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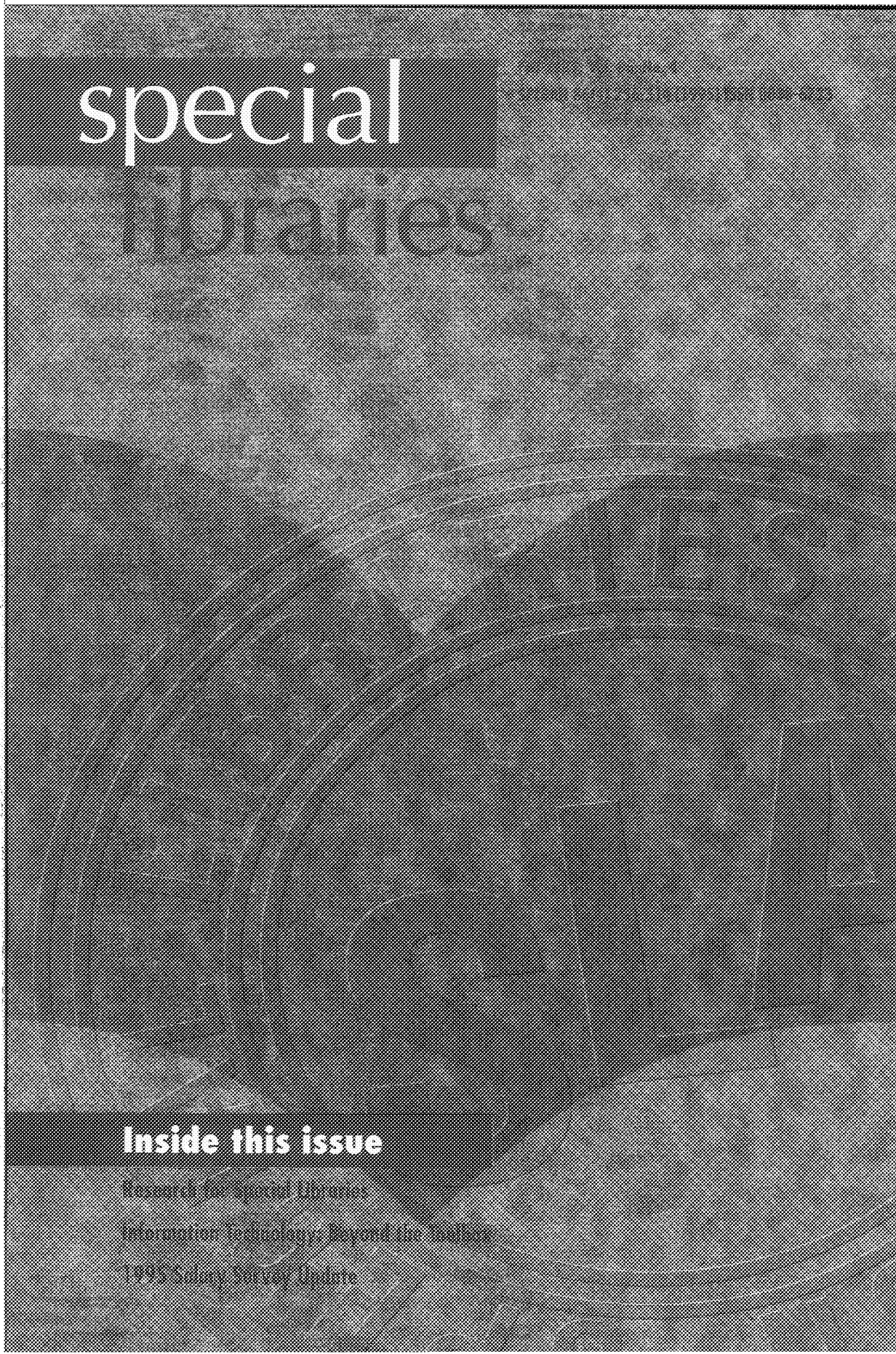

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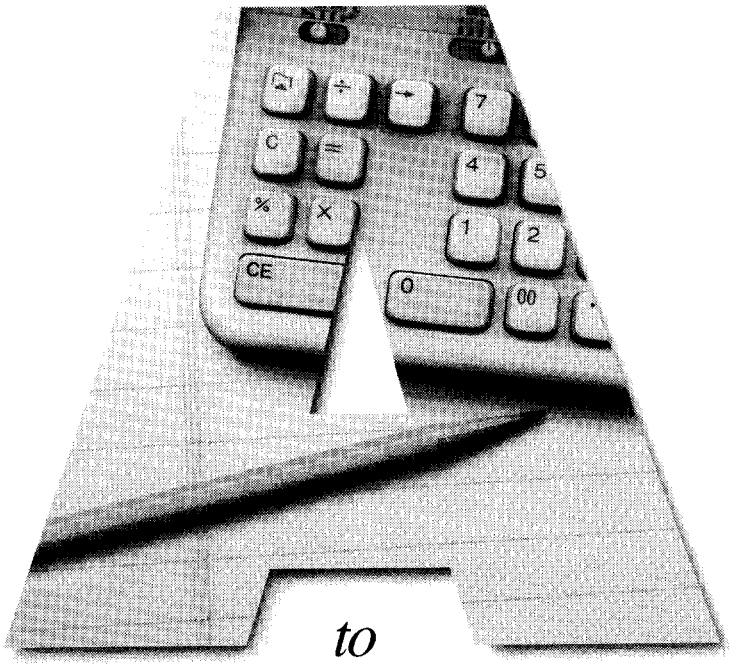

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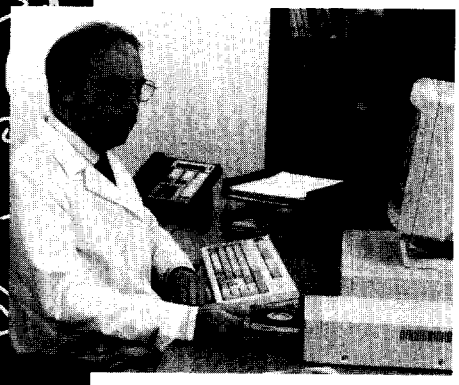

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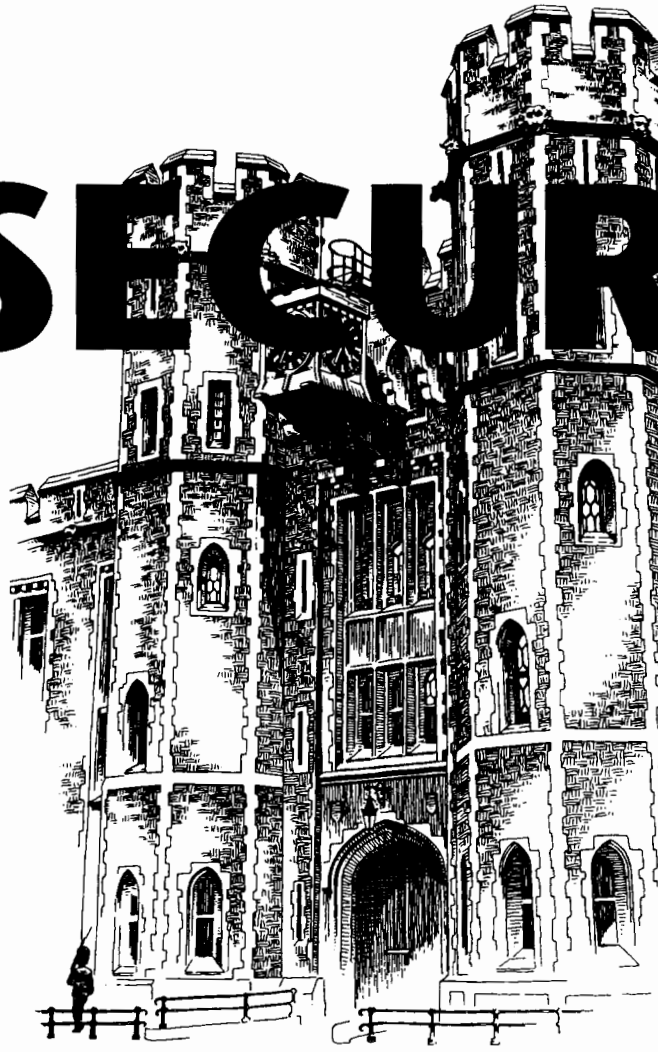

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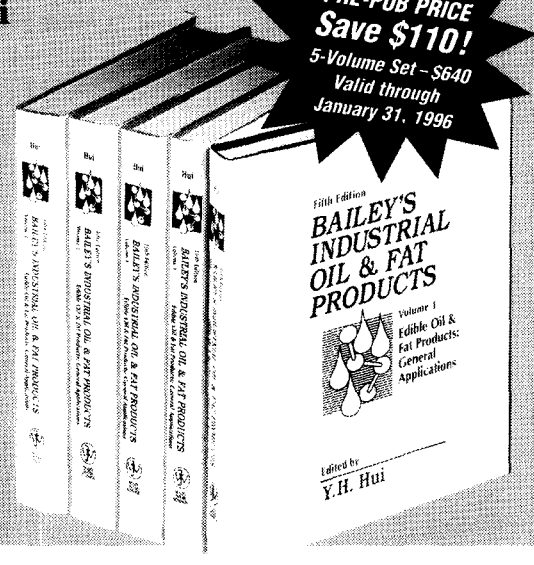

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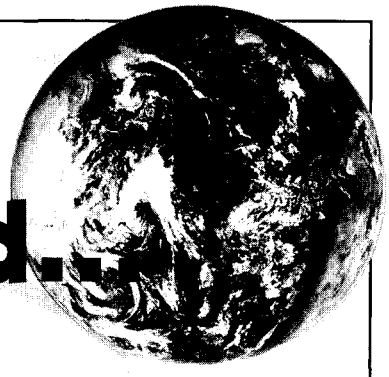

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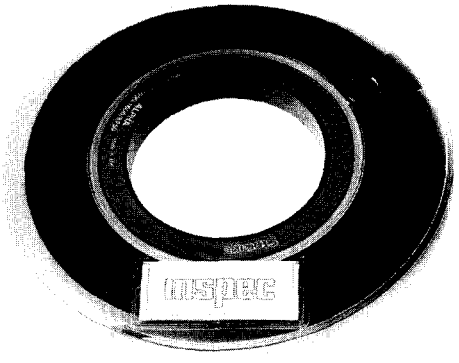

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On the Scene

special libraries

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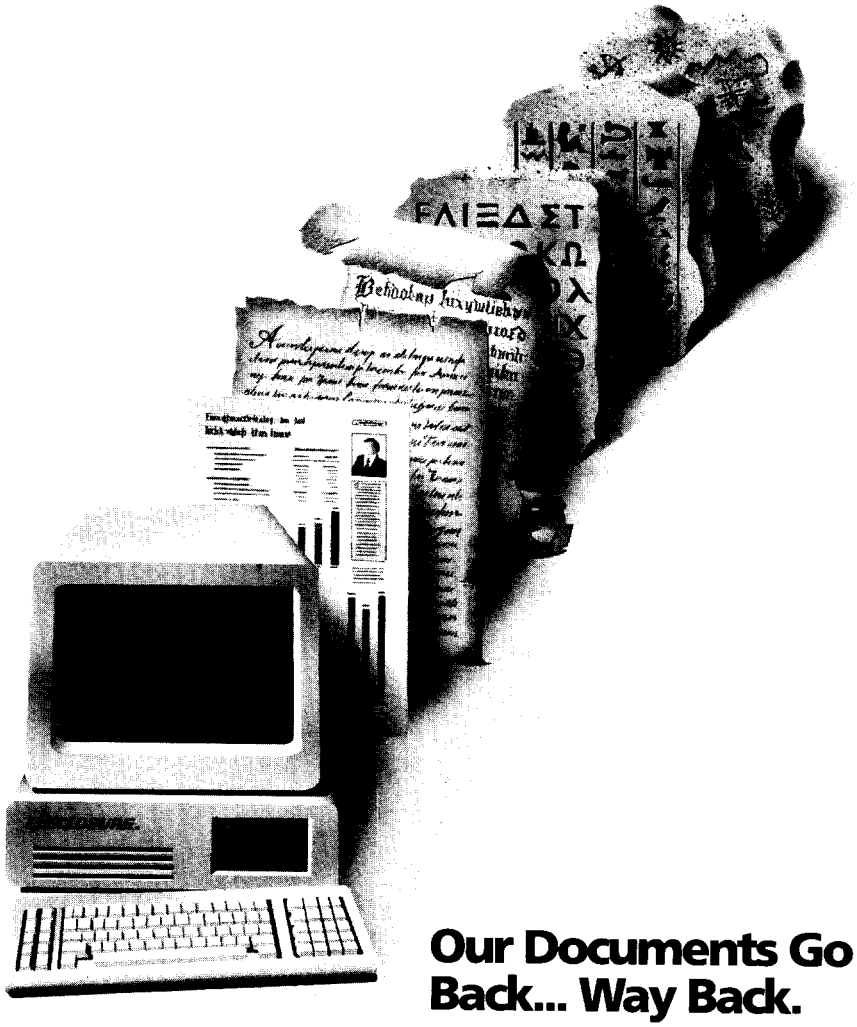

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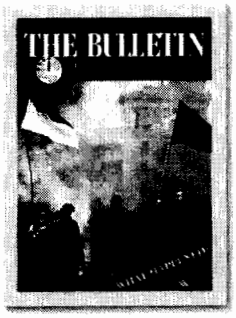

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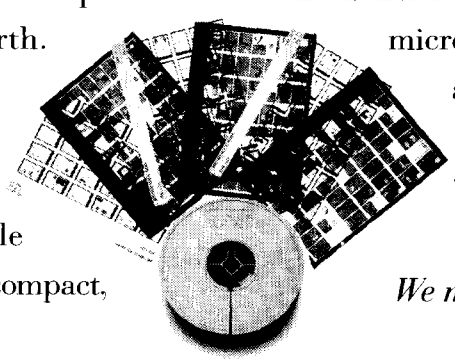

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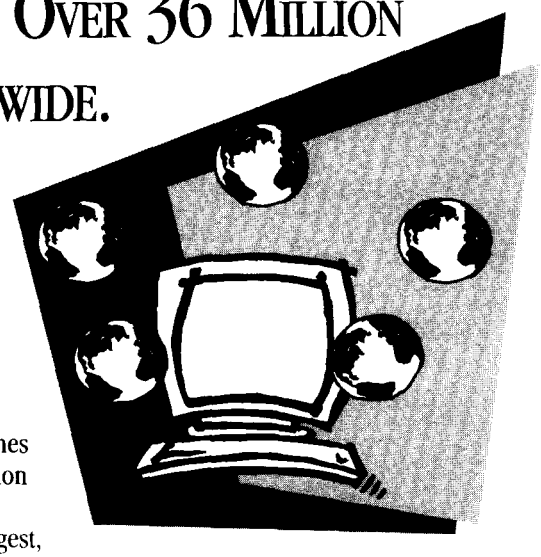

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Research for Special Libraries: A Quantitative Analysis of the Literature

by Alexandra Dimitroff

Cet article relate une analyse de ce que renferment les écrits des bibliothécaires spécialisés. Les sujets traités incluent ce que les bibliothécaires spécialisés ont publié, ce que couvrent les écrits des bibliothécaires spécialisés, quelles recherches sont rapportées dans les écrits par les bibliothécaires spécialisés et qui fait ces recherches. L'article compare cette analyse à des analyses de contenu antérieures de la documentation des LIS (Systèmes informatiques pour les bibliothèques). Il se révèle que moins de 20% de la documentation des bibliothèques spécialisées donnent des compte-rendus sur les recherches ; les recherches qui sont rapportées emploient des méthodes moins sophistiquées que les recherches générales des LIS, et elles s'adressent le plus souvent aux sujets d'applications.

Este artículo informa sobre un análisis del contenido de la literatura de la biblioteca especial. Cuestiones tratadas incluyeron lo que se publica por bibliotecarios especiales, qué sujetos se cubren en la literatura del bibliotecario especial, qué investigaciónes se informan en la literatura del bibliotecario especial, y quién conduce la investigación. Se hacen comparaciones con previos análisis del contenido de la literatura de LIS (Ciencia de bibliotecas e información). Se determinó que menos del 20% de la literatura de la biblioteca especial informa sobre investigación, la investigación que se informa usa métodos menos sofisticados que la investigación de LIS en general, y los temas aplicados son los más frecuentemente tratados.

This article reports on a content analysis of the literature of special librarianship. Questions addressed included what is being published by special librarians, what subjects the literature of special librarianship covers, what research is being reported in the literature of special librarianship, and who is conducting this research. Comparison is made to previous content analyses of the LIS literature. It was found that less than 20% of the literature of special libraries reports on research, the research that is reported uses less sophisticated methods than the general LIS research, and applied topics are the most frequently addressed.

