

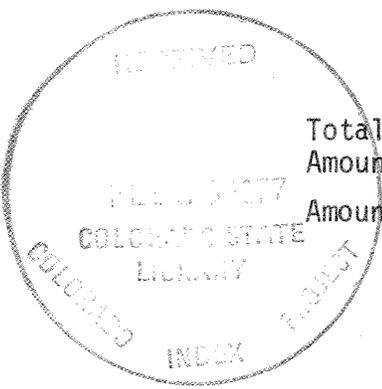
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A PROPOSAL FOR  
FACILITATING EQUITABLE INTERSTATE SHARING  
OF LIBRARY RESOURCES IN THE WEST

Period Covered: July 1, 1976 through June 30, 1977



Total Estimated Cost:	\$122,593
Amount Contributed by Participants:	<u>22,890</u>
Amount Requested from CLR:	\$ 99,703

Submitted By

Western Interstate Commission for Higher Education  
P.O. Drawer P  
Boulder, Colorado 80302

March 31, 1976

A PROPOSAL FOR  
FACILITATING EQUITABLE INTERSTATE SHARING OF LIBRARY RESOURCES

TABLE OF CONTENTS

	<u>Page</u>
Grant Application Form . . . . .	3
Project Plan and Supporting Data for Grant Request . . . . .	4
Section 1 - Plan . . . . .	7
A. Specific Aims . . . . .	7
B. Significance of this Project . . . . .	10
C. Method of Procedure . . . . .	13
D. Facilities Available . . . . .	29
Section 2 - Personal Publications . . . . .	32
Section 3 - Accomplishments Obtained by Others . . . . .	34
Section 4 - Biographical Sketches . . . . .	37
A. Western Network Staff . . . . .	38
B. NCHEMS Staff . . . . .	45
Section 5 - Participation of Other Units in Organization . . . . .	49
Section 6 - Supporting Material (Not Used) . . . . .	51
Section 7 - Previous Work Done on this Project . . . . .	51
Section 8 - Proposed Budget . . . . .	53

COUNCIL ON LIBRARY RESOURCES

One Dupont Circle • Washington, D. C. • 20036

TEL 202 295 4257

APPLICATION FOR GRANT

Instructions:

- Please type.
- Please answer all questions.
- Submit two signed copies.

Name and address of organization applying for grant Western Interstate Commission for Higher Education  
(WICHE), P. O. Drawer "P", Boulder, Colorado 80302

Tax Status (individual, for profit organization, nonprivate foundation, private operating foundation, private non-operating foundation, other - please specify) .....

Non-Profit Organization as described in Section 170(C)(1) of the Internal Revenue Code

If a foundation, has Form 4653 "Notification Concerning Foundation Status" been filed with the Internal Revenue Service? .....

N/A Date filed ..... Result .....

Brief descriptive title of project .....

Facilitating Equitable Interstate Sharing of Library Resources in the West

Total amount of request \$ 99,703

Period covered by project July 1 1976 through June 30 1977  
 Month Day Year Month Day Year

Name, title, address and telephone number of person immediately in charge of project .....

Dr. Kevin Bunnell, Director, Division of General Regional Programs  
WICHE, P. O. Drawer "P", Boulder, Colorado 80302 (303-492-6630)

Name, title, address and telephone number of principal investigator .....

Eleanor A. Montague, Project Director, WICHE, P. O. Drawer "P"  
Boulder, Colorado 80302 (303-492-8150)

Name, title, address and telephone number of responsible financial officer .....

John Staley, Associate Director, WICHE, Director of Administration  
WICHE, P. O. Drawer "P", Boulder, Colorado 80302 (303-492-6370)

It is understood that any grant made is subject to the grantee's acceptance of the CONDITIONS OF GRANT STATEMENT supplied by the Council.

Signature of official authorized to commit the applicant organization to the activity

John C. Staley  
 (Signature)  
 Name John Staley  
 (Please type)  
 Title Director of Administration  
 (Please type)  
 Date March 31, 1976  
 (Please type)

# COUNCIL ON LIBRARY RESOURCES, INC.

ONE DUPONT CIRCLE, N.W.  
WASHINGTON, D. C. 20036

Telephone 202-296-4757

## PROJECT PLAN AND SUPPORTING DATA FOR GRANT REQUEST

In a separate document, attached to this application form, please present details of the proposed plan and other necessary data in accordance with the outline below:

