tion into one's research is still viewed by many as the responsibility of the individual researcher or research team. With some notable exceptions, researchers make use of the services of reference librarians only occasionally, in my opinion, because of researchers' perceptions about their own central role in the entire research process. The established faculty researcher is, in turn, the teacher of the future researcher, perpetuating in many cases the value of self-reliance in the research process, despite its growing complexity and scope of mastery.⁷

One might speculate that despite the lack of clear researcher demand or expectation, the academic research library must accept the major responsibility for managing the increasing complexity of the research process. Rather, I see the academic research library playing a shared role in addressing the greater intricacies of information needs for research. I believe that graduate and professional school programs in all academic disciplines must share in this responsibility as well, through reform in their curricula in order to better prepare students to become effective and adaptable researchers. I believe that the computer centers on university campuses must also play an

⁷See Miksa's discussion of greater researcher self-reliance which occurred in the late 19th century as a result of significant library changes.

important shared role, collaborating with the research library and the various academic departments in tailoring technology to specialized research needs and participating in the preparation of advanced students to acquire the more in-depth research and technical skills they will need.

In conclusion, I believe one must expand the "paradigm of the academic library organization" which Miksa discusses in his paper to the broader vision of the research university. In my view the academic research library should be one important participant in addressing the growing complexities of the research process—working closely with other campus organizations and academic programs, sharing expertise and resources, building on the strengths of the participants (including the library's collection), and, as a group, developing the added services and programs to meet the expanding research requirements.8 Moreover, librarians must thoroughly understand researcher expectations regarding research support from the library, not confusing our perceptions of what the researcher needs with what the researcher values most about the library.

⁸David W. Lewis provides an excellent analysis of the changing academic research library in context in his "Inventing the Electronic University," *College and Research Libraries* 49 (July 1988): 291–304.

The future of reference II: Discussion summary

By William Kopplin

Reference Librarian University of Texas at Austin

The debate following the panel's presentations seemed to keep returning to three central concerns about the new paradigm. One, is the proposed new paradigm valid? Two, if valid, how do the service implications of the new model change the traditional library infrastructure in such terms of staffing, access, and funding? And three, if there are two valid models of academic librarianship, one collection-based and one user-based, where are we now in relation to the two models? While the debate flowed back and forth between these points, the following summary presents the comments in thematic order.

Where are we now?

The first response from the audience immediately lent weight to the validity of the proposed model. Harold Billings, director of the General Libraries, noted that the two models were not necessarily in opposition but only the current endpoints along a continuum. On a map, the General Libraries would be between the two points. The current map is one "freeze-frame" in an ongoing and endless series of "snapshots-in-time." In actuality, the library resides in a very dynamic environment constantly in a state of transition. The library

is moving *towards* the new paradigm, but not moving *to* it. As we approach the model, the model will reshape and change.

A key element of the user-demand paradigm is its transformational qualities. It is very difficult for the library to put in place a system which in effect requires a user to come and use what we visualize as new requirements from them on using the library. This is reminiscent of the story of leading a horse to water with a resistant horse and undefined water.

Billings continued by noting that the new model's transformational nature places critical demands on management. A management system must be put into place that can handle the changing conditions of both end-points. While the library is transforming in its movement towards the model, the library will never give up the collection. The new management structure will likely recall the Columbia library model of the late 1960s of functional bureaucracy. It will definitely not be a flat-paper organizational system. The current strain and conflicts are already moving us away from a hierarchical structure.

What are the implications?

After discussing where academic libraries are currently, quite a few audience members had specific questions about present practices and policies. One librarian wanted to know about the MARC formats and why they were a thing of the past. Miksa responded that MARC was not a thing of the past, but it was clearly inadequate to meet the needs of the future. Miksa reminded the audience that MARC was devised under limited goals. It was largely a spin-off from a manual system. MARC was definitely not adequate for subject searching, or for pulling up parts of whole things, such as conference proceedings and multi-work items. Miksa did not know what would take the place of MARC, but he stated that we tolerate it because we have the collections available in-house. We can go to the shelves and browse to find something. This browsing backup currently covers the deficiencies in our present catalogs. As we move to a more complex and sophisticated system which is not limited by location, we find a growing need to invent an electronic browsing equivalent that will let us search remote resources. We need an electronic surrogate browsing system that allows for the equivalent of directed wandering. Historically, our public card catalogs and early electronic catalogs have not been adequate to accomplish this. As soon as we have translocal collections, a condition we are already approaching, we will need greatly improved search and retrieval capabilities.