The increasingly important role that information plays in society has dramatically changed the environment in which information professionals work. To be effective special librarians, we must understand our information environment as well as the impact of society's shifting foci on our work. We must, as Miriam Drake wrote, "gain a greater understanding of [our] clients and their interaction with content, data, graphics, and information systems. [We need to] understand the value of information in the company, government, university, and the economy. Most importantly, a special librarian needs to learn how an information center can contribute to the achievement of the goals of the parent institution—goals which will become increasingly information-based."[1]

In 1989, the Special Libraries Association's Board of Directors affirmed the importance of research to our field by establishing the SLA Research Program, including the formation of a standing Research Committee, setting a research agenda, and supporting research re-

lated to special librarianship through the Steven I. Goldspiel Memorial Research Grant, among other grant programs.[2] SLA's efforts to support research for and by its membership are described by Matarazzo up to 1991.[3] Matarazzo describes a resurgence of interest in research by SLA but what remains to be seen is how this has engaged special librarians and others with interests in special librarianship, if at all. With research as a stated priority of SLA and other professional associations, little is known about research activities of special librarians. This fact, combined with this writer's experiences on SLA and MLA research committees, has resulted in the project described here, the goal of which was to examine current research activities of special librarians. The study described in this paper is the first phase of a two-part project which will **quantify** current research activity and knowledge among special librarians. The purpose is to gather data

Table 1

Descriptive Statistics for all Articles

Variable	All Articles (n=277)	Research Articles (n=53)
Number of authors		
(Mean for all articles=1.4, for research articles=1.5.)		
1	194 (70.0%)	34 (64.2%)
2	66 (23.8%)	13 (24.5%)
3	10 (3.6%)	5 (9.4%)
4	3 (1.1%)	0
5+	4 (1.4%)	1 (1.9%)
Number of pages		
(Mean for all articles=8.4, for research articles=13.0.)		
1-5	121 (43.7%)	16 (30.2%)
6-10	97 (35.0%)	19 (35.8%)
11-15	30 (10.8%)	3 (5.7%)
16-20	15 (5.4%)	7 (13.2%)
21+	14 (5.1%)	8 (15.4%)
Number of citations		
(Mean for all articles=7.6, for research articles=12.0.)		
0	99 (40.1%)	8 (15.1%)
1-5	44 (17.8%)	9 (17.0%)
6-10	48 (19.4%)	12 (22.6%)
11-15	21 (8.5%)	6 (11.3%)
16-20	6 (2.4%)	3 (5.7%)
21-25	9 (3.6%)	2 (3.8%)
26-30	8 (3.2%)	3 (5.7%)
31-40	6 (2.4%)	1 (1.9%)
41+	6 (2.4%)	3 (5.7%)

that may be useful in targeting resources to specific groups and/or programs in support of research that will assist special librarians in their work.

Specifically, the project described here was undertaken to describe, analyze, and evaluate patterns of research activity as reflected in the journal literature of special librarianship. Four research questions guided the work:

1) What is being published by special librarians in the journal literature?
2) What subjects or topics are addressed in the journal literature?
3) What percentage of the literature reports on research activities?
4) Who is conducting this research and how are they doing it?

In addition, some bibliometric characteristics (e.g., number of pages, number of authors, number of citations) of the literature of special librarianship were identified and compared with the literature of library and information science in general.

Table 1, continued

Descriptive Statistics for all Articles

Variable	All Articles (n=277)	Research Articles (n=53)
Institutional Affiliation		
Academic health sciences	71 (25.6%)	18 (34.0%)
Academic special	51 (18.4%)	8 (15.4%)
Nonprofit/association	50 (18.1%)	8 (15.4%)
Corporate	32 (11.6%)	2 (3.8%)
Hospital	26 (9.4%)	7 (13.2%)
LIS school	17 (6.1%)	6 (11.3%)
Academic law	16 (5.8%)	3 (5.7%)
Law firm	2 (0.7%)	0
Non-library	12 (4.3%)	0
Continent		
North America	174 (62.8%)	32 (60.4%)
Europe	68 (24.6%)	11 (20.8%)
Asia	18 (6.5%)	6 (11.3%)
Africa	10 (3.7%)	1 (1.9%)
Australia/New Zealand	4 (1.4%)	1 (1.9%)
Middle East	3 (1.1%)	1 (1.9%)
Type of Journal		
General LIS	131 (47.3%)	19 (35.9%)
Type of library-specific	96 (34.7%)	27 (50.9%)
Special Libraries	37 (13.4%)	4 (7.5%)
Other journal	8 (2.9%)	1 (1.9%)
Not published in a journal	5 (1.8%)	2 (3.8%)

Methodology

Content analysis was used to extract the data for the study. Content analysis is used to identify and record the meaning of documents and other forms of communication in a systematic and quantitative way.[4]

Online searches of ERIC, Library and Information Science Abstracts, and Library Literature were conducted to retrieve citations to articles of specific relevance to special librarians. While it is understood that any article discussing a library or information science topic is of potential interest to special librarians, this study examined only those articles addressing issues and topics that are unique to specialized information environments. To retrieve these articles, a search strategy was formulated that included all types of special library or information centers (i.e., medical, theological, sci/tech, among many others) as well as all articles published in special library journals (e.g., *Special Libraries* or *Health Libraries Review*). Because this study was to describe the current state of research in special librarianship, retrieval was limited to articles published in 1993 or 1994. No restrictions were made in terms of place of publication. Master's theses, book reviews, editorials, and reports of professional meetings were eliminated. A total of 277 citations were retrieved.

Descriptive data were collected on all of these articles, including the type of article. Because articles describing research were the focus of the study, an explanation is warranted regarding how research papers were identified.

Previously reported studies of research in library and information science provided the operational definition of research. The definition used in the first of these studies has been employed by subsequent research and was used here. This definition states that research is an inquiry which is carried out . . . by a systematic method with the purpose of eliciting some new facts, concepts, or ideas.[5] Using this definition, 53 (19.1%) of the 277 articles were categorized as reporting on research activity.

Each article was coded concerning number of authors, institutional affiliation of first author, country of first author, total number of pages, total number of citations, type of journal, subject, and, as mentioned, type of article. In addition, data were gathered regarding methodology, research environment, data collection technique, and analysis technique for all research articles.

Table 2

Type of Article by Author's Institutional Affiliation

	Research n(%)	Description n(%)	Position Paper n(%)
Academic health			
Sciences	19 (35.8)	41 (26.1)	11 (16.4)
Academic special	8 (15.1)	33 (21.0)	10 (14.9)
Nonprofit/association	8 (15.1)	34 (21.7)	8 (11.9)
Corporate	2 (3.8)	14 (8.9)	16(9.0)
Hospital	7 (13.2)	15 (9.6)	4 (6.0)
LIS school	6 (11.3)	3 (1.9)	8 (11.9)
Academic law	3 (5.7)	9 (5.7)	4 (6.0)
Law firm	0 (0.0)	2 (1.3)	0 (0.0)
Non-library	0 (0.0)	6 (3.8)	6 (9.0)
	53 (19.1)	**157 (56.7)**	**67 (24.2)**

For two variables, subject and research methodology, categories used in the Feehan study cited earlier were used.[9] This allowed comparison between the two studies. All data were coded and entered into a machine-readable file. Analysis of the data was performed using Minitab statistical software.

Findings

Bibliometric Characteristics of the Special Library Literature

The typical article concerning special librarianship is written by one author, is 8.4 pages long, and has seven citations. Detailed descriptive data for all articles examined are presented in Table 1.

The majority of articles examined in this study were written by one author (194, 70%). These authors come from a variety of special library environments. The most prolific group in terms of publishing are academic health science librarians, who were responsible for 71 of the 277 articles (25.6%). The next most frequent author affiliation was academic special librarians (50 articles, 18.4%) and those working in nonprofit institutions or associations (50 articles, 18.1%). Librarians employed in the private sector contributed 32 articles (11.6%), an understandably lower percentage given the priorities of working in corporate institutions. Not surprisingly, special librarians employed in academic institutions (academic health sciences libraries, academic law libraries, and special collections in academic libraries) contributed close to half of all of the articles (138, 49.8%) and more than half of the research articles (29, 54.7%). Because many academic librarians must meet tenure and promotion requirements that include publishing, it was expected that librarians working in academic institutions would publish more.

North American special librarians contributed 174 of the 277 articles (62.8%), although librarians from around the world were represented, as shown in Table 1. This diversity confirms the internationalism of special librarianship.

Most articles appeared in the general library and information science literature (131 of 277 articles, 47.3%). Titles such as *Library Trends, Library and Information Science Research,* and *Library Quarterly* are examples of titles in this category. Ninety-six articles (34.7%) appeared in journal titles devoted to specialized library environments (e.g., *Bulletin of the Medical Library Association, Law Library Journal* and *Science and Technology Libraries*). An additional 37 articles (13.4%) appeared in *Special Libraries*, the primary title addressing special library interests. Of research articles, more were published in library-specific journal titles (27 articles, 50.9%) than in any other type of journal.

Types of Articles and Subject Interests

Most articles were descriptive in nature (157 of 277 articles, 56.7%). Position papers

Table 3

Distribution by Subject

Subject Classification	All Articles (n=277)	Research Articles (n=53)
Applied topics	162 (58.5%)	36 (67.9%)
Professional concerns	53 (19.1%)	9 (17.0%)
General	17 (6.1%)	5 (9.4%)
Theoretical	8 (2.9%)	3 (5.7%)
Related fields	3 (1.1%)	0 (0.0)

(supported or analytical essays) comprised 23.8% of the articles (66 articles), and less than one-fifth of the articles reported on research activities (53 articles, 19.1%).

Table 2 displays data related to the type of article and the institutional affiliation of the first author. The distribution among type of article is similar to the distribution by institutional affiliation, with academic special librarians (in medical, law, or other academic special library) contributing the largest percentage in each category.

Broad subject distribution is presented in Table 3. Various applied topics constitute 58.5% (162 of 277 articles) of all articles. Research articles were also concerned with applied topics more than any other (36 of 53 articles, 67.9%). Specific subjects within these broad categories showed a relatively comparable distribution between research and non-research articles with the exception of three subjects: library users (4% of all articles but 13.2% of research articles), dissemination/retrieval of information (1.4% of all articles but 5.7% of research articles), and library materials/collections (6.1% of all articles but

Table 4

Characteristics of Research Articles

Variable	Number of Articles (n=53)
Research Methodology	
Survey	32 (64.0%)
Historical	5 (10.0%)
Bibliometrics	3 (6.0%)
Observation	6 (12.0%)
Content analysis	1 (2.0%)
Secondary analysis	1 (2.0%)
Experiment	1 (2.0%)
Other	1 (2.0%)
Research Environment	
Realistic	48 (96.0%)
Controlled	1 (2.0%)
Not applicable	1 (2.0%)
Data Collection Technique	
Questionnaire	29 (58.0%)
Observation	12 (24.0%)
Interview	3 (6.0%)
Other	6 (12.0%)
Data Analysis Technique	
Quantitative, descriptive	41 (82.0%)
Quantitative, inferential	0
Non-quantitative, descriptive	9 (18.0%)
Non-quantitative, inferential	0

11.3% of research articles). These three topics represented a notably higher percentage of the research articles.

Research Articles

Table 4 summarizes data related to the research articles examined in this study. Fifty-three of the 277 articles were categorized as research (19.1%). Compared to previous studies, this figure is rather low. In health sciences librarianship, 29.8% of articles are research reports.[6] In the general library and information science literature, three studies identified 31%, 24.4% and 23.6% of articles as being research.[7,8,9]

In the special library research literature, as in an earlier study of the health sciences librarianship literature,[6] survey research was the predominant methodology, representing 66% and 41% of the samples, respectively. The general LIS research literature of 1984 reported use of historical methods as most common, representing 23.7% of the sample,[9] although earlier studies of the general LIS research literature found that survey research was most popular.[5,8]

Not surprising given the methodologies used, most data collection was done via questionnaires (32 of the 53 research articles, 60.4%) and interviews (an additional three articles, 5.7%). These two techniques are consistent with the highly popular survey research methodology. Also consistent with the methodological findings, the environment in which special library research is conducted was rarely controlled, a condition necessary for experimental research but not practical (or even desired) in applied research. A realistic environment was the setting for 51 of the research projects described (96.2%), while only one (the sole experiment) was conducted in a controlled environment.

Data analysis tended to be straightforward, utilizing quantitative descriptive techniques. Forty-four of the 53 research articles (83%)

Table 5

Comparison of Special, Health Sciences and General Library Research Literature

	Special (n=53)	Health Sciences (n=363)	General (n=123)
Broad subject classification			
Applied	67.9%	45.7%	50.5%
Professional concerns	17.0%	13.2%	16.2%
General	9.4%	11.6%	11.3%
Theoretical	5.7%	29.2%	13.0%
Research methodology			
Survey	66.0%	41.0%	20.3%
Observation	11.3%	20.7%	17.0%
Historical	9.4%	6.6%	23.7%
Bibliometrics	5.7%	13.8%	3.3%
Content analysis	1.9%	1.7%	4.9%
Secondary analysis	1.9%	1.1%	2.4%
Experiment	1.9%	1.7%	8.1%
Other	1.9%	0.6%	20.3%

utilized quantitative descriptive techniques, almost identical to the findings in the health sciences librarianship research literature (83.5%). The only other techniques utilized were non-quantitative, descriptive techniques, representing 17% of the articles. This, again, is comparable to the health sciences librarianship finding, where non-quantitative, descriptive techniques were used in 13.8% of the projects described. No use of inferential statistics was found in the special libraries research literature.

Discussion

The findings of this study of the literature of special librarianship revealed some differences between the published research related to special librarianship and that of other areas of library and information science identified by previous studies. Most startling was the lack of research reported in the special library literature: less than 20% of articles published describe research activities, notably less than in the general LIS literature and the literature of health sciences librarianship. While an explanation of why this is so is not possible with the data analyzed here, a survey of special librarians currently underway may shed some light on this finding.[11] The value of research cannot be discounted and while day-to-day activities may not allow for significant amounts of time to be spent on research, all special librarians should consider themselves consumers of research. Matarazzo has pointed out that for most special librarians, the rewards at his or her place of employment may not lie with research and publication, a situation particularly true in the for-profit sector, but one which may also be the case in some nonprofit institutions as well.[3]

In comparing broad subject interests to previous studies, the research literature of special librarianship differs substantially. Data comparing the special library research literature with two previous studies[6,9] are presented in Table 5. All three studies found that applied topics are the most frequent subjects of research in library science. Interestingly, topics studied in the special library research literature are most closely related to general library and information science interests rather than health sciences, a subset of special librarianship.

In general, however, special library research focuses less on theoretical issues than either the general LIS or health sciences library research literature. This finding holds true for the general (non-research) literature, too. A recent study of the LIS literature of 1992-93 found that applied topics comprise 46.4% of the population, theoretical topics 31.5%, professional concerns 12.4%, general topics 8.8%, and related fields 1%.[10] The notable difference is percentage of articles that address theoretical topics: the special library literature shows that only 2.9% of articles deal with LIS theory, compared to the 31.5% in the general LIS literature.

What research is being conducted relative to special libraries is, however, consistent with that being conducted in health sciences librarianship. Both areas utilize less sophisticated methods than LIS research in general. Because the quality and rigor of a discipline's research is frequently used as a measure of its scholarly maturity, this lack of sophistication in the research of library and information science has been a long-standing concern. Results of research published in the archival record of a discipline are what move a discipline forward. Published research results not only communicate findings that may be useful in practice but they provide the basis upon which further research is built. The more rigorous the research is, the stronger the knowledge base upon which the discipline rests will be.

We need to understand why librarians don't use more sophisticated research techniques and, if lack of knowledge is the reason, we need to provide opportunities for them to acquire the needed knowledge and skills. Specifically, we need to know if pragmatic obstacles, such as lack of funding, deter research efforts or, more seriously, if there is a lack of interest or confidence in conducting research. To state the obvious, knowing why special librarians or LIS faculty do not undertake research related to the needs and interests of special librarians is essential to trying to rectify the situation.

In summary, the dearth of research related

to special librarianship is an issue that our professional associations have tried to address. It now is up to individual librarians, both as potential researchers as well as consumers of research, to make a contribution. Special librarianship will not move forward without resources being invested in research. All special librarians must take advantage of the resources available and contribute to the growth of special librarianship through participation in research. Part 2 of this project will attempt to identify existing roadblocks to special librarians' participation in research, either as consumers or researchers.(11) In the meantime, the findings described here should serve as a clarion call to all special librarians who, for reasons yet to be identified, have not been involved in research. We should all follow SLA's example and continue to think about what needs to be researched, who should research it, and, not insignificantly, who should provide the resources to conduct the research.

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Information Technology: Beyond the Toolbox

by Susan Charkes

Le rôle du directeur de l'information ne devrait pas être limité au contenu. Il doit inclure la technologie employée pour communiquer le contenu à l'utilisateur. La distinction entre le contenu et la technologie est une fausse distinction qui nous rend susceptible de perdre le contrôle des outils dont nous avons besoin pour faire notre travail. Nous devons remplacer cette fausse distinction par une approche qui reconnaît que notre rôle dans le processus des communications comprend de nécessité l'expertise technologique et que notre valeur vis-à-vis de l'entreprise augmente au fur et à mesure que notre sphère de compétence s'étend.

El papel del administrador de la información no debe ser limitado al contenido. Tiene que incluir la tecnología utilizada para comunicar el contenido al utilizador. La distinción entre el contenido y la tecnología es falsa, haciendonos vulnerables a perder el control sobre los instrumentos que necesitamos para hacer nuestro trabajo. Debemos remplazar esta falsa distinción con un enfoque reconociendo que nuestro papel en el proceso comunicativo incluye imprescindiblemente la pericia tecnológica, y que nuestro valor desde el punto de vista de la empresa aumenta mientras nuestro campo de aptitud se extiende.

The information manager's role should not be limited to content. It must include the technology used to communicate content to the user. The distinction between content and technology is a false one that makes us vulnerable to losing control over the tools we need to do our jobs. We must replace this false distinction with an approach recognizing that our role in the communications process necessarily includes technological expertise, and that our value to the enterprise increases as our sphere of competence expands.

In a recent article on managing information technology, information managers were asked to consider the following: When you hire somebody to fix the sagging porch in your house, do you expect them to come to the door bragging about the wonderful drill they're going to use on your porch? Surely not. The lesson, of course, is that information managers should also resist the temptation to equate technology alone with their value to their customers. Sell the skills, not the tools.[1]

As an image to illustrate an all-too-common lack of awareness of the hazards of technophilia, the tool-centered carpenter is just fine. But take the simile to another plane: you hire an architect to design your new porch. Are you miffed when she says, "You know, you requested a canvas awning to provide shade, but with this incredible new Klifton plastic, I can design you a skylight that responds to infrared rays to let in more light when it's cloudy and less when it's sunny so you'll not only save on your heating and cooling bills but you'll be able to grow tomatoes in the winter!" No, you are pleased at her suggestion. Is she selling you the tools? No. Is she selling the ability to use the tools? No—the architect will still hire a contractor to cut the

Klifton plastic into the right shape—perhaps using his brand-new Gewgaw automatic scissors. The architect is selling you her expertise in applying new technologies to change the elements of her products.

Now, whom would you prefer to hire when you notice your porch creaking: the carpenter, the contractor—or the architect?