1. Plan
  - A. Specific aims – provide a concise statement of the aims of the proposed work.
  - B. Significance of this project – explain why results may be important.
  - C. Method of procedure – give details of the general approach and the specific research methods to be used.
  - D. Facilities available – describe facilities at your disposal (e.g., expert colleagues available for consultation, specialized staff or departments, laboratory equipment, etc.).
2. Personal Publications. Cite your most important publications, and those of associates on this or closely related work – not more than five per person.
3. Accomplishments obtained by others. Summarize accomplishments to date obtained by others working on this problem, citing pertinent publications. Select no more than five. Explain in what ways your project would complement or supplement these.
4. Biographical Sketches. Provide brief sketches for all professional personnel selected for this project, and state amount of time devoted to other responsibilities (listed) if full time will not be devoted to this project.
5. Participation of other units in your organization or of other organizations. Describe the nature and extent of any such participation.
6. Supporting material, technical or otherwise, may be attached.
7. Previous work done on this project. Describe briefly any previous work by you and your associates that is pertinent to this project.
8. Proposed Budget. Prepare your budget in accordance with the format and instructions shown on the proposed budget.

Show previous and current support from all sources, including that from own institution for this project or for similar projects.

Title of Project	Source of Support	Period of Support	Amount
WICHE Western Council on Cont. Ed. & Lib. Res. Sharing	State Funds and WICHE Funds	July 1, 1974 to July 30, 1975	\$ 60,000
Western States Network Study & Planning Conference Sept. 19-20, 1974	State Funds, WICHE Funds & Particip. Support from Inst.	July 1, 1974 to October 1, 1974	\$ 8,000
Western States Network Planning Task Force & Working Groups	State Funds, WICHE Funds & Members Support from Inst.	October 1, 1974 to March 20, 1975	\$ 15,000
Design, Develop Western Interstate Bib. Network	Council Lib. Resources	July 1, 1975 to	\$ 79,325
	U.S. Office of Educ.	June 30, 1976	\$ 69,396
	WICHE Western Council		\$ 32,744
TOTAL			\$ 264,465

WICHE

P. O. Drawer "P"

Boulder, Colorado 80302

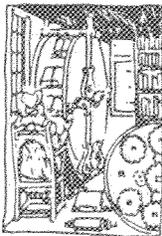
Submitted by

*John C. Staley*  
(Signature)

John Staley, Director of Administration

(Name & Title - Please type)

March 31, 1976



## COUNCIL ON LIBRARY RESOURCES

One Dupont Circle • Washington, D. C. • 20036

Tel. 202-296-4757

### CONDITIONS OF GRANT

All grants made by the Council on Library Resources, Inc. are subject to the following conditions, as well as to any which may be stated in the letter of grant notification.

1. A grant is to be used exclusively for the purpose stated in the letter of grant notification. Reallocations or revisions of items in the budget upon which the grant is based must be approved in advance by the Council.
2. A grant may be revoked by the Council at any time, with or without cause. In the event a grant is revoked, the Council thereafter has no obligation to make any further payment thereunder, and the grantee shall return to the Council, promptly upon request, the balance of the grant held by the grantee, together with any amounts expended by the grantee which were not expended for the purposes of the grant.
3. A grantee must return to the Council the unexpended balance of any grant
  - (a) not required by the grantee for the purposes of the grant or not expended during the period of the grant for the purposes of the grant;
  - (b) If the grantee at any time ceases to be exempt from Federal income taxation under Section 501 (c)(3) of the Internal Revenue Code of 1954 (Section 101(6) of the Internal Revenue Code of 1939 as amended.)
4. The grantee hereby undertakes as follows:
  - (a) To maintain its books and records in a manner consistent with applicable Internal Revenue Service regulations governing grantees' accounting and record-keeping procedures, and to make such books and records available to the grantor at reasonable times; and
  - (b) Not to use any of the grant funds.
    - (1) to carry on propaganda, or otherwise to attempt to influence legislation (within the meaning of Section 4945(d)(1) of the Internal Revenue Code),
    - (2) to influence the outcome of any specific public election, or to carry on, directly or indirectly, any voter registration drive (within the meaning of Section 4945(d)(2)),
    - (3) for any program or any grant which does not comply with the requirements of Section 4945(d)(3) or (4), or
    - (4) to undertake any activity for any purpose other than the one specified in Section 170(c) (2)(B).
5. The grantee shall submit full and complete annual reports on the manner in which the funds are spent and the progress made in accomplishing the purposes of the grant, and shall submit other reports in accordance with the schedule prescribed in the letter of grant notification.
6. The Council makes public announcement from time to time of its grant actions, but does not necessarily issue special releases regarding each grant, nor does it ask a grantee to do so. Should a grantee wish to publicize a grant, specific written approval of the nature of the intended publicity must be secured from the Council.