One librarian suggested that if there is more than one model of organization, there is probably more than one electronic system that will come about to answer these needs. Miksa agreed. Just as there are now and will always be a great variety of collections, there will be a variety of electronic systems interconnecting and synergizing resources.

One audience member wanted to know about the physical location of reference librarians under the new paradigm. Miksa suggested that there may well be new work patterns corresponding to the new user-driven library. Librarians would have to be much more aggressive in learning about the user. Librarians would certainly need to work in closer physical proximity to researchers. Perhaps they would be assigned to dorms, to academic departments, or to labs or research centers. They might be assigned to a geographical territory, territories which would in all likelihood lay completely outside the domain of the library itself. These remote librarians would act like independent agents, participating in the activities of their assigned territories on a daily basis. Miksa admitted this decentralization of staff may require a substantial increase in personnel.

Hearing this, several members of the audience immediately began to question the funding implications which underlay the new model. There were quite a few suggestions that current library funding was incapable of providing sufficient resources to handle the demands of the old model, much less any of the more expensive demands made by such luxuries as remote librarians. The new model seemed to contain a number of new implied services that experience would indicate to be costly.

While members of the panel reminded the audience that taking money away from the collection in order to improve user access and satisfaction was not heretical, Miksa agreed that user-centered academic libraries would require innovations in funding as well as new patterns of expenditures.

One of the panel members mentioned that libraries are to a large degree locked into the present economic structure. Faculty members are anxious to be published and publishers are anxious to be bought. The strategy of academic subscriptions leads to a vested interest in collecting. The library will never be able to change its collection-building habits until the economic foundation of scholarly publishing is modified to accept new patterns of user demand.

The audience was reminded that there is no justification for doing something just because we have always done it that way. Miksa added that one alternative to this environment of scholarly communication was electronic publishing. Two audience members quickly stated that faculty resist electronic publishing and previous attempts in this area have failed. Miksa admitted this was a technology that was still on the horizon.

A discussion ensued concerning Miksa's suggestion for regional collections as an alternative or

supplement to current academic library collections. One of the paraprofessionals wanted to know if there were any advantages to expanding the system of regional storage as proposed in the model. Wouldn't centralized warehouses have the same drawbacks as those implied in the collectionbased model already in operation in many larger institutions? Miksa replied that part of the funding pressures currently being felt by our research institutions stem from the fact that academic libraries serve as the chief collection agency for all of society. If we were to trade off collection emphasis for user emphasis, we could finance the improved services of the new model. It may be more economical to buy a copy of esoteric materials needed by researchers and give it to them rather than trying to hold onto these difficult-to-control materials in ever more expensive collections. Where was the efficiency in the repeated collecting and cataloging of never-asked-for material?

The topic of storage brought up the subject of weeding. Audience members wanted to know what was the cutoff age in determining whether material should be retained in a local collection. There was clearly a great variety of opinion on this point. The problem seemed to be a lack of agreement in the definition of use. One of the panel members stated that the new paradigm might be more applicable to public or special libraries than to large research libraries.

One of the special librarians quickly questioned the access to regional collections. If academic libraries were to become the middleman in a supplier formula linking regional storehouses to researchers, who would be responsible for the systems necessary to ensure accurate and timely access? The electronic systems for searching and retrieval already discussed at several points in the debate would need to be administered and housed in some fashion. Where would they reside? Would future academic libraries be a collection of systems instead of paper?

The question of "residence" of our current developing information systems as well as the more sophisticated ones required by the proposed usercentered model was obviously a thorny one for both the audience and the panel. The systems analysts participating in the debate clearly had an advantage over the other audience members in visualizing the probable functions and potentials of future systems. The difficulties of creditably analyzing the unforeseen future were substantial. The possible and visionary systems of tomorrow were left somewhat undefined.

Is it valid?