The Content-Technology Distinction

What is the appropriate role of the information manager with respect to information technology? Where does the information manager's sphere end and the information systems manager's sphere begin? There is a disturbing current in some recent discussions of special librarianship that posits a distinction between the content of information and the technology used to access it. Moreover, the argument goes, the information manager's expertise lies in content issues. The proper role for the information manager is to focus on content and leave the technical issues to the experts in information systems [the group known as management information systems (MIS) or by similar names, in most organizations]. For example, in the video "Embracing New Technology"[2] Laurence Prusak asserts, in a sentiment echoed by others interviewed in the production:

> What's the point of a librarian who works . . . with the *content* of the material to try to learn all the new applications, to try to understand which to bring into the organization? There are whole organizations within firms that do this—MIS departments, DP departments, Information Systems departments. Form *alliances* with them but don't try to replicate their knowledge. There's no value in it.

This distinction is false, misleading, and dangerous. It is *false* because content is meaningless until communicated; thus content and access technology are inextricably linked. It is *misleading* because it suggests that roles may clearly be confined based on this distinction. It is *dangerous* because it removes from our control some of the most important tools we have to do our fundamental job: connecting people with the information they need.

Let us start with the premise that content *is* within the appropriate scope of the information manager's domain. By this we cannot mean that we deal with "content" in the same sense as our customers do. Whether information is used to solve problems, to aid in personal growth, or to entertain, the user seeks to understand its content and to assimilate it (to the extent it is "relevant") to his or her existing knowledge. Information is the vehicle for this self-transforming process; content is the substance.

Content in this sense—the substance of new knowledge—is applicable to only a few of the services that information professionals have traditionally performed. For example, reference services often require an understanding of the content of an information resource, because the basic reference function of "answering questions"[3] requires looking up the answers. Competitive intelligence services, similarly, require the information manager to read and understand the content of resources in order to analyze, evaluate, and communicate that same content.

Many other functions within the information manager's spheres of competence, however, have a more attenuated relationship to the content of resources. For example, neither devising and applying systems for organizing information nor acquiring bibliographic control over a subject to provide reference, research, cataloging, or indexing services requires that one master the underlying subject. Rather, what must be understood are the structures that enable us to obtain and provide access to resources in the subject. In this activity, the information manager is not so much involved with content as substance. Instead, content is the vehicle for conveying meta-information about itself.

Thus, it cannot be denied that content is part of the information professional's sphere of competence. But content does not *define* the job. That is like saying librarians deal with books. The philosophy of the modern professional is to reject the *resource-oriented* definition of our function in favor of the *user-centered* approach.[4]

Communicating Content

Providing users with access to information, in the form and with the content that best serves their needs, is the primary role of the information manager.[5] To accomplish this, we must know information's content, in both senses of that word. But we must also know and understand, just as intimately, how best to provide access to content. We must know how to communicate. At the most basic level, if we do not communicate the information to the user properly, it is as worthless as if it had never existed.

Not getting information is the easy example. We also know that content is transformed by the media used to communicate it. We cannot separate the content of information from the medium that it arrives in. Thirty years after McLuhan, must we reapprehend the insight that the medium is the message?[6] Witness, for example, the tremendous effect that a graphical user interface to the Internet (Mosaic/Netscape) has had not only on the popularity of the medium, but also on the form and substance of the content it conveys.[7] As content becomes hyperlinked it is transformed.

In the print era it may have seemed unlikely that a librarian would gain much from knowing about the technology of printing. But the medium in which information was embedded was also, for the most part, the medium in which it was communicated to the reader. You wanted a book, you got a book.

With the advent of the electronic library, technical knowledge is critical to user-centered service. Not only can digitized information exist in a myriad of forms at the point where it is accessed, it can also be transformed into a manifold variety of media for delivery. Knowing how information can be delivered is clearly within the province of the information manager.[8] Understanding the options that technology creates allows us to make judgments about the most appropriate means of access for each use. Technical knowledge also empowers us to create new options for access. Unless we understand technology well enough that we can comprehend its implications, we can be no more than its passive consumers.

Information managers cannot simply cede all technical expertise to information "systems" personnel. Technological change has driven changes in our field for two decades. The future promises only more change, and more blurring of the formerly clear boundaries between "content" and "technology." Prusak's approach would confine information managers' roles to the area that is clearly within the content sphere only. We must define our roles so as to include both spheres, and let the roles change as the boundaries do. Then we stand a chance of surviving and even prospering within our organizations.

A Process-Oriented Approach

In order to define our roles within the organization in such a way as to maintain control over information technology, we must exploit the power inherent in our user-centered approach. It is rooted, after all, in communication theory: rather than focusing on the movement of information from resource to user, the user-centered approach locates our central role in the "informing processes of the individual."[9] The communications process is that by which the user becomes informed. The very use of the term "information manager" or "information professional," which obscures this communications function, tends to focus our (and our management's) attention on the information, that is the "content," rather than our role in the informing *process*. Moreover, our role is central not only to the individual's informing process, but also by extension to the informing process of the organization. We facilitate communication, interaction, and collaboration—the cornerstones of innovation.[10]

Explicitly defining our organizational role by reference to the communications process enables us to clearly claim technology as inherent to our function, not merely incidental. It is vital that we know and control the means of communication of information because that is our true role. If we allow others to define our roles by reference to "content" (information), we are also allowing them to redefine our roles away from the communications process.[11]

The alternative is marginalizing and de-

structive to our profession. Confined to using only a portion of our skill set, information managers would be associated in users' minds with the information they need rather than with the informing process—the human equivalent of a bookmark. Indeed, the software industry boasts of its rapidly evolving programs to automate the processes of identifying appropriate resources and selecting relevant information. (Some even tout such automated processes as the equivalent of having one's own librarian in a computer; less flattering metaphors are to robots or to canine retrievers.) The point is not that such automation is feasible or is an appropriate replacement for information managers' content skills, but rather that users believe that automation is feasible and, further, believe that eliminating the human intervenor improves the users' ability to inform themselves. To the extent that the information manager's role is associated solely with content, such a belief system contributes to lowered expectations of the profession, and thus decreases our perceived value within the organization.

In contrast, promoting our competence in the entire informing process will enable us to evaluate and control the technologies that continue to transform that process. In so doing, we will be able to improve the quality of users' informing process, enabling users to derive real value from our participation in it. Broad-based expertise will also contribute to our perceived value within the organization, as users recognize that the informing process is in fact worthy of the application of professional skills. Perceptions of value will increase our clout within the organization,[12] and thus our control over technology that affects our role, our value to users, and our daily activities. In short, in order to control our destiny, we must control technology.

Information Technology: A Working Definition

When we refer to information technology, we are inclined to think of it in operational terms, by describing information processing machines. A typical definition of information technology is "the hardware of the digital computer along with all peripherals and software used to store, repackage, and display information of any kind, bibliographic or other."[13] This definition clearly encompasses the physical components of the computer, the operating systems that run the computer and the network operating systems that link it to others, the applications programs that run on the computer (including database and communications software, and the front-ends or interfaces to them), input devices such as keyboard, mouse and scanner, and storage devices such as CD-ROMs and optical disks, to name but a few specific items.

But a descriptive definition, while useful to enable us to identify particular information machines, is not dynamic enough to support the development of a process-oriented approach to our role. Additionally, by tying information technology to the microprocessor, such a definition excludes from our expertise such technologies as microfilm, audio and videotape—and paper. Finally, definitions tied to the current state of the art impede adaptation to new technologies.

A better definition of information technology is one that illuminates its role in the communications process. Information technology is any machine that mediates information.[14] An information machine, broadly conceived, includes any human-made system that transforms information.[15] This definition of information technology encompasses the same digital computer devices as does the descriptive definition. It also includes such machines as the book, which is a system for translating knowledge into symbolic information for sequential as well as random access.[16] The definition is flexible enough to accommodate yet undreamed-of devices. Most importantly, it allows us to focus on the process of communication that information technology facilitates through mediation.

This section has moved quickly from the mundane and specific to the abstract and theoretical. The fluidity of the process-oriented definition may initially be frustrating to the information professional, whose concerns are, after all, nothing if not quotidian. Neverthe-

less, it is crucial to our continuing professional identity as information managers that we view these devices through the same process-oriented lens as we view content. Indeed, even the attempt to define information technology has limited value for this approach, because technology is an inherently dynamic concept. One dictionary definition of technology is "the sum of the ways in which a social group provide themselves with the material objects of their civilization."[17] At any given moment in time this sum will have changed from the previous moment. Rather than concern ourselves with what information technology is, the process-oriented approach suggests that we identify the purpose of our role in the organization and define our role in terms of what we *do* rather than what we use.

Managing Information Technology

What does such an approach mean within the organization? We understand the technology that enables us to provide access to content appropriate to the specific informing process it is used in. We have the authority to select the technology that we, and our users, employ at all stages of the informing process. And we know how to—and do—exploit technology to improve the informing process. Thus the proper role of the information manager includes identifying, evaluating, and implementing emerging information technologies within the context of our organization's technical and strategic plans. We are, in short, *architects of the virtual built environment.*

Let us examine two libraries' services that reflect the approach to managing technology advocated here. At Public Service Electric & Gas Company (PSE&G), a utility company headquartered in Newark, NJ, the library staff acquired expertise by developing databases covering such traditional information center areas of concern as the library catalog and current business and technical literature. Building on these efforts, the library took on the responsibility for developing and administering full-text databases of non-bibliographic material, including employee information, supplier information and corporate plans, policies, and manuals. The library provides these products through an integrated system that enables full-text access or document delivery requests from the user's desktop. Following on the success of the databases, the library has successfully taken the position that, as the group with the most expertise in organizing information and presentation for access by users, it should be the service provider of *first* resort for groups desiring to make information available to the organization or for company-wide access.[18]

At Warner-Lambert Co., a pharmaceutical and consumer products company, the corporate library has taken the lead in promoting the Internet to corporate colleagues. The library has developed an internal World Wide Web home page for company-wide access to virtual library services. The home page provides colleagues not only with a gateway to Internet resources that is tailored to business needs, but also with access to internal corporate resources. Library staff provide awareness of Internet developments through a newsletter (available in print and online in multiple formats), and educate colleagues in the use of Internet resources and in the development of Hypertext Markup Language documents. Information professionals also participate in the development of public-access company Internet resources. Through these efforts, colleagues increasingly associate the library with expertise in providing access to information using appropriate technology.

It is not merely incidental that information systems specialists are part of the staff of the libraries described above. Nor is it surprising, given the complexities of a modern corporate information system, that these projects also entail some participation of "MIS" departments. Independent library expertise is critical to the generation of new ideas, the identification and analysis of users' needs and behavior, the continuing maintenance and administration of the projects, and the confidence of users in the technological expertise they perceive as residing in the library. That confidence will lead to trust in the information professional's capability of providing leadership in information management.

These two examples illustrate an approach to

technology management that views information technology itself as an important resource for the special library. Technology is not merely a tool for digging out information and shoveling it to the user. It is integral to the role of the information professional, and a key source of our value to the organizations that employ us.

Technology is appropriately part of our sphere of control and expertise. Skills in managing technology are as important as managing the processes, products, and services that the virtual library provides. We must not narrowly define our roles, nor can we allow others to do so for us.

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Resources for Special Library Collection Development in Educational Advising

by Edward A. Riedinger

Cet article indique les manières dont on peut rassembler systématiquement la documentation dans le domaine des conseils pédagogiques et en faire une fonction d'une librairie spécialisée. Il décrit six groupes de documentation relative aux conseils pédagogiques, imprimée et sous autre forme, qu'il est possible de se procurer auprès de divers éditeurs et associations. Ces groupes de documentation sont des guides et répertoires généraux destinés aux universités; des ouvrages donnant des données ou soutenant l'enseignement supérieur américain; des guides et répertoires spécialisés; des guides établis en dehors de l'enseignement supérieur; des informations sur les études à l'étranger; et une documentation visant à tenir l'utilisateur au courant des matériaux relatifs aux conseils pédagogiques.

Este artículo indica maneras en las cuales los recursos para el asesoramineto educacional, como operación de biblioteca especial, puede ser desarrollada sistemáticamente. También describe seis grupos de recursos asesores, impresos y no impresos, asequibles de varios editores y asociaciones. Estos grupos son guías y directorios generales sobre colegios mayores y universidades; trabajos como fondo o como apoyo para la educación superior americana; guías y directorios especializados; guías fuera de la educación superior; estudios internacionales; y recursos para mantenerse al día en materiales de asesoramiento.

This article indicates ways in which resources for educational advising as a special library operation can be systematically developed. It describes six groups of advising resources, both print and non-print, available from various publishers and associations. These groups are general guides and directories to colleges and universities; background or support works for American higher education; specialized guides and directories; guides outside higher education; international study; and resources for staying updated on advising materials.

Most reference librarians are familiar with patrons' questions as to where they can obtain information about undergraduate or graduate study, financial aid, technical schools, details of admission to programs, and study abroad. Reference librarians can respond to these inquiries by directing patrons to an educational advising, guidance, or information center or by consulting specialized resources in their own reference collections. These resources are most often guides to majors or graduate fields of study, admission procedures, or financial aid opportunities. More complex questions for educational advising or information may lead reference librarians to look for complete and appropriate resources, or even to establish a special collection for such information.

Numerous specialized resources exist to aid in building such collections, which have the potential to constitute a special library. Indeed, insofar as the principles of librarianship are built on the gathering, organizing, communicating, and administering of information, educational advising as a professional information service can

be greatly enhanced by systematically applying to it the library practices of collection development, cataloging, reference service, user education, and management.

There are six groups of publishers and associations whose publication catalogs and lists furnish fundamental resources for the development of an educational advising collection. These resources can be distinguished based on the educational level (from higher to technical, secondary, and primary) and/or type (general, specialized, or international) of information they offer. Moreover, reference librarians can stay informed about educational advising resources by regularly consulting certain serial publications.

General Guides and Directories to Colleges and Universities

The first group of resources consists of publishers who specialize in print, software, or video guides to programs of study in colleges and universities. Some also publish works of a support nature, such as career selection or admission exams preparation. Publishers in this group are:

Barron's
250 Wireless Blvd.,
Hauppage, NY 11788

Barron's publishes guides for the selection of college majors and for business and law schools. Barron's also produces publications for exam preparation such as the Scholastic Assessment Test (SAT) and the Test of English as a Foreign Language (TOEFL).

College Board Publications
45 Columbus Ave.,
New York, NY 10023-6992

The College Board produces *The College Handbook* and *Index of Majors* and books on college costs and transferring between colleges. In addition, the company has software (diskettes and compact discs) for finding and selecting college programs, calculating costs, and pursuing financial aid. It also has videotapes on the college admission process. As the producer of the SAT, it offers numerous works of preparation for this exam.

Lovejoy's College Guides
P.O. Box Q,
Red Bank, NJ 07701

Lovejoy's resources include a college guide (which has a section on American colleges abroad) and extensive exam preparation, application and admission, and financial aid publications.

Macmillan Publishing
866 Third Ave.,
New York, NY 10022

Unlike other publishers in this group, Macmillan does not exclusively publish college guides and admission materials. Nevertheless, it holds in its publications list one of the oldest college guides, *The College Blue Book,* available in print and compact disk; and also has works on extension or correspondence education.

Peterson's Guides
202 Carnegie Center, P.O. Box 2123
Princeton, NJ 08543-2123

Peterson's Guides publishes annual directories of undergraduate and graduate study and titles pertaining to the most competitive colleges, schools for the disabled, non-degree certificate programs, internships, electronic and correspondence education, athletic scholarships, grants for graduate study, and technical schools. It also offers electronic versions of its annual guides.

Cambridge Educational
P.O. Box 2153, Dept. CC15
Charleston, WV 25238-2153
and
Wintergreen Orchard House
P.O. Box 15899,
New Orleans, LA 70175-5899

These two publishers provide publications on selection of majors and colleges or universities, career selection, orientation to admission procedures, and exam preparation, along with job seeking advice. They have an extensive line of print, video, and software products.

Patrons searching for educational advising information, however, seek not only guides and directories, but also guidance to the best places at which to study.

Gale Research
835 Penobscot Building,
Detroit, MI 48226-4094

Gale publishes *Educational Rankings Annual*, a yearly compendium of rankings and lists in education, gathered from education and general interest publications. Of a further ancillary nature, Gale also publishes the *Encyclopedia of Associations* and the *Research Centers Directory*, fundamental resources for finding information on study or research in highly specialized or obscure fields. It also publishes *The Video Source Book*, which includes a section on education.

U.S. News & World Report
2400 N St., NW,
Washington, DC 20036

This weekly newsmagazine publishes an annual evaluation, eagerly anticipated at the beginning of the academic year, on the best institutions of higher education in the United States. It ranks the major research, or national, universities, national and regional liberal arts colleges, and large and small comprehensive colleges. Research for this survey is conducted using a number of objective statistical factors together with subjective ones based on the opinions of academic personnel. It also publishes a guide to the best graduate and professional schools.

Dearborn Trade
520 N. Dearborn St.,
Chicago, IL 60601-4354

A further source of regular information for evaluation of colleges, universities, and graduate and professional schools, is the *Gourman Reports*, distributed by Dearborn Trade. These reports are controversial insofar as, unlike *U.S. News* above, they do not provide details of the methodology or sources for their compilation.

Career Guidance Foundation
8090 Engineer Rd.,
San Diego, CA 92111

This organization reproduces the catalogs, both general and specialized, of the several thousand institutions of higher education in the United States, making them available on microfiche and compact disc.

Ancillary Works

This second group of resources includes organizations that produce works of a background or support nature for study in American higher education.

American Council on Education (ACE)
One Dupont Circle, NW,
Washington, DC 20036

ACE publishes a key annual work, *Accredited Institutions of Post-secondary Education*, along with background works on U.S. education.

American Association of Community and Junior Colleges (AACJC)
One Dupont Circle, NW, Suite 410
Washington, DC 20036-1176
and
Council of Graduate Schools (CGS)
One Dupont Circle, NW, Suite 430
Washington, DC 20036-1176

Reference librarians find that it is quite useful to be included on the mailing lists for publications of the AACJC and CGS, in addition to the ACE, so that they receive the full spectrum of publishing information on higher education from junior colleges to graduate study.

