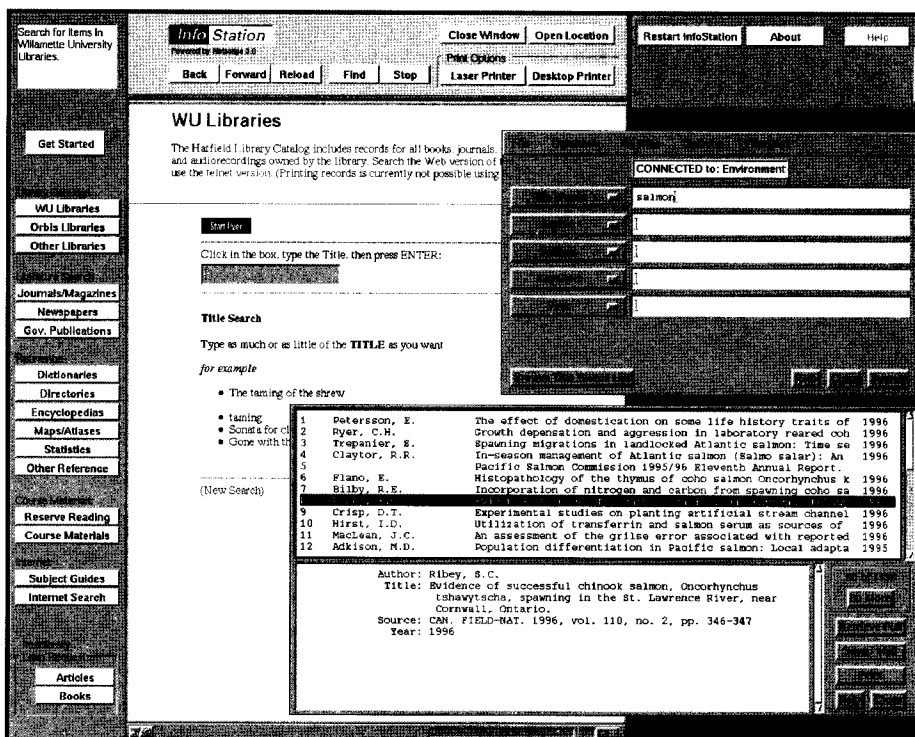
Lexicon Iconographicum Mythologiae Classicae (LIMC) is an encyclopedia of classical mythology and art with articles in English, French, German and Italian. Each volume has two parts, one of text and one of photographic plates depicting vase-paintings, sculpture, coins and medallions. *LIMC* currently consists of seven volumes, and forthcoming volumes will be added to the collection as they become available. This publication supports the University's new emphasis on the classics.

Other new reference resources of note include the *Encyclopedia of Latin American History and Culture*, a five-volume set; the *Oxford Encyclopedia of the Modern Islamic World*, and the *Encyclopedia of Cultural Anthropology*, a four-volume set sponsored by the Human Relations Area Files at Yale University. ■

MOVEABLE TYPE

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An on-screen snapshot of the Hatfield library's new InfoStation

new InfoStation assists them in this process by presenting a model of information resources and by making it easier to explore different types of publications as they appear across the disciplines. Students who use the InfoStation are thus helped to develop their own understanding of the structure of information.

The user of the new InfoStation might click, for example, on a button labeled "Dictionaries" and discover a previously unknown resource — perhaps a biology dictionary, or a dictionary of opera, that is a part of our reference collection. Or, students might learn to consult the appropriate directory when they need to identify companies operating in Oregon or research grants in their field of study. By making these kinds of discoveries easier, the InfoStation creates significant new opportunities for student learning. Students who have discovered a type of resource while answering one question have gained knowledge that may help them to frame and answer future research questions.

INTEGRATING INFORMATION

Integration of information regardless of format is another characteristic of the new InfoStation. Our list of maps and atlases of the United States, for example, provides references to print atlases in the library and links to selected geographic information on the Internet. The library's reserve reading list, or the entire content of the Internet, are equally available from the same InfoStation interface.

It is often useful to move between multiple electronic resources, making simultaneous use of each. This, too, is made easier by the new InfoStation. By choosing "Journals/Magazines," users can, for example, select from a subject list of periodicals indexes, start a database from the list, and consult the library catalog or other resource without interrupting their search of the journal literature. Finally, there is no need to switch software in order to gain access to basic resources. Electronic indexes that require DOS software or a Web browser can be chosen from the same list of resources.