The sharpest criticism of the proposed model stemmed from the remarks of one of the branch

librarians who drew an analogy from a current academic library to a biological organism. To live, or to function, a system, whether it is biological or informational, must have diversity and redundancy. Library users need that same diversity and redundancy when creating new ideas through the pursuit of research. In biological terms, that may mean a reservoir of genetic traits which can be recombined in response to the needs of the environment in an endless string of physical expressions. In informational terms, it would follow that patrons would need a reservoir of materials to draw upon in response to their needs—a reservoir, or collection, which wouldn't presuppose the need but would rather rely on the strength and assuredness that comes from having the depth of background to respond to any situation. Just as an excess of genetic possibility may confer an advantage to a biological organism, an excess of collection may assure the success of an intellectual inquiry. The elements of chance and serendipity may well play a pivotal role in determining the outcome of an informational exploration, particularly when quality is measured as well as quantity.

Introducing the topic of serendipity into the discussion caused a few members of the audience to relate personal experiences they have had with patrons. Another branch librarian sketched out for the audience the locally produced new serials list which helped keep the heavy browsers in that collection from over-browsing. One member noted that browsing was an important tool in the arsenal of reference skills, a tool that can certainly contribute to the confidence level of the reference librarian.

Continuing the genetic analogy, members of the audience suggested that if some of the threads of the proposed model were followed, user-centered libraries would all be clones of each other. Simple, flat, use-driven need would result in linear collections of non-interrelating materials. The resulting collections would be unable to provide the sense of unearthing new insights. The lack of diversity would stifle discovery and creative thinking. Voiding this purpose would seriously question the role of the large collection. These dimensionless user-collections would not have the necessary biological "viability" for long-term survival.

Miksa concluded by reminding the audience that he wasn't proposing to get rid of the collection. His paradigm of organization only started its focus from the perspective of users' needs. It was built on filling those needs in the fullest meaning of the term. User satisfaction would be the ultimate measure of a library's success. If the tenets of the new paradigm were followed, there may be more efficient and more economical library services. Services with faster delivery times and thus more satisfied users.

It was perhaps to be expected in a room full of bibliographers and other academic librarians that an open broadside against many of the most traditional suppositions behind the classical collectionbased model would be rigorously examined. It was. The debate continued well after the scheduled end of the program. It was a tribute to the substantive nature of the presentations that the debate was lively and continuing. The new paradigm challenged the audience's established notions of purpose. Without providing the ultimate conclusion, the participants were in agreement that the exploration was valuable in itself. The audience left rejuvenated.

Letters

College library leaders

To the Editor:

I read with a great deal of interest the recommendations on how to develop college library leaders of tomorrow (C&RL News, July/August 1989, pp. 573–74). I've long been interested in ways to strengthen library leadership. Despite the attention that has been focused on leadership, one of the most frequently heard laments at conferences is, "Where will the leaders of the next generation come from?" The answer is, if we are to succeed, they will come from within the current ranks of practitioners. We all have a stake in the future and therefore we must all continue our commitment to career development, particularly of those who will someday assume the reigns of leadership.

With regard to the specific strategies included among the recommendations, such as internships, programs for new directors, creating an environment for growth and providing practitioners with a broader perspective, I would like to emphasize the importance and benefits of keeping abreast of new developments in the literature. An informed professional is more valuable to an organization than one who is not informed.

Some libraries are already helpful in this regard, but many do virtually nothing. My own career, particularly in the earlier years, benefited greatly by being informed about what was happening in technical services and library automation. Keeping track of reviews helped me to pinpoint books that I might want to scan more thoroughly, even if there was not time to read them meticulously. My point is that a well-informed professional is better able to interact with other practitioners as well as with officials outside the library profession. Over time readers will build a solid foundation that will serve them well when the opportunity to assume a position of leadership arises.

The costs of purchasing professional literature can become a financial burden for someone new to the profession. That is why I suggest libraries help their staffs by taking a more direct role. Libraries will be served by such an investment.—Richard M. Dougherty, Editor, Journal of Academic Librarianship, University of Michigan.

Bravo for booksellers

To the Editor:

I want to express my appreciation to a lovely gentleman and bookseller, John W. Todd of Shorey's in Seattle. A few weeks ago, the University of Michigan Graduate Library's Circulation Department received a call from Mr. Todd's shop. Someone had inquired whether Shorey's might be interested in old leather books from a father's estate. Upon examination, they proved to have belonged, once upon a time, to the University of Michigan Library and it was not clear from the way the volumes had been handled that they had been withdrawn by us.