Educational Testing Service (ETS)
P.O. Box 6108,
Princeton, NJ 08541-6108

ETS publishes registration bulletins for its exams, such as the Graduate Record Examination (GRE) and Graduate Management Admission Test (GMAT), and TOEFL, and aids to taking these tests such as books, audiocassette tapes, and software programs. Furthermore, it has a guide similar to works in the first group, the *Directory of Graduate Programs*.

American College Testing Program
2201 North Dodge St.,
Iowa City, IA 52243

This program produces the American College Test (ACT) and materials ancillary to it.

Arco Books
200 Old Tappan Rd.,
Old Tappan, NJ 07675

Arco publishes an extensive series of books for preparing for college admissions exams and going through the application procedure.

Cliffs
P.O. Box 80728,
Lincoln, NE 68501
and
Future Technologies
1061 E. Flamingo, Suite 8
Las Vegas, NV 89119

For exam preparation, such as the SAT, TOEFL, GRE, GMAT, and dozens of other admission and professional licensing tests, these publishers offer an extensive line of software products.

Several publishers provide information regarding costs and financial aid information. They are:

Higher Education Publications (HEP)
64 Arlington Blvd., Suite 648
Fall Church, VA 22042

HEP is important for its directory of U.S. higher education and its compendium of costs for undergraduate education.

Foundation Center
79 Fifth Ave.,
New York, NY 10003-3076

This center publishes many titles related to grant giving by American foundations, among which are the *Foundation Grants Directory* and *Foundation Grants to Individuals.*

National Science Foundation (NSF)
1800 G St., NW, Suite 232
Washington, DC 20550

NSF has publications on preparing grant requests and obtaining financial aid. The NSF makes many of its publications available via the Internet. They can be accessed through the Science and Technology Information System (STIS) of the NSF. Send an e-mail message to: stisserv@nsf.gov. In the body of the message, write "get index" to receive a list of NSF documents available via electronic retrieval.

Oryx Press
4041 N. Central Ave., Suite 700
Phoenix, AZ 85012-3397

Oryx publishes the *Directory of Research Grants* together with specialized grant directories for the humanities, biomedical, and health fields. It also offers electronic grant searching capability through *OnDisc.* Furthermore, it publishes numerous works on applying for grants and has many background titles on American higher education. It produces the annual *Accredited Institutions of Higher Education.*

Specialized Guides and Directories

A most important, yet somewhat elusive, group of publishers are academic and professional associations who publish guides to undergraduate and/or graduate study in their discipline or profession. To locate these publications, consult:

Todd Publications
18 N. Greenbush Rd.,
West Nyack, NY 10994

This is the publisher of the *Guide to American Educational Directories,* edited by Barry Klein. Now in its seventh edition, this book is a guide to directories published by numerous professional associations which detail colleges and schools and specialized scholars. It is organized by fields of study.

America-Mideast Education and Training Service (AMIDEAST)
1100 17th St., NW,
Washington, DC 20036-4601

AMIDEAST publishes the *Guide to Educational Advising Resources,* edited by Juleann Fallgatter and her staff on *The Advising Quarterly,* also published by AMIDEAST. This work is comparable to Barry Klein's book, but it is especially valuable for its inclusion of a considerable number of guides and directories from professional associations which are free of charge. This guide will soon be issued in an

updated and expanded edition, and newly entitled, *Planning Your Future: Resources on Careers and Higher Education.* AMIDEAST also has a notable guide to building an educational advising collection, entitled *The Library that AMIDEAST Built* by Joanne Abed.

Guides Outside Higher Education

Educational advising collections also require guides and directories about primary and secondary education and technical and vocational schooling.

Educational Directories
P.O. Box 199, Mount
Prospect, IL 60065

Educational Directories produces *Patterson's Elementary Education, Patterson's Schools Classified,* and *Patterson's American Education.* The latter lists the addresses and communication numbers of both public and parochial school administrators in the United States. It also includes information on technical and trade schools.

Career College Association (CCA)
750 First St., NE, Suite 900
Washington, DC 20002
and
National Home Study Council (NHSC)
1601 18th St., NW, Suite 2
Washington, DC 20009

CCA's (formerly the National Association of Trade and Technical Schools) principal publication is the annual *Directory of Private Accredited Career Colleges and Schools.* NHSC publishes the annual *Directory of Accredited Home Study Schools.* Both provide useful information on developments in vocational and correspondence study.

Porter Sargent Publishers
11 Beacon St.,
Boston, MA 02108

Porter Sargent publishes the *Handbook of Private Schools* and the *Guide to Summer Camps and Summer Schools.*

International Study

Finally, for patrons seeking educational or training opportunities abroad, the following organizations publish key material:

Council on International Educational Exchange (CIEE)
205 E. 42nd St.,
New York, NY 10017

CIEE publishes in conjunction with its discount travel service for students and produces works oriented to study, training, and work abroad.

Impact Publications
9104-N Manassas Dr.,
Manassas Park, VA 22111-5211
and
Institute of International Education (IIE)
809 U.N. Plaza,
New York, NY 10017
and
Intercultural Press
P.O. Box 700,
Yarmouth, ME
and
NAFSA: Association of International Educators
1875 Connecticut Ave., NW, Suite 1000
Washington, DC 20009-5728
and
UNIPUB
4611-F Assembly Dr.,
Lanham, MD 20706-4391

These organizations offer publications on study, work, and living abroad. The Intercultural Press and NAFSA include video materials in their publications, concentrating especially on cross-cultural adaptation. They, along with Impact and UNIPUB, include books on the cultural context for doing business abroad, the latter publisher focusing particularly on Europe.

Keeping Updated

To keep up to date with new publications on educational advising, several serial publications should be consulted regularly:

The Chronicle of Higher Education
1255 23rd St., NW,
Washington, DC 20037

The Chronicle has a regular section, "New Books on Higher Education," on new publications with either background information on U.S. higher education or guides and directories relevant to advising. (Do not confuse this section of *The Chronicle* with the one, "New Scholarly Books.") The higher education books section usually appears just before the section on information technology, which occasionally includes new software relevant to advising.

Choice
100 Riverview Center,
Middletown, CT 06457-3445

The sections in this periodical relevant to advising are those for "reference" and "education," where reviews of new guides and directories are found. Moreover, new software useful in advising is reviewed occasionally.

Lovejoy's Guidance Digest (for address, see Lovejoy's above) is a monthly review which is highly useful for following developments to new majors or special fields of study in American colleges. It also includes practical advice on college application and admission procedures and campus living.

R.R. Bowker
121 Chanlon Rd.,
New Providence, NJ 07974

The subject volumes of *Books in Print* are notably important for information on works in advising. They include subject headings for all disciplines and professions, subdivided, among other things, for vocational guidance and examinations. Thus one finds important advising books under, for example, "economics—vocational guidance," "engineering—vocational guidance" and "economics—examinations, questions, etc." and "engineering—examinations, questions, etc." There are other subject headings for correspondence courses, student aid, research grants, and more. In the same manner, *Forthcoming Books* publicizes new advising works. For financial aid, Bowker publishes the *Annual Register of Grants.* For non-print advising materials, it produces the *Educational Film & Video Locator* and *The Software Encyclopedia.* The fact that this preeminent library publisher also has such significant advising resources further shows the extent to which educational advising can be enhanced by recourse to special library operations.

American Library Association (ALA)
50 E. Huron St.,
Chicago, IL 60611

The *Guide to Reference Books* and its supplements are published by ALA. This work is useful in identifying advising works because it divides reference works by fields of knowledge or human endeavor, subdividing by directories, guides, handbooks, among other forms. For example, the section on foundations and philanthropic organizations yields a prime advising resource, *Foundation Fundamentals: A Guide for Grantseekers* by Carol Kurzig.

Mecklermedia
20 Ketchum St.,
Westport, CT 06880
and
Emerging Technology Consultants
2819 Hamline Ave., North,
St. Paul, MN 55113

Beyond the resources mentioned above for updating of non-print materials in advising, these two publishers are important for software resources. Mecklermedia publishes *CD-ROMs in Print International;* and Emerging Technologies publishes the annual *Multimedia and Video Compendium,* which has a section on career guidance and includes both compact and laser discs.

Conclusion

This compilation should suggest two things. One, extensive resources exist for building and maintaining special library collections in educational advising; and two, these are so extensive and varied that educational advising can be considered for development as a special library operation.

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Sovereignty, Collaboration and Continuing Challenge: A History of Tribal Libraries in San Diego County[1]

by Bonnie Biggs and David Whitehorse

L'histoire des bibliothèques indiennes établies récemment dans les petites réservations indiennes dans le sud de la Californie présente une image saisissante de l'autodétermination et de l'exercice de leur souveraineté que manifestent les tribus dans la façon dont elles déterminent et satisfont les besoins en systèmes informatiques tribaux. Ces établissements uniques luttent et survivent dans de rudes économies de réservation quand bien même que les systèmes bibliothécaires des localités, comtés et régions souffrent de diminutions fiscales draconiennes, ce qui réduit considérablement les services des bibliothèques et menace de fermer les annexes rurales. L'expérience de la bibliothèque indienne de San Diego expose les défis et occasions qui se présentent aux populations rurales au fur et à mesure qu'elles forment des liens de coopération entre la bibliothèque et la macro-culture américaine et se font une place en tant que composantes intégrales de la communauté de la réservation.

La historia de las bibliotecas recientemente establecidas en pequeñas reservas Indias en el sur de California, presenta un cuadro impresionante de autodeterminación tribal y un ejercicio en soberanía, al definir y cumplir con las necesidades de los sistemas de información tribales. Estas facilidades únicas luchan y sobreviven en economías de reservas severas mientras los sistemas de bibliotecas locales, de condados, y regionales sufren duras reducciones fiscales que inmensamente reducen los servicios de biblioteca y amenazan el cierre de las sucursales rurales. La experiencia de la Biblioteca India de San Diego demuestra ambos retos y oportunidades enfrentando a las poblaciones y gobiernos tribales mientras estos desarrollan relaciones colaboradoras con las bibliotecas y con la macrocultura americana y establecen su lugar como componentes de la comunidad de reservas.

The history of Indian libraries recently established on small Southern California Indian reservations presents a striking picture of tribal self-determination and exercise of sovereignty in determining and meeting tribal information system needs. These unique facilities struggle and survive in harsh reservation economies even as surrounding local, county, and regional library systems experience severe fiscal cutbacks which greatly reduce library services and threaten closure of rural branches. The San Diego Indian library experience relates both challenges and opportunities facing tribal populations and governments as they develop collaborative library relationships with the American macro-culture and establish their place as integral components of the reservation community.

In Southern California, libraries have sprung up on seven of the 18 small American Indian reservations in rural San Diego County.[2] These unique facilities generally struggle to survive in harsh reservation economies which have been further marginalized by the worst regional economic depression since the 1930s. Yet they do survive, even as surrounding local, county, and regional library systems have experienced severe fiscal cutbacks which greatly reduce library services and threaten closure of numerous rural branches.[3] The history of Indian libraries in the region presents a striking picture of tribal self-determination and exercise of sovereignty in determining and meeting tribal information system needs. It further delineates the challenges and opportunities facing tribal populations and governments as they develop collaborative relationships with the American macro-culture. Gen-

erally, the framework for the development of these small library facilities was the amendment to the Library Services and Construction Act;[4] however, the existence of tribal libraries did not begin with federal policy. Rather, the *function* of tribal and cultural libraries, if not the generally accepted *form*, has been a part of American Indian communities since before the Colombian interchange.

For untold centuries, Native Americans have passed their unique legacy to successive generations through an ancient but fragile chain of oral tradition. Today, within the complexity of contemporary life in the United States, this heritage of American indigenous culture is reflected in the habits, customs, and traditions of the "Knowledge Seekers," as well as the "Wisdom Keepers" who live within Native American tribes and maintain links with traditional tribal knowledge, customs, and history. Tribal Elders with knowledge of traditional Indian technology, government, natural science, folklore, religion, art, natural healing, legend, and tribal history serve *as living libraries for their communities* (emphasis added).[5]

Special collections including tribal histories, material culture, early ethnographic records, and tribal governmental archives were scattered throughout the San Diego reservation country. In the early 20th century, principally in the care of hereditary leaders or their families, tribal offices, or housed haphazardly in community buildings or storehouses. Of note were collections held by a number of small missions and *asistencias* [6] including Santa Ysabel, San Antonio de Pala, and Catholic chapels at Jamul, Sycuan, Pauma, and Barona.[7] The fate of many of these collections is unknown, owing in part to the termination of many California tribes in 1953, and discontinuities in tribal government and tribal development in the termination era extending to 1971.[8] The majority of tribal archives from the period were retained by particular reservations or were duplicated in major part at the Bureau of Indian Affairs Sub-Agency at Riverside, CA.[9] Until the early 1970s, there was little systematic assembling of library collections at each reservation, and a comprehensive cataloging of Indian "libraries" in the county was nonexistent.

Indian Library Development

The formal and expanding entrance of Indian tribes into the realm of library development occurred in the post-termination era. Jack D. Forbes, in his early advocacy for the establishment of native-controlled information systems and repositories, proposed that American Indian people living on or near reservations had library and information needs in two broad areas. The first need was for the library services common to other ethnic groups. The second was specialized informational needs unique to the Indian population as a whole. He further defined the latter as having imbedded needs for the preservation of cultural-historical heritage. Susan Dyal's *Preserving Traditional Arts: A Toolkit for Native American Communities*, or *Going Home: The California Indian Library Collections Manual* are two sources that have assisted local San Diego County tribes in preserving invaluable collections of material culture and given guidance in locating materials of local significance. Indian populations, according to Forbes, also need information for decision-making, personal and language development, and to support and sustain tribal sovereignty and integrity.[10] A number of government publications cover federal legislation that impacts tribes and their ability to govern independently. Access to recent rulings on gaming initiatives, repatriation, and water rights are critical to tribal self-determination. A tribe might use the *Congressional Index* to follow a bill through Congress or access the full text of any public law in the *U.S. Code Congressional and Administrative Views.*

Since the late 1970s, the Indian library experience has consistently reinforced Forbes' analysis, while adding other critical needs and considerations to the picture. American Indians required information access at a par with the American macro-culture, not just equivalent to then-emerging ethnic populations of color. Further, specialized information needs related, not only to the Indian population as a whole, but also

to each specific tribe, especially as related to exercise of governmental sovereignty, recovery from termination initiatives, and programs contributing to the self-determination of each tribal and/or reservation group. This comprehensive range of information needs required that, to be optimally effective from the tribal perspective, tribal libraries should include elements akin to law libraries and research institutions, as well as significant holdings of government publications and business and finance materials. Tribes were, and are, sovereign entities similar to states, with the same needs for ready access to information. The tasks inherent in the development of adequate tribal libraries were, indeed, formidable.

The expanded view and development of library and information needs from the Indian perspective has been a long and often arduous process. The challenges of economic development, tribal capacity building, protection of land and resource rights, and numerous other issues of tribal sovereignty burgeoned in the wake of the Indian Self-Determination and Educational Assistance Act of 1975 (PL 93-638). These activities were often considered higher priority than library and other service needs as they related directly to tribal survival. Ironically, these tribal initiatives and developments also increased information needs, especially those related to tribal archives, reconstruction of administrative and legal histories in support of Indian claims, and resource allocation and use. As tribal cultural, political, and economic resurgence expanded in the 1980s, Indian needs and demands for information services increased.

Increasing Needs for Information

Indians began to note that tribal information systems, especially libraries, had been marginalized: it seemed that the primary functions considered appropriate, as was often reinforced by granting agency criteria, were in the realm of cultural maintenance. However, many tribes realized that library services were essential to improvement of reservation educational attainment and development of the tribes' capacity to manage their own affairs. These realizations increased the development and expansion of educational initiatives for American Indian people on reservations and in conjunction with non-Indian education initiatives as well.

The increase in tutorial, Head Start, Title IV, and later, Title V Indian Education programs in turn fostered information needs far broader than cultural and linguistic preservation and the recording of tribal histories. Additional self-determination activities required the use of contemporary data which was often generated within and by the macro-culture. These types of information were not readily available in public or education institution libraries, thereby restricting access to critical information, often of a perishable nature.

Further, reservation, rural, and urban Indian communities were not unaffected by the dawning of the information age and changes in technology. The shift to automated systems and the proliferation of electronic information access tools acted as a further barrier to information gathering, since many tribal groups of the era were just beginning to transition from paper to electronic record-keeping. As a consequence of these and other trends both within and outside their control, American Indian communities realized that their library and information service needs were *at least equivalent to* those of the macro-culture. Given the specialized needs articulated by Forbes, Townlee, Pelzman, Patterson, and others, library services seemed to be more critically important.[11] The irony for Indian communities was that not unlike other relationships between themselves and the macro-culture, need far exceeded supply of both facilities and funding, and development initiatives could not keep pace with increased needs for information and library services. Often, these needs became critical before they were perceived as critical, because Indian communities were not provided with information necessary to understanding the central role libraries might play in reservation life. In order to understand these dilemmas, one must also understand that the historical development of the Indian library experience is a fairly recent phenomenon, linked to federal policy, and generally perceived to be a luxury rather than a necessity.