Although this kind of careful integration has been essential in the design of the new InfoStation, the design process has also addressed a number of practical problems associated with bringing this interface into a shared, public environment. Users cannot, for example, minimize or move items on the system desktop. At the same time, they do have the option of printing to either an attached desktop printer or a networked laser printer.

MOVING AHEAD

We view the InfoStation as an ongoing project. Initial contacts with colleagues at other colleges and universities were made when we presented the InfoStation at the CAUSE 96 Conference in San Francisco last December. With luck, these contacts will grow into a collaborative development of similar systems, enriching our own model with the experiences of others. Here at Willamette we will rely upon student and faculty feedback to improve the interface continually. Our priorities, at present, include improving the integration of print and electronic resources into the conceptual design of the interface, and enhancing the graphic look and feel of the system. An overview of the InfoStation, technical information and code are available at hermia.willamette.edu/docs. As always, we welcome comments ... ■

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Project MUSE Among the Oberlin Group Libraries, *Part II*

By Connie V. Dowell and Willis E. Bridegam

The Project Muse negotiation was made possible by another development of the digital age, email. During the course of the Oberlin Group Librarians' discussions of Muse, more than 500 email messages were exchanged. Most of the 72 member librarians and several staff members at the Johns Hopkins University Press exchanged questions, opinions and information about this new technological development.

While Project Muse was a first for the Oberlin Group joint negotiations, more followed. John Kondelik, librarian at Albion College, negotiated a discount for the electronic version of the *Encyclopedia Britannica*. Later, a special price offer for the Chadwyck-Healey data-bases was negotiated by Judith Gibson Noyes, library director at Colgate University.

As a result of Muse and other favorable pricing projects, libraries and computing centers will likely extend their collaborative negotiations. Software, courseware, and hardware purchases, along with telecommunications contracts, Internet access, and leases are some of the areas where such collaboration may be possible. Alliances including consortia, athletic conference affiliations and membership organizations will be used more and more in such negotiations. In addition to pricing negotiations, the alliances will also increase the numbers of joint grant applications, especially in technology areas.

When we plan for our libraries and our scholars' information needs, it is helpful to try to anticipate the future. The following are some planning assumptions that the authors agree will influence librarians' decisions:

RISE EXPECTATIONS: Patrons' expectations for speed and ease of use will increase as will their preference for electronic access over print for most information.

TECHNOLOGY AND THE WWW: Technology will continue to improve and mature. The WWW (with some growing pains) will continue to be the major information vehicle at least through the next decade. Image compression abilities will allow for much more extensive use of graphics. Server technology will also continue to improve. More elaborate workstations will be available to deliver enhanced multimedia options.

LIBRARY AND COMPUTING CENTER MERGERS: Libraries and computing centers will unite to deliver electronic resources more effectively and efficiently. As more electronic information becomes available,

chief information officers will be responsible for all information policy and delivery for their campuses.

Considering the above, the future of electronic journals looks very bright. Here are some predictions:

VIDEO/ANIMATION/AUDIO WILL BE INTRODUCED: Project Muse plans to add these enhancements in the near future. Imagine a film studies article illustrated by clips from the film, or a history article with an audio clip from the speech being cited, or a scientific article where the cellular process is illustrated with animations.

ON-LINE DISCUSSION FORUMS/READERS' NOTES WILL BE ADDED: As electronic publishing develops, reviewers, readers and those being reviewed will be able to debate the critics' comments on-line. Readers can already communicate directly with authors; in the future, all electronic letters to the editor relating to an article can be linked.

THE NUMBER OF LINKS WILL INCREASE: Project Muse currently links certain terms to the Johns Hopkins University Press' Dictionary of Literary Concordances. In the future, links of this kind will be more common. Instead of including a list of titles in a bibliography, each cited article may be linked. A link to the homepage or resume of each author is likely. Data sets and laboratory or experiment notes will add depth to each article.

Several issues facing scholars in their electronic future are not so easily predicted, among these pricing/cost issues and publisher policies. Currently, publishers' pricing and publishing policies vary widely.

Will libraries purchase subscriptions or merely rent the information? Project Muse uses a print model so that libraries own the issues to which they subscribe. Will publishers pass along the cost savings of electronic publishing or retain them? Project Muse has demonstrated clearly that it can be less expensive to publish journals and other information electronically.