The short, sweet ending to this slightly convoluted tale is the recovery of 50 volumes, all handsomely bound, some scarce, one quite rare. In this age of finger pointing and name calling among publishers and booksellers and vendors and libraries, I wanted to offer a public word of appreciation for the professional and careful way in which Mr. Todd and his staff at Shorey's handled this matter.—L. Yvonne Wulff, Assistant Director for Collection Management, University of Michigan.

Better humor through chemistry

To the Editor:

Norman Stevens in C&RL News, June 1989, p. 482, asks for more evidence that chemists and chemistry librarians have a good sense of humor. The classic work on this important subject is John Read's Humour and Humanism in Chemistry (London: G. Bell, 1947).—Philip J. Weimerskirch, Special Collections Librarian, Providence (R.I.) Public Library.

To the Editor:

I would like to respond to Norman Stevens's challenge to science librarians. I am a firm believer that humor is important for all workplaces, not just libraries. I have 13 years of medical and $2^{1/2}$ years of marine science professional library experience, which certainly qualifies me to be identified as a science librarian. I hope Mr. Stevens and other CGRL News readers got a smile, or maybe even a



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library can guarantee the long-range success of its automation system. CAMPUS-WIDE NETWORKING, for example, as well as the ability to access off-campus data sources, requires careful adherence to automation communications standards. Data Research's use of Ethernet and DECnet/OSI provides you with that power now. SUPPORT OF YOUR CHOICE of workstations from a wide variety of vendors is also possible using ATLAS—A Total Library Automation System from Data Research—because of our support of communications standards. SPECIALIZED DATABASES can be easily built, fully indexed and even made available through the Public Access Catalog because of our use of full-MARC bibliographic and authority records. What's more, Data Research has committed to support the emerging NISO Common Command Language standard for PACs, ensuring that ATLAS users will be at the forefront of tomorrow's movement toward simplified interlibrary resource sharing. WITH FULLY INTEGRATED modules for cataloging, circulation, PAC, acquisitions, materials booking, reserve book room, full-text database searching and a wide range of other services, ATLAS offers academic libraries the most powerful functionality in the industry. Call us today to find out how this power is flexible enough

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laugh, from my article on the applications of Murphy's Law in libraries, "Murphy, Parkinson, and Peter: Laws for Libraries," *Library Journal* 113 (October 15, 1988): 37–41. Those colleagues who wrote to me after the article was published cer-

tainly commented on the humor, and truth, of the article.—Jean E. Compton, Head Librarian, Hancock Library of Biology and Oceanography, University of Southern California.

Microcomputer software for bibliographic instruction statistics

By Candace R. Benefiel

Humanities Reference Librarian Texas A & M University and Joe Jaros

Instructional Services Librarian Texas A & M University

How to streamline your procedures for keeping BI records using spreadsheet software.

hile bibliographic instruction (BI) is a major project at most academic libraries, statistics gathered concerning BI programs are usually manually compiled, a time-consuming process which often yields only basic totals. More complete statistical outlines of BI activities are essential in providing a clear picture to library and university administrations not only of the quantity of BI activities, but also, over time, of the quality of these activities. Statistical records and analyses may be used to indicate quality in a variety of ways, such as ongoing requests for specific presentations. Even a simple compilation of a BI program's activities, such as a listing of the classes receiving library instruction, will show the number and type of classes and students being reached through varying methods of formal presentation.

Statistics will also enable the librarian to chart more accurately the growth and development of an instructional program and should suggest areas for future concentration of effort. In addition, these records reveal whether the program is geared more toward basic instructional sessions such as tours and classroom lectures, demonstrations of new services, particularly those relating to automated access to library materials, or individual sessions. A detailed knowledge of the program's current content will aid in correcting present problems or imbalances and in determining future needs, directions and emphases. Staffing decisions, always a major area of concern in planning any program, should be aided by verifiable charting of peak times of activity over an extended period.

Although many of the basic patterns of usage are self-evident, especially to the experienced BI librarian, who has observed and coordinated BI activities over several years or more, often these trends are not as apparent to administrators, particularly those outside the library. It need hardly be stated that an administrator, whether at library or