Changes Slow to Occur

Where change in the Indian-library relationship occurred, it did so sporadically and slowly. As example, the Colorado River Tribes Public Library, established in 1957, was the first library in the country developed to specifically meet Indian information needs.[12] Prior to the 1970s, a few large reservations made efforts to establish links with large public library systems, but these were poorly funded, centered around cultural maintenance, and were not linked to the larger picture of information use.[13]

In 1971, the National Indian Education Association (NIEA) Library Project was created in order to "plan, develop, and demonstrate library programs that meet informational needs in Indian communities."[14] Funded in large part by the Higher Education Act Title II-B of 1965, the objectives were: (1) identification of information needs; (2) implementation of demonstration programs; (3) operation of demonstration programs; and (4) evaluation.[15] Sites selected for the project were Rough Rock Demonstration School in Arizona, the Standing Rock Sioux Reservation in North and South Dakota and the Saint Regis (Akwesasne) Mohawk Reservation in New York. Circulation statistics from all three sites indicated that use of materials exceeded the national average. All three libraries continued operation after the project was completed.[16]

For California tribes, however, the focus of these programs was not responsive to tribal needs. As with many of the federal programs of the time, the development of new tribal institutions such as libraries favored larger reservations possessing larger populations and more complex governmental structures. For most of the Southern California tribes, a small pool of human resources, limited development of tribal administrative capacity, and reservation imperatives for survival-oriented programs precluded involvement in the NIEA Library Project. The issues of human resource and administrative capacity limitations are important to consider in the historical development of tribal libraries, since these issues continue to affect small tribes and their libraries to the present. Despite inherent problems in the funding process, some Southern California tribes and development agencies began to formulate plans for meeting information needs, in preparation for other, more appropriately focused library grant opportunities.[17]

New Initiatives

Also during the 1970s, the first committees within the American Library Association began looking at the special information needs of Indian people. Subsequently, the combined efforts and shared determination of Indian librarians and tribal administrators led to the 1978 White House Preconference on Indian Library and Information Services on or Near Reservations. This Pre-Conference was one of many held in preparation for the first White House Conference on Library and Information Services (WHCLIS). These first hearings uncovered the problem that, despite overwhelming need, and an understanding that information access was a critical dimension of self-determination activities, neither state nor federal agencies had accepted the responsibility for providing information services to American Indians. Among the 64 resolutions passed at the WHCLIS was a National Indian Omnibus Library Bill (NIOLB) which called for legislation to assist in developing library and information services on all Indian reservations, and included training for library staff.[18]

In 1984, the Library Services and Construction Act (LSCA), administered by the Department of Education, was amended to include a new Title IV; Library Services for Indian Tribes & Hawaiian Natives Program. Title IV incorporated 22 resolutions from the 1979 WHCLIS, including the NIOLB. This title was the first dedicated to the provision of library services for Indian people in two general categories of funding, Basic Grants and Special Project Grants. Basic Grant awards were equal in size and were available to any eligible tribe applying for them. Basic Grants could be used for library needs assessment, salaries and training of library personnel, library materials, transportation for access to library services, special library programs, and construction or renova-

tion of library buildings. However, the minimal amount of the award, amounting to only $3,629 in fiscal 1989, either necessitated additional funding to make libraries viable, or kept operations at rudimentary levels.[19] Special Project Grants were competitive grants awarded for the development of long-range programs planned with the involvement of a librarian.

Simultaneously with the establishment of the new title, the U.S. Department of Education's Office of Educational Research and Improvement funded a program through its Library Programs section called TRAILS (Training and Assistance for Indian Library Services). This program provided much needed training, consultation, and assistance to over 150 tribes that were establishing or enhancing libraries under this new federal program.[20]

County Library Involvement

In 1986, personnel from the Outreach Division of the San Diego County Library (SDCL) followed up on a request from the Manzanita Band of Mission Indians to provide technical assistance and training for the establishment of Indian libraries. Shortly thereafter, the San Diego County Library began to formalize a commitment to working with other nearby reservations in order to support their efforts to provide library services to reservation residents. During 1985 and 1986, 13 of the reservations in San Diego County were awarded basic grants. Reservation representatives realized that although they were receiving money to support library operations and the acquisition of library materials, further information was needed to set up and run a library.

It was at this point that the San Diego County Library System entered the tribal library development picture in a formalized way. The San Diego County Library consisted of 33 branches, two bookmobiles, and an administration and processing center which served a 3,822-square-mile area of unincorporated territory and 11 cities. Its stated mission was to serve all the residents of the county, including those living on the county's 18 Indian reservations, although service to the latter population had been fragmentary and largely through providing access to existing facilities.

Recognizing the growing need for improved Indian access to library services and responding to tribal initiatives to establish tribal library and information systems, SDCL Outreach Services set up a general workshop on the Barona reservation in March 1986. The County Library also earmarked $3,000 from its materials fund to purchase materials for outstationing on the reservations.

At the end of the workshop, SDCL trainers realized that much more training and one-on-one technical assistance would be needed. Handouts at the workshop included general publications on how to organize and operate a small library and a survey to determine the kinds of materials needed. Results from the survey indicated that the reservations needed materials in virtually every category and age level. In June 1986, the SDCL participated in a second workshop on Indian Libraries, sponsored by the California State Library. Representatives from seven reservations attended this workshop. The California State Librarian recommended in a follow-up memo that," . . . county libraries offer on-site or in-library training and technical assistance to those involved in establishing tribal libraries."

As a result of this workshop, SDCL Outreach workers began assisting the Viejas Indian School in setting up a library. Used furniture from the SDCL and donated shelving and materials from other sources were employed at Viejas and Outreach staff assisted with sorting and processing books. This demonstration of concern and provision of assistance on the part of SDCL generated additional and immediate calls for assistance from other reservations. This developing collaborative relationship was built on the demonstration of commitment on the part of the SDCL and a growing trust in that institution by Indian reservation administrators. Tribal members and library developers had, at last, found a local government institution which was perceived to have no ulterior motives in assisting the tribes other than the shared objective of developing libraries for reservation use and control.[22]

Indian Library Services Project

In 1987, the SDCL Outreach Division wrote a successful LSCA grant for the Indian Library Services Project (ILSP), whose goal was "to increase awareness of and access to library materials and services on San Diego County's Indian reservations."

ILSP objectives for the first year were to hire a project director and part-time library assistant who would complete the following tasks:

1. Working cooperatively with tribal representatives, library and information needs will be assessed on at least six reservations, and action plans for establishing library services will be developed.
2. Project staff will assist at least three reservations to set up tribal libraries, providing some bookshelves and furniture, technical assistance in ordering and processing books, and training for tribal library staff in how to operate their library.
3. In order to increase appreciation of library materials and to assist in motivating bands to participate in the project, a collection of 100 popular and reference books about Native Americans will be presented to the 10 largest (in population) reservations.
4. Using a variety of funding sources, the project will augment the book collections of six of the reservations.
5. The project staff and regular County Library staff will work to increase the awareness of library services by participating and interfacing with various educational, health, and social programs which currently exist on several reservations.[23]

During the proposal writing process, a group of educators representing Viejas, Sycuan, Barona, Pala, Pauma, Rincon, La Jolla, and Santa Ysabel reservations was asked to serve as the project advisory board. This group, called the "Indian Educators' Learning Circle," provided proposal input and continued to offer the Indian perspective throughout the project. The ILSP Director, hired in 1988, came to the project with over seven years of experience and education related to Indian libraries. The ILSP director contacted the various tribal governments to determine the level of interest in library services and to discover which reservations had a "library space" or a developing library collection. A needs assessment instrument, expanding on the work of the California Ethnic Service Task Force Collection Evaluation Project, was used to determine collection, staffing, and facilities needs. The survey also sought information on any constraints to implementation of library services on each reservation.[24]

Only three reservations had libraries. These "libraries" had small collections with some limited use. In its first year, ILSP focused on the three reservations (Pauma, Viejas, and Campo) which had, at a minimum, a facility, a small collection, and most importantly, a commitment to providing library services to their communities. The ILSP objective was to capitalize on existing strengths so that the first three libraries might serve as replicable models for other reservations. At this point in the ILSP implementation, three other reservations had room for library facilities but no materials, and two simply had some books in boxes. Only one reservation had a paid staff member who was only funded at quarter time.

By the end of the first year of the ILSP, five libraries were open and operational. Three libraries held grand openings and one reservation had secured an LSCA special grant. Ten core collections comprised of basic reference works and books by and about Indians were presented to reservation libraries. These collections became the source of considerable pride for tribal members as they now not only had the opportunity to read about other Indians, but also had access to information about their own people which heretofore had been limited to oral narratives or held in distant and generally inaccessible public, school, or university libraries. The significant human impact that ILSP had in its first year was illustrated by the participation of over 100 reservation children in the summer reading program. Tribal members expressed both pride and gratitude in this important library function since it was profoundly and immediately apparent that none of these children had ever participated in any reading program whatsoever.[25]

ILSP staff discovered during the first year that *time* was the key component for a successful project. Establishing genuine connections based on mutual respect and trust between the reservations and ILSP staff took time. During the second quarter, although 60 visits to reservations were made, that amounted to only two visits per month per reservation. More time was needed to build relationships and confidence in the staff and in the project objectives. During ILSP's first year, tribal elected leaders changed on four different reservations and office staff changed on two. These circumstances required the development of new relationships, the education of new partners about the library and its operations, gaining acceptance of the Indian/non-Indian collaboration, and the commitment of the new leadership to continuation of this infant program of development. During this period, some reservations were challenged by environmental problems such as tornadoes, floods and forest fires, and others experienced problems of tribal governance such as funding inconsistencies, internal political disputes, and lawsuits. For those reservations, the challenges presented precluded any involvement in the library project.

The second component that ILSP staff identified as essential to the project's success was the hiring and retention of tribal members or other Indian employees in library staff positions. Clearly, local personnel would be better able to assess local information needs and to work with their own communities in developing goals and objectives. Lack of staff was attributed to two factors; absence of revenue and lack of understanding on the part of tribal leaders as to the nature of tasks performed by a library staff person. The first factor was largely outside the control of reservation administrations: scant resources had to be applied to critical staff positions and functions on the reservation, rather than to library functions which were considered somewhat of a luxury. The second factor was mitigated somewhat over the second year of the program as tribal leadership gained a greater understanding of the functions of and necessity for library facilities and competent staff.

Based on the accomplishments and lessons learned during the first year of operation, as well as new challenges presented, project staff applied for and were awarded a second grant for fiscal year 1988-89. Project staff welcomed the opportunity to "build on the relationships and structures so carefully developed in the first year."[26] Specific library needs, uncovered in year one, could be addressed in year two. During the second year, the project would expand to more reservations, involve more non-book media, and would include a local staff component to provide more programming and service.

By the end of the second year, the Indian Library Services Project had accomplished its goal, which was to increase awareness of and access to library materials and services on San Diego County's Indian reservations. Specific project accomplishments included the establishment of six reservation libraries, the development of collections for these libraries consisting of hundreds of new and used books, clearly marked Indian book collections, historical photographs, video and audio tapes, and a variety of archival materials. The project furnished these libraries with shelving and furniture, and with display cabinets and circulation desks which were custom-made by the SDCL carpenter. In addition to the establishment of full library services on the six target reservations, books, magazines and furniture were placed at six other reservations.[27]

ILSP Project staff felt that the most important accomplishment in mitigating the effect of cultural differences and increasing access to libraries by Indian people was the hiring and training of four local American Indians as library managers. ILSP provided nine full-day workshops for tribal library staff and other interested reservation residents. The workshops covered basic library functions including cataloging, library services, reference interviews, materials selection, storytelling, literacy tutoring, archives management, Indian law research, and grant wanting. This instruction was reinforced with one-on-one training as part of bi-weekly visits by SDCL Outreach workers. Over 25 reservation residents attended at least one workshop and 10 became literacy tutors. Five research tours

were planned and funded by the project. Tribal library managers visited Southern California institutions with extensive Indian collections, such as the San Diego Museum of Man and the Southwest and Malki Museums in Los Angeles and the Morongo Reservation, respectively. The project director, in the final summary report, commented on the importance of these tours:

> The physical results of the research tours were also important to the success of ILSP. The archival materials and historical photographs attracted adults to the libraries. The archival records were used to research hotly debated current issues before the tribal council. The photographs became the focus of many conversations, literacy lessons, and cross-generational teaching. These materials changed the image of a library to a cultural resource center. More than the Indian books, these special materials made the library into a local community organization, rather than an extension of a non-Indian institution.[28]

Project staff also conducted a public relations campaign to increase awareness of library services and materials on the reservation, as well as in the urban Indian community. ILSP staffed an information booth at almost every Indian community event during its second year.

Results

ILSP increased Indian access to the County Library's collections and services. One of the regional reference centers in the SDCL system reported that in one year they received over 50 reference questions, circulated over 300 books, and mailed 450 pages of photocopied material for ILSP-related patrons. ILSP borrowed an average of five films or videos per week and two exhibits per month. Access to library programs was improved through ILSP as well. The summer reading program, which drew 100 children during the project's first year, doubled Indian participation during the second year. A high point in the development of libraries as tribally self-determined institutions came during the second year when Indian library managers initiated and implemented their own culturally-appropriate puppet shows, storytelling sessions, and summer reading motivation and incentive programs.[29]

Project staff, anticipating the end of LSCA funds after year two, worked with SDCL administrators in drafting a "Plan of Cooperation" between the SDCL and the Indian libraries. The plan clarified the fact that the Indian libraries would not be considered "branch libraries," in keeping with the concept of tribal sovereignty. Yet the SDCL was to continue a cooperative relationship with the Indian libraries since reservation residents were also county residents. The plan of cooperation provided the following:

1. an institutional borrower's card for each Indian library which allowed access to the county's collection;
2. a "sister" library connection which allowed the Indian library to channel reference questions and interlibrary loan requests through the nearest SDCL branch library;
3. the ILSP assistant position was to become a permanent County Library position responsible for maintaining a direct link between the reservation libraries and SDCL; and
4. delivery services, invitations to attend workshops, ability to borrow various materials including exhibits and puppet shows, summer reading program supplies, and consideration in all future grant proposals was accorded to all Indian reservation libraries.[30]

In retrospect, it is not surprising that the major portions of the plan of cooperation were congruent with both the philosophy and practice of Indian library development as articulated by the National Indian Education Association Library Project of 1971, by Forbes and others at the 1978 White House Pre-Conference, by WHCLIS, NIOLB, Title IV of the LSCA, and by TRAILS. Throughout the development of the San Diego Indian libraries, these policies, with self-determined input from tribal participants and collaborative assistance from existing public library systems, formed the guidance and guideposts for the potential

establishment of a county-wide Indian library system on all 18 reservations. Further, the San Diego cooperative project appeared to address Indian library development conforming to the 10 points articulated in the 1992 NCLIS report on "Improving Library and Information Services for Native American Peoples:

1. Develop consistent funding sources required to support improved Native American library and information services;
2. Strengthen library and information services training and technical assistance to Native American communities;
3. Develop programs to increase tribal library material holdings and to develop relevant collections in all formats;
4. Improve access and strengthen cooperative activities;
5. Develop state and local partnerships;
6. Establish general federal policy and responsibilities;
7. Identify model programs for Native American libraries and information services;
8. Develop museum and archival services for preserving Native American cultures;
9. Encourage adult and family literacy programs, basic job skills training, and strengthen tribal community colleges and libraries; and
10. Encourage application of newer information network technologies.[31]

With the convergence of thought inherent in the collaboration of the county and the tribes, it might be assumed that mutual and continued success was assured, especially given the project director's summation of the projects' accomplishments in the final summary report: "The success comes not directly from ILSP actions, however, but from ILSP's work with the People. There is no trick to giving and receiving material aid. It is changes in attitudes, knowledge and connections which make a difference in library service and in people's lives."[32]

The clue to the less-than-optimal implementation of the Indian library system lies in the previous quote: *there is, in point of fact, a trick to giving and receiving material aid.* In this case, both county library and tribal library systems had vested the entire operation of their collaborative project in a system of grant dependency. Rather than expending shared effort on the fundamental need for consistent funding given as the first priority in the 1992 NCLIS report, the collaboration fell prey to economic downsizing and fiscal retrenchment brought on by the national recessionary trend. Rather than focusing on the economic viability of the collaboration, the parties focused almost entirely on the process of collaboration. This process was certainly well intentioned and as noted, contributed to rapid and measurable positive change.

The seven reservation libraries still exist; however, one Indian library manager expressed that it was a miracle that they did.[33] The Plan of Cooperation now exists largely as a document of intent rather than one of implementation. The erosion of key components of the plan has resulted in the loss of a number of things upon which the Indian community came to depend. The project's assistant was one of 50 people in SDCL to receive a layoff notice. Outreach workers are now stationed in the branches of the SDCL system and are not sanctioned to visit the reservation libraries due to extreme staffing shortages. From the tribal librarians' standpoint, the lack of ongoing outreach, training, and technical assistance, so prevalent in the early developmental years, was a major factor in the decline of effectiveness of the tribal library system.[34]

Lessons Learned

The lessons learned from this experience affect both parties. Non-Indian institutions could certainly learn more about the diverse populations they serve, including how best to serve individualized need, how to develop and maintain trust and cooperation, and how not to commit to the long-term unless one can provide the resource base in the long-term. The public library in this case was caught in the dilemma of being committed to serve all county residents without having the financial ability to serve all county residents: the last served became the first severed.

Tribal institutions likewise have lessons to be learned. The first of these reinforces the sometimes neglected proposition that grant dependency is incongruent with sovereignty and self-determination. While this is often clear in governmental operations, economic, employment, and education development, it is often overlooked when dealing with peripheral tribal operations such as libraries and other services seen as "nice to have" but not essential. Tribal governments did not foresee that the libraries would become as important in the fabric of tribal life as they did for some reservations; therefore, they were unprepared to incorporate library continuation into ongoing tribal operations plans. The second lesson is that access to information is a tribal imperative which both builds from and feeds sovereignty. The information age is a reality with which tribes must deal, just as certainly as they must deal with the reality of financial constraint. Efficient access to information is mandated in all aspects of tribal life, from education to economic development to tribal capacity building, if tribal character is to persevere. It is virtually incumbent on sovereign tribes and nations to infuse information access and information literacy into the fundamental survival processes of self-governance. In great measure, tribally-controlled libraries hold an important key to the future ability of tribal governance to implement sovereignty and self-determination.

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[1] The authors would like to acknowledge the archival contributions, anecdotal data, and personal insights provided by past and present county and Indian library personnel, consultants, tribal members, and others associated with the development of the tribal libraries which are the subject of this article. In particular, we thank Karen Brown, Robert Brown (Diegueno), Vera Brown (Kumeyaay), Marsha C. de Baca, Jane Dumas Kumeyaay), Patricia Friend (Pueblo), Julie Labreak (Kumeyaay), Mark Macarro (Luiseno), Laura Mitchell, Victor Peralta (Chumash), Florence Ponchetti (Diegueno), Henry Rodriguez (Luiseño), Mary Ellen Rubalcaval Isabel Sanchez, and Mary Uybungco.