Will publishers continue to offer several different options to access information? Will they offer only electronic information, or will they continue to print their information as well? Will they continue to provide licenses

for unlimited use via CD-ROM and/or local tapeloads? Will they continue to provide site licenses limited to specific machines or numbers of simultaneous users? Will user community be defined by domain address or by password access or some other gatekeeping device? Project Muse, for example, defines the community as anyone who has a computer account at a subscribing institution.

Interlibrary loan (ILL) is a time-honored method used by librarians to share books, articles and other resources. Will publishers allow ILL to continue in the electronic world? If so, will they permit loaning of material in electronic as well as in paper format? Will it be economically feasible to build electronic databases of frequently borrowed articles?

While today's faculty are not sure whether they prefer the paper edition or the electronic edition of journals, students wonder why all journals are not available electronically. After all, they have so many advantages:

- Faster publication of research
- Accessibility of research from outside the library/campus
- Better searching capabilities
- Hypertext/Links
- Fewer page restrictions
- Corrections after publication
- Savings in shelf space and binding/ mailing costs

One must also remember that some students do their best work after two a.m., when Project Muse is open but the library is closed. Remembering that Project Muse was only a twinkle in co-founders Todd Kelley's and Sue Lewis' eyes only three years ago as the Internet came into its own, it is risky business to try to see very far into the future. Today's digital world moves so quickly that many librarians (or cybrarians as we are sometimes now called) are wondering where tomorrow's work (beyond the links) will take us. ■

This article is the second of a two-part summary of a talk given by the authors at the American Library Association Conference, College Libraries Section, on July 7, 1996. The first half appeared in the Fall 1996 issue of Moveable Type.

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A Response To Paul M. Gherman:

Can The Electronic Revolution Save Us Money?

By Thomas G. Kirk

Paul M. Gherman has written a provocative article entitled "Can the Electronic Revolution Save Us Money?" (*Moveable Type* 4 (1):8 Fall, 1996), discussing how libraries *might* save money in the world of electronic information resources. In my opinion, however, Gherman's argument is based on two questionable assumptions. He asserts that as libraries move toward the delivery of electronic information at the time of need, the cost of handling and the cost of archiving the libraries' store of information will decrease. I think that claim is wrong.

While it has been widely believed that information in electronic forms will be purchased on an "as needed" basis, there is compelling evidence that such per item purchasing may not be possible for major portions of the resources stored and available electronically. For example, publishers are currently approaching large academic institutions offering electronic access, not to individual titles or articles, but to their entire list of publications, or at least substantial subsets of it. The price often quoted approaches 110 percent of what the library is currently paying for equivalent paper subscriptions.

These block subscription services offer great access, but they do not save the library any money. Furthermore, block subscriptions limit an institution's options because they do not allow the librarians to cut individual titles as the pressures of limited budgets or curricular change require.

A good example of the block subscription phenomenon is the recently announced JSTOR Project. JSTOR provides electronic access to long back files of many important journals. In making this service available, JSTOR has chosen to offer, in Phase I, one hundred titles as

a block subscription. To gain access, a library has no option but to subscribe to all one hundred.

"If we can save money, great. If we cannot, however, then a crisis may be looming on the horizon."



These subscription opportunities promise distributed access and eventual savings on storage and conservation costs, but offer no relief for the library's budget for the year 1998, 1999 or even 2000 (unless, of course, construction of new space for collections currently on the drawing boards can be foregone by subscriptions to large numbers of electronic resources).

Also left out of Paul Gherman's vision of the future of electronic resources in the library are four areas of indirect cost for electronic information: equipment, space for the equipment, salaries for the staff

we require to install and maintain the equipment, and salaries for staff to support users through reference assistance and instruction.

My experience suggests that these four cost centers are rising faster than any savings we are realizing by substituting electronic information for print-on-paper. Perhaps the *library* will save some funds, but, the college or university probably will not, precisely because of the institution's increased cost for computer equipment, furniture, space and support staff.

Whether Paul's opinion or mine is correct is not really the issue. If we can save money, great. If we cannot, however, then a crisis may be looming on the horizon. Academic administrators who are expecting the library to deliver more information at lower costs to all campus locations may be sadly disillusioned and find their libraries badly underfunded.

It is critical to my library and, I think, to all academic libraries, that our administrators recognize the direct and indirect costs associated with electronic information. Let us not start out by arguing that technology will save us money. Instead, we should focus on realistic uses, and realistic cost estimates, of the technology we require to meet our users' needs. If we end by saving money, so much the better. If we do not, we will not have chased an illusory goal and in so doing undermined support for our libraries. ■

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