(over)

7. Unless otherwise stated, equipment purchased with grant funds shall be the property of the Council, and its disposition at the conclusion of the project shall be determined by the Council.

8. All reports or publications announcing the results of work supported by a Council grant shall acknowledge such support in language approved by the Council.

9. The grantee agrees that should any copyrightable material be produced during the course of work aided by the Council, he will not seek to copyright such material without the written consent of the Council, but will refer to the Council for determination the question of whether or not copyright protection of the material and/or arrangements for its publication shall be sought. The purpose of such reference is to provide the Council with an opportunity for assuring within its ability adequate dissemination of the results of work aided by its grant.

10. The grantee agrees that he will fully disclose to the Council any potentially patentable discovery or invention which is produced during the course of work aided by a grant from the Council. The grantee further agrees that he will not seek to obtain a patent for such discovery or invention without the written consent of the Council. The purpose of this provision is to give the Council an opportunity for assuring within its ability adequate dissemination of the results of work aided by its grants. Further, it is expected that any financial gains resulting from a successful patent will be shared by the grantee and by the Council. The latter will utilize any funds received from patents to support other worthy programs or projects in the interest of libraries. The Council's more detailed policy on the obtaining and management of patents is set forth in a separate statement which is available to the grantee upon request.

11. Any grant made by the Council is on the understanding that the Council has no obligation to provide additional or any other support to the grantee.

The undersigned agrees to be bound by, and comply with, each and all of the above conditions and understands that such agreement is a material inducement to the grant by the Council on Library Resources.

Name & address of Organization:

Western Interstate Commission for Higher  
Education

P. O. Drawer "P"

Boulder, Colorado 80302

(Please type)

  
(Signature)

John Staley, Director of Administration  
(Title - Please type)

March 31, 1976

(Date)

A PROPOSAL FOR  
FACILITATING EQUITABLE INTERSTATE SHARING  
OF LIBRARY RESOURCES IN THE WEST

PROJECT PLAN AND SUPPORTING DATA FOR GRANT REQUEST

1. PLAN

A. Specific Aims

The current structure for carrying out the principles of interstate library resource sharing in the West is built out of a variety of policies cut to fit localized needs, practices and constraints. In addition to the systems of the various states and ARL (Association of Research Libraries) institutions, there are two bibliographic centers representing multistate regions in the West that form part of the interstate interaction structure; these operate with somewhat differing procedures. At least one ARL institution in the West has recently established a fee for loans that may act to restrict the use of that library's collection and cause a concomitant increase in requests made of other libraries.

The increasing load of interstate library transactions is magnifying some weaknesses in the existing resource sharing structure, and the resultant effects on costs and access to information are of growing concern to western librarians. We believe that these weaknesses can be alleviated by re-examining the existing interstate resource sharing policy structure to see how local needs and constraints can be fit within a larger regional and national framework to facilitate access by residents of one state to the information held in

another state's libraries. Resource sharing policies should benefit library users, reduce costs, and provide equitable recompense to the taxpayers of a state who have paid for resources that are used by residents of other political jurisdictions, insofar as such policies are tempered by the principle of freedom of access to information. Policies providing equity for publicly-supported libraries may be applicable or adaptable to private institutions as well.

The work proposed thus has four primary specific aims:

(1) To investigate the technical, economic, social and political consequences of current and alternative policies for interstate library resource sharing.

(2) To recommend interstate resource sharing policies that would reduce current costs or improve access to information.

(3) To propose techniques to reduce or compensate for imbalances between net-lending and net-borrowing states and major institutions.

(4) If warranted and recommended by western librarians, to establish a pilot program that would test and demonstrate activities for facilitating equitable interstate resource sharing on an on-going basis.

In performing the proposed project, we expect to work closely with many librarians in state agencies, regional organizations, and major institutions in collecting data and in employing analytical techniques that have use beyond the immediate bounds of the project. Therefore, two additional aims for the project are:

(5) To assist state library agencies and other organizations, at their request, in using analytical techniques and data developed in the course of

this project in furthering their own in-state and interstate resource sharing activities.

(6) To refine some of the transmission load and routing design parameters and functional specifications currently being developed by the Western Network Project for an improved telecommunications network for libraries that might be developed in the near future.