[2] Bureau of Indian Affairs, *Indian Service Population and Labor Force Estimates* (U.S. Department of Interior, 1991). Tribal libraries and the tribally-enrolled reservation populations they serve are indicated in parentheses. Barona (450), Campo (223), Pauma (132), Rincon (631), Santa Ysabel (953), Sycuan (120), and Viejas (213). The actual reservation population served may be considerably higher, as in the case of the Rincon reservation where authorities indicate 1,065 persons living on tribal lands. This latter figure does not appear in either census or labor force data. A conservative estimate is that tribal libraries serve at least 25% more reservation residents than labor force data indicate, or approximately 3,403 persons. In their remote locations, tribal libraries are resources for a non-reservation population as well. Usage data reported by tribal libraries personal communication with R. Brown, P. Friend, J. Labreak and M. Macarro, July 1993) indicate that as many as 1,000 additional off-reservation persons may be served annually by these facilities.

[3] Mary Hobson, Principal Librarian, San Diego County Library, personal communication. The San Diego County Library is currently facing a projected 1993-1994 fiscal year revenue reduction of $2.6 million. Given this level of fiscal retrenchment, some smaller county library facilities may close while those still in operation will suffer severe reductions in staffing and services.

[4] The Library Services for Indian Tribes and Hawaiian Natives Program, Title IV of the Library Services and Construction Act, was enacted in 1984 and authorized the Secretary of Education to award Basic and Special Projects Grants to federally recognized Indian tribes and to organizations primarily serving Hawaiian natives.

[5] U.S. National Commission on Libraries and Information Science, *Pathways to Excellence: A Report on Improving Library and Information Services for Native American Peoples. Summary Report.* NCLIS, December 1992. p. 1.

[6] Edith Buckland Webb. *Indian Life at the Old Missions.* (University of Nebraska, 1982) 93, 302-303, *Asistencias* are outlying chapels and smaller missions associated with the 21 California missions established by Father Junipero Serra. They were generally established at Indian village sites at some distance from the main mission and acted as points for religious education and conversation, gathering points for native laborers, and as outposts for military control. The *asistencias in San* Diego County under discussion were associated with the Mission San Luis Rey in Present-day Oceanside and Mission San Diego de Alcala in San Diego proper.

[7] Mr. Steve Ponchetti, personal communication, May 1963, August 1985 and Mrs. Jane Durnas, April-May 1993. Author's (Whitehorse) field notes.

[8] Congress of the United States. House Concurrent Resolution 108.1953. Termination ended the government to government relationships between tribe and the federal government in a number of states, including California. The absence of other than caretaker governance under this policy resulted in a number of incomplete archival histories and loss of much tribal information which had to be reconstructed after the end of the termination policy.

[9] Henry Rodriguez, personal communication April 1980, June 1988, June 1993 and author's (Whitehorse) field notes. It is standard practice for the Bureau of Indian Affairs to require tribal

resolutions and documentation for tribal governmental and administrative actions from all tribes under its authority. Grant applications, reports, results of tribal elections, economic development information, and fiscal information are routinely reported to the Riverside, CA Sub-Agency of the Bureau of Indian Affairs by all the San Diego County reservation governments.

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[15] Ibid.

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[17] Henry Rodriguez, former Executive Director of the Southern California Reservation Planning Organization (SCRAP). Personal communication, June 1993.

[18] U.S. National Commission on Libraries and Information Science, "Pathways to Excellence: A Report on Improving Library and Information Services for Native American Peoples." Summary report. December 1992. p. 7.
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[20] Lotsee Patterson, *Tribal Library Procedures Manual.* TRAILS (Training and Assistance for Indian Library Services), U.S. Department of Education, 1986.

[21] Laura Mitchell, *Indian Library Services Project Application for Library Services and Construction Act funding for FY 1987-1988.* Workshop featured Martin Gomez, State Library consultant and Lotsee Smith and Rick Heyser from the TRAILS Project. California State Librarian, Gary Strong.

[22] Vera Brown, Viejas Reservation representative to Concerned Community and Mobilization Project (CCAMP), Southern Indian Health Council, Inc. Personal communication, April 1993.

[23] Laura Mitchell, *Indian Library Services Project Application for Library Services and Construction Act funding for FY 1987-1988.* p. 2.

[24] Ibid, p. 8.

[25] Robert Brown, personal communication, July 1993. Karen E. Brown, *Indian Library Services Project Final Summary Report*, ILSP,1988. p. 3.

[26] Catherine E. Lucas, *Indian Library Services Project II Application for Library Services and Construction Act funding for FY 1988-89.* ILSP, 1988. p. 2.

[27] Karen E. Brown, *Indian Library Services Project Final Summary Report,* 1988. ILSP, 1989. p. 2.

[28] Ibid, p. 8.

[29] Patricia Friend, Pauma Reservation Library Manager, Personal communication, December 1988.

[30] Karen E. Brown, *Indian Library Services Project Final Summary Report,* 1988. Plan of Cooperation addendum.

[31] U.S. National Commission on Libraries and Information Science, "Pathways to Excellence: A Report on Improving Library and Information Services for Native American Peoples." Summary report. December 1992. p. 9-20.

[32] Karen E. Brown, *Indian Library Services Project Final Summary Report,* 1988. p. 7.

[33] Personal communication with Mark Macarro, Rincon Reservation Library Manager; July 1993.

[34] Personal communications with tribal library managers Robert Brown (Viejas) Julie Labreak (Sycuan), and Mark Macarro (Rincon), July 1993.

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On the Scene

1995 Salary Survey Update

by Liana Sayer
Director, Research

An analysis of salary data reported in the *1995 Salary Survey Update* suggest that respondents are enjoying improved fortunes this year. Mean (average) basic annual salaries continued their upward climb in 1995, increasing on average 6.9% for United States respondents and 7.8% for Canadian respondents. In comparison, 1994 mean basic annual salaries increased 4 and .9%, respectively; in 1993, average increases were 1.8 and .5%, respectively.

The average salary increases of respondents also far outpaced cost-of-living increases. While salaries increased on average 6.9 and 7.8% for the United States and Canada, respectively, the Consumer Price Index (CPI) for 1994 was 2.7% for the United States and .2% for Canada. The CPI is a "measure of the average change in the prices paid by urban consumers for a fixed market basket of goods and services." Basically, the CPI measures the purchasing power of consumer dollars by comparing the costs of the "market basket" today with the cost of the same "market basket" in 1982.

Survey Methodology

Since 1967, SLA has conducted a salary survey to collect and analyze relevant compensation data. Prior to 1990, salary surveys were conducted on a triennial schedule. In-depth surveys have been conducted biennially since 1990, with updates occurring in the intervening years, so data will accurately measure compensation trends in the library and information profession.

Reflecting this schedule, the *1995 Salary Survey Update* utilized an abbreviated survey instrument designed to update the more extensive data collected in the 1994 biennial survey. The *1995 Update* also contained several new questions designed to allow initial explorations of the impact larger economic issues may be having on the profession, in particular unemployment resulting from library closings or downsizings.

Salary data reported for SLA members is as of April 1, 1995. Canadian salary data is reported in Canadian dollars; the exchange rate on April 1 was approximately Canadian $1.39—United States $1.00. The "basic annual salary" is defined as wages associated with principal professional employment, not including bonuses, overtime, or other payments for professional services. Respondents who reported that they were unemployed on April 1, 1995, or who reported part-time employment, were not included in calculations of annual salary means or medians. Reported salary means and medians represent respondents employed on a full-time basis. Data on part-time compensation is reported in terms of median and mean hourly wages.

Survey Administration

During April 1995, survey forms were mailed to a random sample of 25% of SLA's United States and Canadian members and associate members. A total of 1,466 valid responses were received, representing a 50.3% return rate.

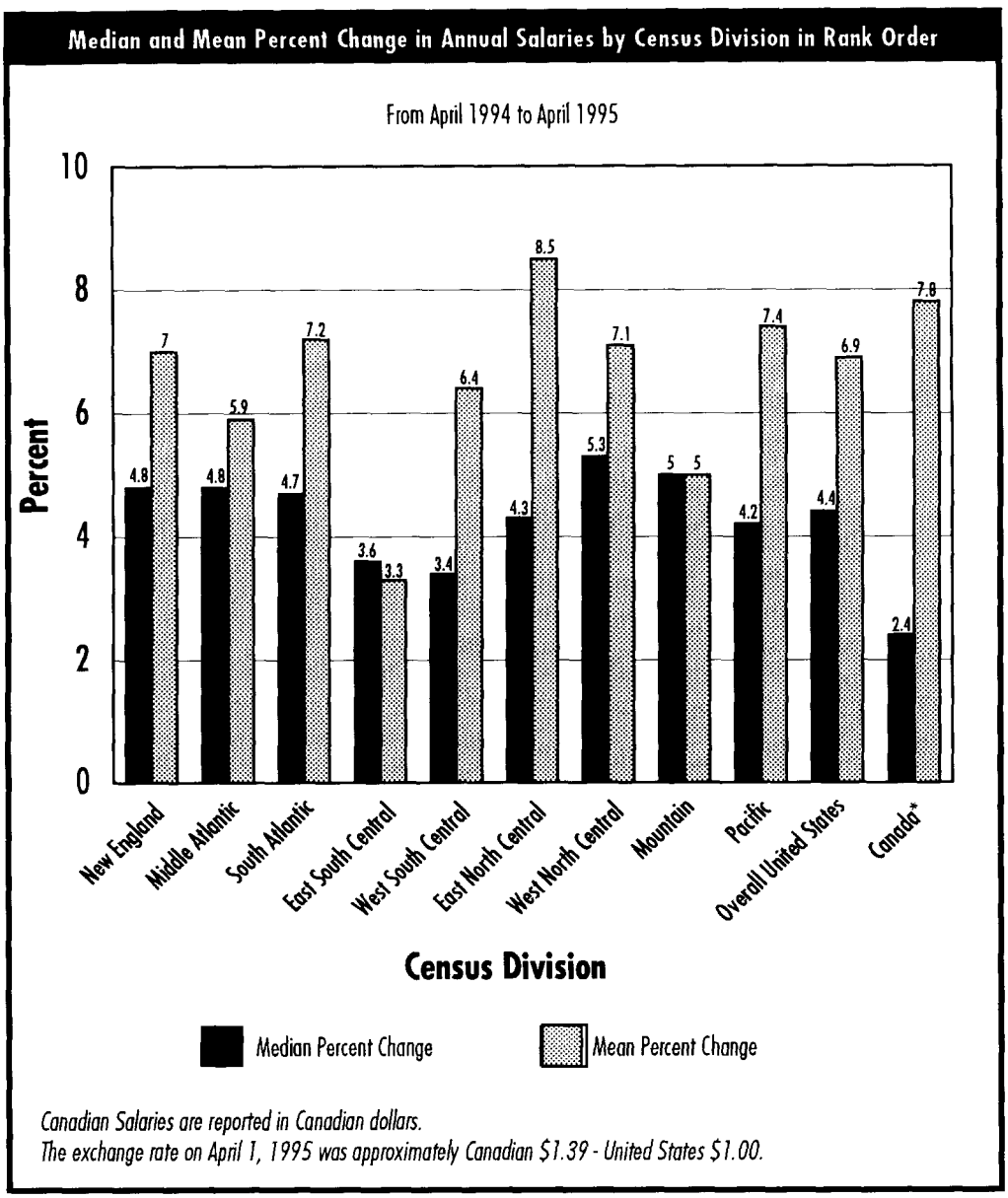
The high response rate provides a strong

degree of confidence that the results of the survey are indicative of the membership as a whole. Further, it provides a smaller margin of error in any statistical estimates which may be made of the membership population based on the sample data.

Partnership with ARI

Design and administration of the *1995 Salary Survey Update* was done in partnership with Association Research, Inc. (ARI); SLA also collaborated with ARI on the 1994 Bien-

Figure 1



Canadian Salaries are reported in Canadian dollars.
The exchange rate on April 1, 1995 was approximately Canadian $1.39 - United States $1.00.

nial Salary Survey. Since 1984, ARI has worked with trade associations and professional societies to conduct salary and benefits surveys. A member in good standing of the Council of American Survey Research Organizations (CASRO), ARI has comprehensive experience in designing, tabulating, and interpreting surveys, coupled with extensive knowledge of the association community. Data entry and tabulation were handled exclusively by ARI, ensuring a high degree of confidentiality and reliability of the data.

Mean and Median Annual Salary Data in 1995

As of April 1, 1995, the average (mean) salary of U.S. respondents was $45,912 and the average salary of Canadian respondents was $49,030 (Canadian dollars). The median salary of U.S. respondents was $42,775, while for Canadians, the median salary was $43,502 (Canadian dollars). The median represents the salary at the midpoint of salaries reported, or the 50th percentile of respondents. In other

Table 1

Geographic Salary Distribution in Rank Order of 1995 Median

as of April 1, 1995

Census Division	5th Percentile	First Quartile 25%	Median 50%	Third Quartile 75%	95th Percentile	Number	Mean
Middle Atlantic	$28,100	$38,587	$48,120	$59,000	$83,800	262	$50,213
Pacific	$30,000	$36,480	$45,000	$53,000	$71,040	201	$46,672
New England	$27,819	$35,000	$43,098	$53,820	$71,000	91	$45,713
South Atlantic	$26,900	$34,235	$42,855	$53,685	$75,000	212	$45,492
East North Central	$25,542	$33,746	$40,000	$48,850	$69,750	180	$45,695
Mountain	$24,000	$31,529	$40,000	$48,000	$54,500	44	$39,889
East South Central	$24,038	$29,640	$39,580	$49,000	$81,000	31	$42,487
West North Central	$21,000	$30,100	$39,000	$51,000	$60,000	55	$40,642
West South Central	$21,000	$32,574	$37,028	$45,300	$61,500	84	$40,285
Overall United States	$26,458	$35,000	$42,775	$53,000	$75,000	1,160	$45,912
Canada*	$31,629	$38,513	$43,502	$53,000	$67,000	108	$49,030

**Salaries reported in Canadian Dollars. The exchange rate on April 1, 1995 was approximately Canadian $1.39 - United States $1.00.*

words, one-half of the salaries reported are less than the median, and one-half are greater than the median. When the mean salary and median salary diverge significantly, the mean is being affected in some way. When the median salary for any group is less than the mean salary, more respondents are below the average than above. If the median salary is substantially lower than the mean salary, the sample includes a few relatively low salaries;

Table 2

1995 Salary Distribution by Job Title - United States

JOB TITLE	5th Percentile	First Quartile 25%	Median 50%	Third Quartile 75%	95th Percentile	Number	Mean
Manager	$28,755	$38,805	$46,700	$58,170	$83,000	569	$50,281
Assistant/Section Head	$29,600	$36,344	$43,900	$51,870	$64,500	170	$44,468
Libr./Info. Specialist	$25,000	$32,000	$37,000	$45,500	$59,000	335	$39,639
Support Staff	$11,000	$21,000	$25,300	$27,228	$60,148	13	$26,001
Non-Library/Info. Center	$23,500	$35,250	$43,700	$55,274	$91,270	56	$47,130
Self-Employed	$18,500	$30,000	$50,000	$70,000	$80,000	9	$47,800

Table 3

1995 Salary Distribution by Job Title - Canada

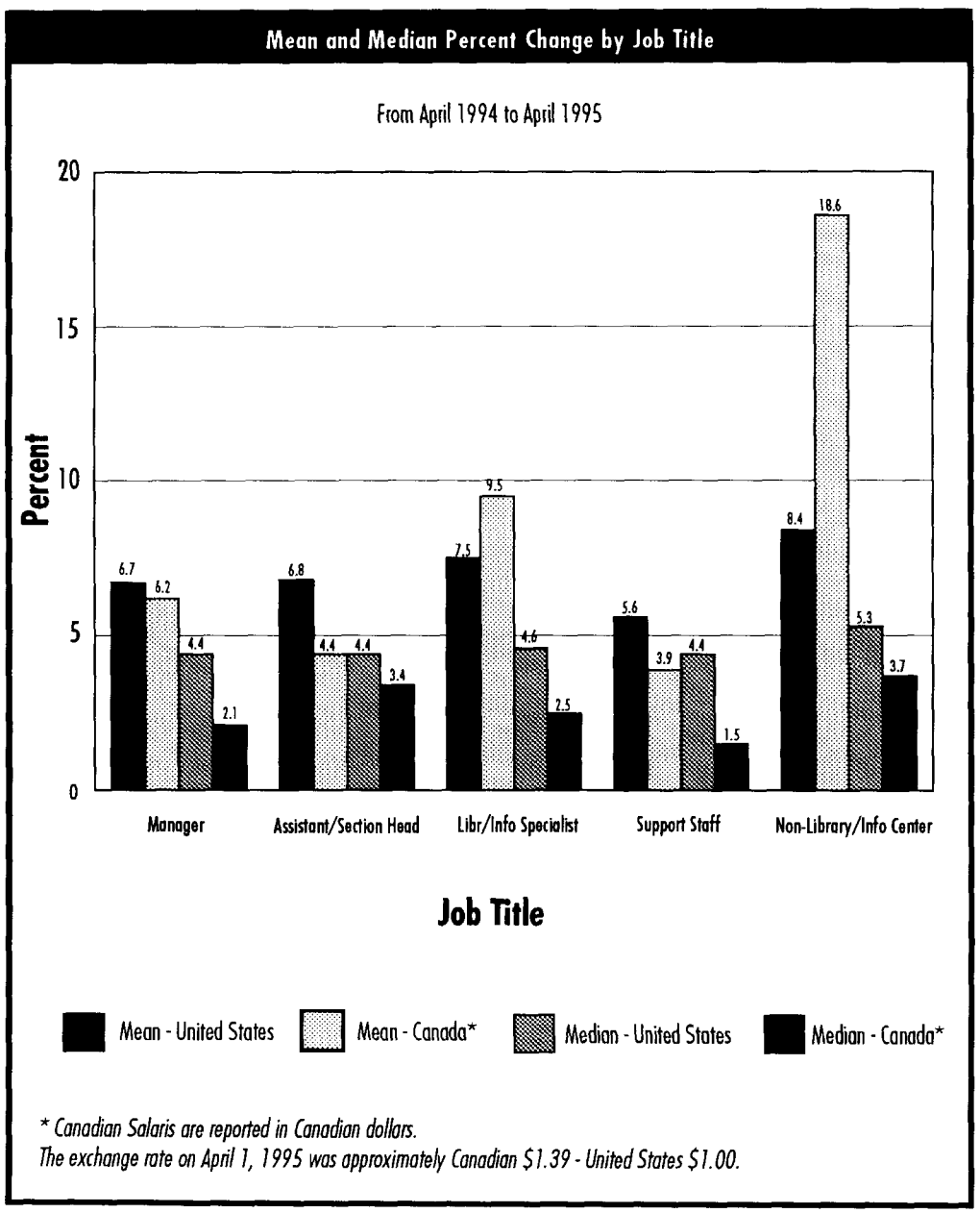
JOB TITLE	5th Percentile	First Quartile 25%	Median 50%	Third Quartile 75%	95th Percentile	Number	Mean
Manager	$30,500	$42,800	$49,919	$56,000	$72,000	54	$55,222
Assistant/Section Head	$32,000	$34,000	$39,000	$56,870	$60,000	11	$43,372
Libr./Info. Specialist	$34,000	$36,500	$41,250	$43,968	$54,000	30	$41,615
Non-Library/Info Center	$40,000	$41,850	$48,000	$55,500	$70,000	8	$50,087

Job title categories with a response rate of five or less have been dropped from the table. Salaries are reported in Canadian dollars. The exchange rate on April 1, 1995 was approximately Canadian $1.39 - United States $1.00.

if the mean is substantially higher than the median, than the sample includes a few relatively high salaries.

Figure 1 reports median and mean percent changes in basic annual salaries by the nine U.S. Census Divisions, and for the United States and Canada overall. Regional salaries rose from 1994 to 1995 in all Census Divisions, as well as in Canada. Increases in mean salaries ranged from 8.5% in the East North Central Division to 3.3% in the East South Central Division, while increases in median

Figure 2



** Canadian Salaris are reported in Canadian dollars.*
The exchange rate on April 1, 1995 was approximately Canadian $1.39 - United States $1.00.

salaries ranged from 5.3% in the West North Central Division to 3.4% in the West South Central Division.

Table 1 reports salary distribution in rank order of 1995 median salary by Census Division, and for the United States and Canada overall. The significant change from the 1994 rankings is the switch of the Mountain and West South Central Divisions, with the Mountain Division moving up to the number six spot while the West South Central Division dropped to the last ranking. Other Census Divisions maintained their respective 1994 rankings.

Salary Distribution by Job Titles

Tables 2 and 3 report salary distribution by job title for the United States and for Canada, respectively. Respondents in all positions reported a wide range of salary figures, which is consistent with data reported in prior surveys. It also suggests that respondents are employed in a variety of libraries or information centers which run the industry spectrum, while also being suggestive of the broad range of tenure and experience of the respondents.

Figure 2 reports mean and median salary increases by job title for the United States and Canada. Mean and median salaries increased across job titles for all respondents. Canadian mean percentage increases ranged from 3.9% for support staff to 18.6% for non-library/information centers. The 18.6% figure must be interpreted with caution, however, due to the small number of respondents in this category. In the United States, differences were less substantial, ranging from a mean increase of 5.6% for support staff to 8.4% for non-library/information centers. Mean and median increases were higher for staff in non-library/information centers than for staff in any other category for both the United States and Canada, which may indicate that respondents working outside the traditional library domain reap more lucrative financial rewards.

Salary Distribution by Experience

Table 4 reports mean and median salaries by number of years of professional library experience for the United States and Canada. The

Table 4

April 1995 Mean and Median Salaries by Library Experience

For the United States and Canada

Professional Library Experience	Mean - United States	Median - United States	Mean - Canada**	Median - Canada**
2 years or less	$37,166	$33,000	$39,118	$36,750
3-5 years	$37,686	$35,950	$41,093	$40,000
6-10 years	$41,291	$40,000	$54,945	$43,197
11-15 years	$46,281	$44,183	$48,529	$46,750
16-20 years	$50,266	$48,700	$49,628	$50,000
21-25 years	$56,486	$52,966	*	*
26 years or more	$55,811	$53,472	*	*

**Categories with a response rate of five or less have been dropped from the table.*

***Canadian salaries are reported in Canadian dollars. The exchange rate on April 1, 1995 was approximately Canadian $1.39 - United States $1.00.*

data suggest that experience pays off for members of the field. In the United States, members with 21 or more years of experience earned 51.9% more than members with two or less years of experience, while respondents with 16 or more years or experience earned 35.2% more. For Canadians, members with 16 or more years of experience earned 26.8% more than respondents with two or less years of experience. The average number of years of professional library experience was 13.5 for the United States, and 11.4 for Canada.

Part-time Hours and Earnings

One hundred twenty-three respondents, or 8.3% of the total sample, reported part-time employment status. The average number of hours worked per week for United States respondents was 26.9; for Canadians, it was 24.6. The mean hourly rate for the United States was $19.79, a 6.7% increase from 1994; the median hourly rate was $18.00, a 4.5% increase. For Canada, the mean hourly rate was $24.25, an increase of 4.2% from 1994; the median hourly rate was $24.00, a decline of .04%.

Unemployment/Library Closings

A total of 110, or 8.5%, of U.S. respondents were unemployed at some time during the period between April 1, 1994 and March 31, 1995. Of Canadian respondents, 12, or 9.8%, were unemployed at some time over the same period. In comparison, the 1994 overall unemployment rate for the United States was 6.1%; for Canada, it was 10.4%. The average number of months unemployed was 6.1 for the United States, and 8.3 for Canada. Only 6.2% of U.S. respondents, and zero of Canadian respondents, reported their reason for unemployment as due to a library closing. Library downsizing was reported as the reason for unemployment by 7.5% of U.S. respondents and 22.2% of Canadian respondents. The majority for both the United States and Canada, at 86.2% and 77.8% respectively, however, listed "other" as their reason for unemployment. The data are only suggestive at this time, due to the small percentage of unemployed members in the sample. Further analysis will be done with data gathered in the *1996 Biennial Salary Survey.*

Conclusion

Data from the *1995 Salary Survey Update* are consistent with compensation trends from previous surveys, indicating that overall special librarians are faring well in the marketplace. Additionally, the relatively high 1995 median and mean salary increases, coupled with the small percentage of respondents reporting periods of unemployment, suggest a robust environment for special librarians and information professionals.

Questions, comments and suggestions are welcomed and should be directed to Liana Sayer, SLA Director, Research, at (202)234-4700, ext. 615, or via the Internet: liana@sla.org.

Book Reviews

Horton, Forest Woody, Jr., *Analyzing Benefits and Costs: A Guide for Information Managers*, Ottawa, ON: International Development Research Centre (IDRC), 1994. 285p. ISBN: 0-88936-721-3. One (1) 3.5" computer disk included. Microfiche edition available.

Analyzing Benefits and Costs: A Guide for Information Managers is a guidebook to help information professionals in developing countries convince their authorities that putting money into information systems and services will pay off. The book is described as a "practical guide designed specifically . . . to examine . . . the benefits versus the costs of potential resource allocations to information activities." The purpose of the book is "to undertake the type of analysis that will help demonstrate. . . the value of investing in information."

This "benefit:cost analysis" (i.e., BCA—known by some as a CBA, a "cost-benefit analysis") guide is presented in three parts. The first, a management guide, defines BCA as a 10-step program, describes the BCA process, and examines various barriers to carrying out a BCA in a developing country. Part two is a technical guide that takes the reader through defining goals and objectives, formulating assumptions, identifying and evaluating alternatives, estimating costs/benefits, presenting results, and selecting a preferred (however defined) alternative. Several case studies are used as examples. Part three is a guide to the computer software (Excel 3 for Windows QuickStart) provided at the back of the book. Carefully-presented figures and appendixes are presented throughout the book.

I am impressed by this book. I find it readable and understandable, and the book taught me a lot. I teach about information systems and budgets, and having this book available has helped me to learn and will help me to teach. The book provides specific and practical guidelines to doing an intelligent and professional BCA successfully.

I have only two minor reservations. The first involves the requirement that readers—many of whom are apparently individuals in developing countries—have impeccable knowledge of the English language. Terms such as "information infrastructure improvements," "onerous," "cross-alternative comparative evaluations," "nonquantifiable benefits," "mitigating factors," "prototype pilot test projects," and "integratability" may prove troublesome to readers whose first language is not English.

My second small reservation is that I truly miss an index, with cross-references, at the

back of the book. There is an excellent glossary of 90-odd terms among the appendixes. The book's Table of Contents is detailed and self-explanatory. However, especially with a reading audience from non-English-speaking developing countries, an alphabetic index would both supplement and enhance.

These concerns aside, sincere congratulations are due to Woody Horton for a hard job well done. Recommended.

Alice Sizer Warner, teacher, writer, consultant, Information Guild, Lexington MA.

Martin, Murray S., *Collection Development and Finance: A Guide to Strategic Library Materials Budgeting.* Chicago, IL: American Library Association, 1995. 126p. ISBN: 0-8389 0648-6.

Both academic and public libraries are under a great deal of pressure to spend their materials budgets. Murray S. Martin, an accountant and librarian, has gathered the information needed to proceed through the library budget process in this book. *Collection Development and Finance* examines the budgetary process with numerous examples of budgets focusing on academic and public libraries. Its main issue is the basic understanding of the partnership between the collection development process and the financial aspects of the budget. Martin uses many examples to demonstrate the steps involved in setting up the materials budget, monitoring procedures, making midyear adjustments, and closing out the budget year. He presents a strategic examination of the budget procedure and the long-term goals of a library's collection development concisely and succinctly.

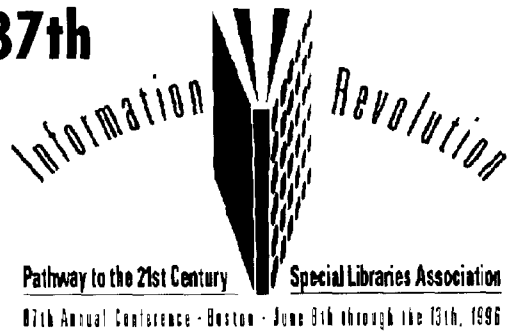
This slim book will be useful to any librarian involved in the materials budget process–especially library directors. Martin explains in laymen terms what the financial officers of the institution are asking and he gives numerous examples on how to find the answers to their questions. His step-by-step illustrations make the procedure of preparing a budget easy, either for the first time or the hundredth. *Collection Development and Finance* covers the subject in-depth, beginning with the traditional budget process and covering special funds, increases, decreases, and making budgetary cuts.

Since Martin's subject is collection development and the materials budget, he addresses the rising cost of serials and approval plans. More importantly, however, he devotes a chapter to electronic databases, including the question of access vs. ownership. Electronic publishing, consortium cooperatives, and resource sharing are discussed because they impact strongly on the materials budget and collecting procedures. Today's cost of access must be considered in the budgeting process. Libraries' budget directors must be aware of the hidden cost of access and resource sharing when planning the budget. Libraries must concern themselves with this particular problem and the plethora of online databases and CD-ROMs.

This is an excellent resource for anyone involved in budgeting and collection development. The information is timely and well-organized, and the writing is clear and concise. Each chapter ends with an extensive bibliography. A well-written summary, glossary, and useful index are included.

Lia S. Hemphill, Acquisitions Librarian, Nova Southeastern University, Ft. Lauderdale, FL.

Boston Beckons: The Special Libraries Association 87th Annual Conference



by Kenneth M. Liss

Boston and information. Information and Boston. For more than 200 years, they've gone hand-in-hand: hanging lanterns in the steeple to begin the Midnight Ride; the invention of the telephone in old Scollay Square; the latter day development of the Internet. All these and more have made Boston an important site in the history of information delivery.

That makes Boston the perfect host for the 87th Annual Special Libraries Association Conference with its theme "Information Revolution: Pathway to the 21st Century." Over the next few months, members of the Boston Chapter will present a series of articles in *Special Libraries* and *SpecialList* to help you get ready for SLA '96. We'll provide details of the conference, plus information on transportation, restaurants, museums, shopping, out-of-town excursions, and much more.

We begin here with a little bit of background on what you can expect to see in the city known variously as "Beantown," "The Athens of America" and "The Hub of the Universe."

The City Upon The Hill. Boston traces its roots to a narrow peninsula the native inhabitants called Shawmut. Governor John Winthrop chose the site in 1630 as the Puritans' "City Upon A Hill," the capital of the Massachusetts Bay Colony. In its first two centuries, the city became a center of colonial life, the birthplace of the American Revolution, a great port trading with all corners of the world, and a leader in the movement to abolish slavery. In later decades, Boston was an innovator in social reform and provided "common ground" for the aspirations and struggles of immigrant and ethnic communities. And throughout its history, Boston has won acclaim as a center of civilization, famous for its arts, architecture, literature, learning, and its role in the development of American culture.

All of these aspects of Boston's past will be evident when you visit next spring, woven into the modern-day fabric of the city as it continues to grow and change. Here are a few of the highlights:

The Freedom Trail. Boston's greatest claim to fame arises from its role in igniting the American Revolution in 1775. You'll find many key sites of the Revolutionary and Post-Revolutionary periods along the Freedom Trail, a three-mile long walk marked on the city streets as a narrow line of red paint and red bricks.

Among the sites you'll see are: the Boston Common, the oldest public park in the United States and the starting point for the British troops on their way to Lexington and Concord; the gold-domed State House, seat of Massachusetts government since the 1790s (where else but in Boston could the "new" State House be 200 years old?; the Old State House, further along the Freedom Trail was built in 1713); the Boston Massacre Site of 1770; Faneuil Hall—"The Cradle of Liberty;" Paul Revere's House, the oldest in Boston (built in 1680, some 90 years before Revere

bought it); the Old North Church ("one if by land, two if by sea"); the Bunker Hill Monument; and "Old Ironsides"—the U.S.S. Constitution, now being readied for its own 200th birthday in 1997.

Hertitage and Harbor Walks. Following in the footsteps, so to speak, of the Freedom Trail, are several other city walks highlighting different aspects of Boston's history. The Black Heritage Trail begins at the 1806 African Meeting House, the oldest African American church still standing in the United States, then winds past sites frequented by the likes of Frederick Douglass, Harriet Tubman, and 54th Massachusetts Regiment, the first African American regiment to fight in the Civil War.

The Women's Heritage Trail tells the story of Boston women like religious martyrs Anne Hutchinson and Mary Dyer, writers Phillis Wheatley, Louisa May Alcott, and Elizabeth "Mother Goose" Vergoose, and social reformers Margaret Fuller and Julie Ward Howe. And the Boston Harbor Walk highlights the past and present of the city's waterfront.

Beacon Hill. Home to many of Boston's "first families" since the end of the 18th century, Beacon Hill is a maze of narrow streets filled with Federal era mansions. Here you'll find cobblestones, red brick sidewalks and gas lanterns, plus the Hill's famous "purple panes"—lavender-tinted windows, their color the result of a defect in the 19th century glass, but a status symbol in 20th century Boston.

The North End. "Boston's first neighborhood," the North End, close by the waterfront, was densely populated from the city's earliest days. Home at first to merchants, shipowners and artisans like Paul Revere, the North End has since welcomed successive waves of immigrants to its narrow streets. Irish, Jewish, and Portuguese newcomers have settled here, but today it's the Italians who dominate the North End, with their cafes and restaurants and colorful religious festivals.

The Back Bay. Early in its history, Boston began filling in the water at its edge, creating more land for its growing population. The largest of these landfill projects was the filling of the Back Bay of the Charles River in the second half of the 19th century. At the project's peak, a 35-car train filled with gravel pulled into the Back Bay station every 45 minutes. Even before it was finished, many of Boston's most prominent families began moving to the new neighborhood, and their churches, museums, shopping emporiums, and other institutions soon followed.

Today, the Back Bay remains one of Boston's most vibrant neighborhoods. Residents and visitors alike congregate along the broad tree-lined boulevard of Commonwealth Avenue, the elegant shops of Newbury Street and the popular running, walking, skating, riding, sailing and sitting facilities of the Esplanade along the banks of the Charles.

Copley Square. Copley Square, the heart of the Back Bay, has been described as having more buildings of architectural significance than any public square in the United States. H.H. Richardson's magnificent Romanesque-inspired Trinity Church, designed in 1877, looks across the Square at McKim Meade & White's Renaissance Revival Boston Public Library of 1895. Off to one side is the oddly-named but no-less-impressive-for-it New Old South Church. On the other side is I.M. Pei's 1976 John Hancock Tower, reflecting its elder neighbors and the New England sky in 60 stories of mirrored glass. Nearby are buildings designed by renowned modern architects Philip Johnson and Robert Stern. (Johnson's Boston Public Library addition looks out on the finish line of the Boston Marathon, which winds its way from Hopkinton, MA to the streets of the Back Bay each April).

The Public Garden. Boston's Public Garden, across Charles Street from the Boston Common, was one of the first areas of the Back Bay to be filled in. Saved from the clutches of real estate developers in the 19th century, it remains a lovely botanical garden with a four-acre lagoon crossed by "the world's smallest suspension bridge." Pedal-powered swan boats, operated by the same family since 1877, offer rides on the lagoon in spring and summer. The Bull & Finch Pub, across Beacon Street from the Public Garden, was the inspiration for the TV series "Cheers" and has remained a popular tourist attraction after the series' demise.

THE UNIVERSITY CITY. More than 50 colleges and universities dot the Boston area, and their tens of thousands of students have helped form the character of the city and the region. Across the Charles River in Cambridge are, among others, Harvard, the oldest institution of higher learning in the United States (founded in 1636), and the Massachusetts Institute of Technology. Institutions within the Boston city limits include Boston College, Boston University, Northeastern University, and the University of Massachusetts/Boston. Other well-known colleges in the area include Brandeis in Waltham, Tufts in Medford and Wellesley in, of course, Wellesley.

MUSIC. Music is everywhere in Boston. The Boston Symphony and the Boston Pops play in Symphony Hall. Several of the city's museums and theaters host concert series. There's a vibrant club scene. And in spring and summer, free outdoor concerts take place regularly in Copley Square, at the Hatch Shell along the Charles River and in other locations. Whatever the genre of music you prefer, you're likely to find it here.

SPORTS AND RECREATION. For the baseball fans among you, the '96 conference could be the last chance to visit picturesque Fenway Park, home of the Boston Red Sox since 1912. The team has announced its intention to move to a new stadium by the end of the century, leaving decades of history (and perhaps "The Curse of the Bambino") behind. Basketball and hockey fans—you're already too late: the old Boston Garden closed its doors for good last spring; the NBA's Celtics and NHL's Bruins now call the new Fleet Center home.

For outdoor enthusiasts, the Boston Common and Charles River Esplanade are only the beginning. Boston is awash in green in June, including the "Emerald Necklace," a chain of parkland laid out in the late 19th century by Frederick Law Olmsted, designer of New York's Central Park.

That's it for your introduction to Boston. If all of this information whets your appetite, stay tuned. We'll be bringing you much more between now and next spring. Hope to see you in Boston for SLA's 87th Annual Conference.

Library and Information Services in Astronomy II Provides Wealth of Practical Information

by Uta Grothkopf

In 1988, the very successful Library and Information Services in Astronomy (LISA) Conference was held in Washington, DC. A follow-up conference, LISA II, took place at the European Southern Observatory (ESO) in Garching near Munich, Germany, May 10-12, 1995. One hundred twenty-one colleagues from 26 countries attended this truly international meeting that brought together astronomy librarians, information scientists, and astronomers as well as representatives from major publishing houses.

May 10, the first day of the conference, was reserved for practice-oriented, hands-on tutorials. After a general introduction to the Internet and its possible applications for library services by Uta Grothkopf of ESO, Liz Bryson of Canada-France-Hawaii Telescope invited attendants to explore the World Wide Web. Starting with an explanation of the make-up of a Web page, the workshop went on to show how easily users can navigate on the Web by pointing and clicking on links in the text. Daniel Egret of the Centre de Données Astronomiques de Strasbourg (CDS) closed the morning session by presenting a general overview of astronomical data.

The SIMBAD (Set of Identifications, Measurements, and Bibliography for Astronomical Data) database is an important instrument for many astronomy librarians, yet not all of them are familiar with this service. Robyn Shobbrook of the Anglo-Australian Observatory (AAO), assisted by Soizick Lesteven of CDS, showed how to access, query, and use the database. Ellen Bouton of the National Radio Astronomy Observatory (NRAO) and Sarah Stevens-Rayburn of the Space Telescope Science Institute reviewed the current trends in preprint distribution, discussing the development, maintenance, and access to bibliographic listings of preprints. The last tutorial, presented by Miguel Albrecht and Benoit Pirenne of ESO/Space Telescope-European Coordinating Facility, dealt with the data previewing features of Starcat.

Speakers provided handouts of their presentations to help participants remember log-on procedures, features, and options of the systems presented once they returned to their libraries.

May 11 began with the official opening of the meeting by ESO's Director General, Riccardo Giacconi, who welcomed the participants and pointed out how important libraries are for both the community in general and the scientists in particular.

One of the "hot topics" these days is the impact evolving technologies and enhanced methods in information retrieval will have on professions in the information sector. Many speakers mentioned the evolution that is currently taking place, most of them explaining their concepts of librarianship as it is or should be today. Also, the Theme Talk of LISA II was devoted to this topic: José-Marie Griffiths, Director of the School of Information Sciences and Acting Vice Chancellor for Computing and Telecommunications at the University of Tennessee in Knoxville, TN,

spoke about "The Changing Role of Librarians: Managing New Technologies in Libraries." Her encouraging and motivating talk led to an extended discussion.

Varied Program Provided

The conference program was filled with diverse themes. Daniel Egret described and categorized the major existing online astronomical services from dedicated catalogues and archives to general information systems. As an ever-increasing amount of information becomes available in networked systems, Jim Fullton of the Clearinghouse for Networked Information Discovery at MCNC in Research Triangle Park, NC emphasized the importance of using protocols like Z39.50 in applications.

Librarians, and not only those in charge of historical collections, must worry about conservation of their material. Brenda Corbin of the U.S. Naval Observatory (USNO) and Donna Coletti of the Harvard-Smithsonian Center for Astrophysics talked about the project on "Digitization of Historical Astronomical Literature" underway in their institutes.

A material for storing data that is hoped to survive a long time compared to the rapidly changing online material found its way into libraries some time ago–the CD-ROM. Kathleen Robertson of the Institute of Astronomy in Honolulu, HI, surveyed the current "Role of the CD-ROM in Astronomy."

Alladi Vagiswari of the Indian Institute of Astrophysics presented her study on the "Growing Importance of Conference Proceedings in Astronomy and Astrophysics and its Impact on Collection Development" during the years 1980 through 1990. She drew attention especially to the problems that librarians in limited-budget countries encounter when acquiring proceedings.

Several talks dealt with the immense amount of work and precision necessary to maintain the SIMBAD database. Susanne Laloë of the Institut d'Astrophysique de Paris (IAP), explained the process of "Updating of the Bibliography in the SIMBAD Database" which is done at the IAP, with the collaboration of Paris, Bordeaux, and Strasbourg observatories and involves eight colleagues. The aspect of quality control within SIMBAD was addressed in the presentation, "Multivariate Data Analysis Applied to the Bibliographical Information Retrieval" by Soizick Lesteven of CDS, Strasbourg. Daniel Egret explained the efforts made by the Strasbourg Astronomical Data Center in order to provide integrated astronomical data and information services.

Electronic Publishing

One afternoon was devoted to electronic publishing. André Heck from Strasbourg Astronomical Observatory (SAO) reviewed the current information technology evolution and the major modifications it brings to communication. He suggested that the restrictive concept of "electronic publishing" should be replaced by the broader notion of "electronic information handling," thus encompassing various types of information as well as different media and communication methodologies and technologies.

Representatives from the major publishing houses were present during this session. Peter Boyce of the American Astronomical Society (AAS) talked about the steps taken by AAS to provide electronic journals with sophisticated browsing and searching capabilities, including links to the searchable abstracts in NASA's Astrophysics Data System, and to data tables as well as the underlying data when they appear in public archives and the capability to print individual articles locally.

Michiel Kolman of Elsevier and Evan Owens of the University of Chicago Press represented their respective publishing houses. Michael Feith of Springer-Verlag gave an overview over the electronic services and journals offered by Springer.

A lot of practical information was provided in the presentation by Francois Ochsenbein of Strasbourg Observatory, who explained the Astronomy & Astrophysics Tables and Abstracts, which are distributed in electronic form by CDS even before publication of the paper edition. The current status and future

plans of NASA's Astrophysics Science Information and Abstract System (ASIAS) was refereed by Guenther Eichhorn of the Center for Astrophysics at Harvard University. Jochen Brinkmann of the European Space Agency/ European Space Research Institute presented "BRAQUE," a new MS Windows search interface to bibliographic and fulltext databases of ESA/ESRIN.

Resource discovery on the Internet is part of today's work of librarians. For astronomy-related topics, usually AstroWeb is the database of choice. For other topics, information discovery often is more difficult. Hans-Martin Adorf of ST-ECF listed and commented on resource discovery methods. Fionn Murtagh, also of ST-ECF, reviewed tools for textual information retrieval, with a focus on publicly-available toolsets such as lq-text and WAIS.

A panel discussion on the topic of "Astronomy Libraries in Economically Less-Favored Countries" was a forum for colleagues to express their concerns and report on the difficulties they encounter in their countries. Chaired by Susanne Laloë of IAP Paris, the panel included Huang Bikun of Purple Mountain Observatory in Nanjing, China, Maria Lapteva of the Institute for Theoretical Astronomy in St. Petersburg, Russia, Juana Maria Sainz Ballesteros de Lloveras of the Complejo Astronómico El Leoncito (CASLEO), and Alladi Vagiswari of the Indian Institute of Astrophysics in Bangalore, India. Despite the huge efforts necessary, it was obvious that many colleagues found excellent solutions in order to maintain smooth and efficient library service.

After many interesting and serious talks and presentations, it was time for Jean Sanderson of the Institute of Astronomy in Cambridge, UK, to present her thoughts on the difference between an astronomical library and a good astronomical library, the way users modify their library, and the fact that today we all know more and more about less and less. Her conclusion was that computers must be servants, not masters, and the audience's applause showed how many colleagues agreed to this statement.

Open Discussions

Three "Birds of a Feather (BoF)" sessions, open discussions for colleagues interested in the topic, were held during the last afternoon of LISA II: Uta Grothkopf of ESO and Marlene Cummins of the University of Toronto animated the session on "Digitization of the Library;" and Jeanette Regan of Mount Stromlo and Siding Spring Observatories (MSSSO) and Helen Knudsen of the California Institute of Technology reported on the issue of "Main Site/Remote Site Library Operations." They were eager to share their experiences with those of colleagues also in charge of remote site libraries. Robyn Shobbrook of AAO and George Wilkins of Exeter, UK, were the moderators of the BoF-session on the development of the Universal Decimal Classification (UDC). All sessions included a short introduction to the topic and an extended discussion among all participants.

In addition to tutorials, talks, and demonstrations, 30 poster papers were on display throughout the conference.

The proceedings of LISA II will be published as a special issue of the journal *Vistas in Astronomy*. The volume contains a selection of papers as well as abstracts of poster contributions. Full texts of papers and posters can be found in the LISA II area on the World Wide Web at URL http://www.eso.org/lisa-ii.html (via the "Program" page). Most of the files are in Postscript, some are in HTML (or even in both versions); others are plain text. On the LISA II page, you will also find the group photograph taken during the conference.

The Scientific Organising Committee consisted of Miguel Albrecht (ESO, Germany), Brenda Corbin (USNO, United States), Marlene Cummins (Toronto, Canada), Bernard Hauck (Lausanne, Switzerland), Andre Heck (Strasbourg, France), Juana-Maria Lloveras (CASLEO, Argentina), Uta Grothkopf (ESO, Germany), Fionn Murtagh (ST-ECF, ESO, Germany), Robyn Shobbrook (AAO, Australia), Galia S. Shvedova (SAO, Russia), Wayne Warren (Goddard Space Flight Center, United States), and Marek Wolf (Prague, Czech Republic). The Local Organizing Committee consisted of Miguel

Albrecht, Uta Grothkopf, Fionn Murtagh, and Christina Stoffer.

The local organizers wish to thank their colleagues at ESO for their help, which led to a very productive meeting. The help of the many sponsors of LISA II is gratefully acknowledged.

The number of participants certainly would not have been as high as it was if the "Friends of LISA II" committee (Ellen Bouton, NRAO, Brenda Corbin, USNO, and Marlene Cummins, University of Toronto) had not worked tirelessly. Thanks to their enthusiasm, librarians from a wide range of countries were able to attend and share their experiences, concerns, and ideas with their colleagues.

LISA II once again has shown how important meetings of this kind are, especially to librarians, who have not always had the possibility to meet their colleagues personally in the past. The results will be many, be they additional information about techniques and tools in information services, closer working relationships, or higher motivation in general. We are looking forward to LISA III, which hopefully will take place in the near future.

Uta Grothkopf is Librarian at the European Southern Observatory (ESO) Library in Garching, Germany. She can be reached at esolib@eso.org.

SPECIAL LIBRARIES INDEX

Volume 86 January-December 1995

Alphabetization is letter by letter.
References to persons as subject
are indicated by "*about*"
following the name.

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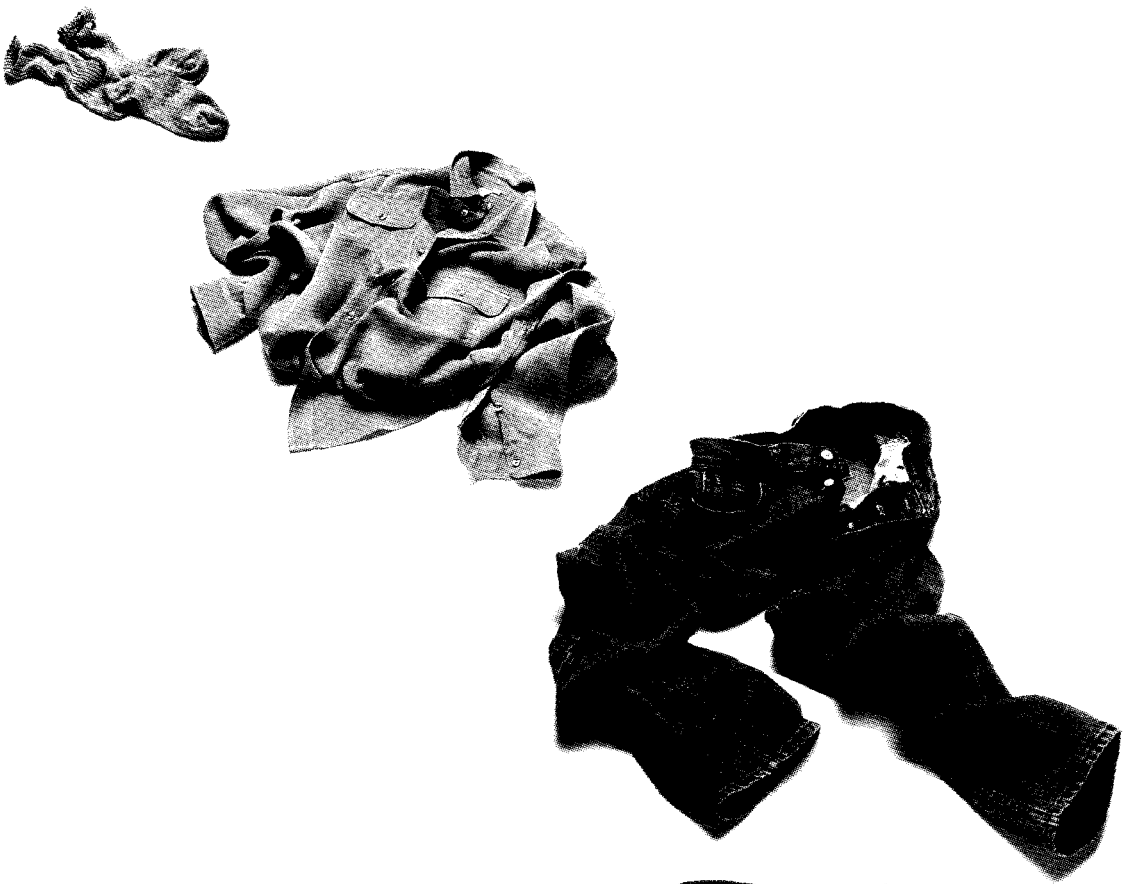

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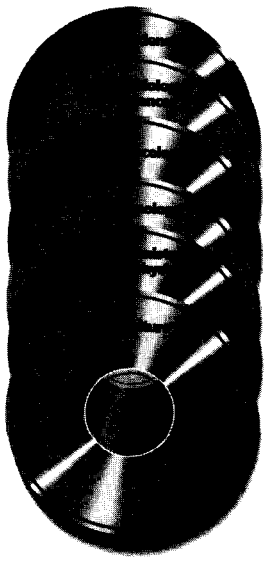

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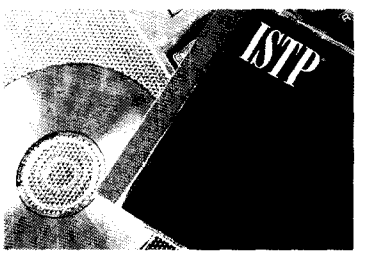

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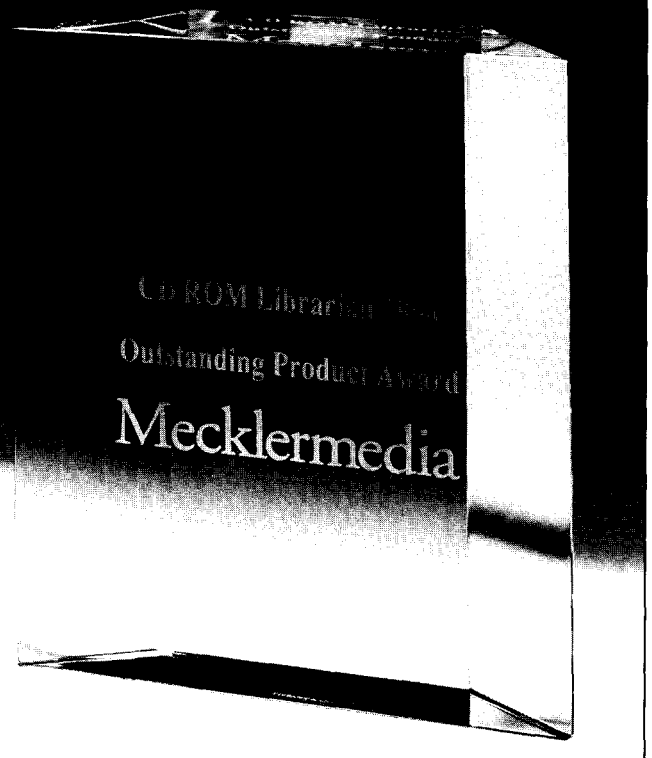

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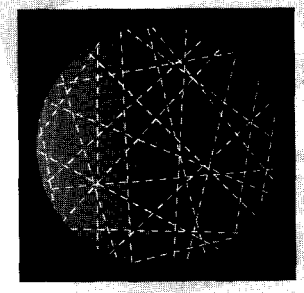

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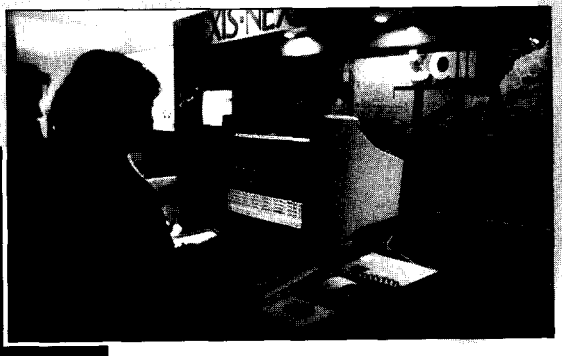

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