### B. Significance of this Project

The proposed work is significant because it directly addresses the interlibrary loan problems that are of highest concern to librarians committed to interstate and regional library resource sharing in the West, as well as in other regions of the country. The problems of interlibrary loan are not simply a matter of the imbalance between net-lending libraries that lend more items than they borrow, and the net-borrowing libraries that borrow more items than they lend. Indeed, these problems go to the heart of the complex of functions involved in interlibrary interaction which includes social, political, and operational policy matters, development and use of computer and telecommunications technologies, and staff development.

Since the genesis of the Western Network concept, and especially since the current Project to implement the Network began last summer, librarians have continually suggested that the Network could be of most immediate assistance in the interlibrary loan area. As a result of meetings with the Network Steering Committee, multistate network and bibliographic center directors, western librarians, the Executive Director of the National Commission for Libraries and Information Science (NCLIS), and others, the Project Staff has been urged to concentrate efforts on several activities that pertain either directly or at least peripherally to the interlibrary loan function, particularly as that function crosses state and regional boundaries, by:

- (a) investigating the desirability and feasibility of establishing standard pricing policies for interlibrary loan (ILL) services;
- (b) developing some parameters and functional specifications for an

interlibrary communications system that uses current technology to support message switching among libraries, as well as to provide more economical connection to computer-based bibliographic utilities over the same communications facilities;

(c) fostering development of state and regional bibliographic data bases that include location data in order to facilitate interlibrary loans and to reduce the cost of verifying citations;

(d) upgrading library staffs' ability to match patron needs with network capabilities for providing access to the total resource of the region; and

(e) assisting state library agencies and other major organizations in improving interstate and inter-regional cooperation.

While the work described in this proposal would be of direct benefit to the states and institutions in the 17-state Western Region, it would also contribute to cooperative library development in other regions of the country. The policies examined and instituted in the West during the course of the proposed project should offer models that could be adopted in other multistate regions, as well as within individual states. In addition, the recommendations developed in respect to interlibrary loan policies may in large part be applicable to handling similar problems in connection with reference assistance furnished by one library to a number of others. Although interlibrary reference (ILR) is not presently a significant factor in interstate library cooperation, it may become so in the future.

The West is a good test bed for the proposed work because of the disparity in resources available in states such as California or Washington and

states such as Montana or Wyoming. The distances between the borders of the region, such as the 4,500 miles separating Hawaii from Kansas, or Alaska from New Mexico, are continental in magnitude. The range of user needs, from the scientists and technologists of the West Coast to the inner-city residents of Los Angeles or San Francisco, or to the ranchers and reservation Indians of the interior, encompasses almost as many variations as can be found anywhere else in the country.

This project is significant because it addresses the major concerns of librarians in the West and elsewhere, because it promises accomplishment and not just study, and because it will provide models and data that can be used in other regions of the country and within individual states.

## Section 1C - Plan; Method of Procedure

### C. Method of Procedure

The set of tasks proposed follows the traditional research method of collecting data, constructing one or more descriptive models, analyzing alternative approaches by means of the models, and making recommendations. We will be prepared to complete the project by setting up a pilot program to carry out functions agreed-upon by western librarians. As byproducts of the work to be performed, we expect to: (1) develop data on which some of the functional specifications for an interlibrary communication system can be based; (2) test the utility of computer-conferencing\* to improve communication among western libraries for awareness and planning purposes; (3) suggest considerations to be taken into account in developing the Washington Library Network (WLN) and Stanford's BALLOTS system data bases or other regional data bases; (4) increase awareness among public service librarians of resources available in other libraries; and (5) assist states in their own planning to develop in-state resources and to make cost effective use of resources in other states of the region.

To assist us in this project, we will form a small ad hoc technical advisory working group consisting of 4-7 state agency, ARL library, and special library representatives. This working group will be responsible for informing us about the concerns of the librarians that they represent, and for communicating to their constituencies the results of the work being done by the Western Network staff. We will also maintain liaison with the ILL committees of ALA, currently chaired by Alice Wilcox, and ARL, currently chaired by David Weber, a member of the Western Network Project's Executive Board, as well as any ILL committees of the state and regional library associations in the West.

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\* Computer-conferencing is described in Section 1 C (4).

## Section 1C - Plan: Method of Procedure

The advisory and governing boards for the Western Network, representing the decision-makers who must take action upon the recommendations developed in the course of the project, will provide guidance and direction to the Network staff and the technical advisors performing the work proposed.

The following tasks will be undertaken:

- (1) Survey current ILL policies
- (2) Develop a descriptive model
- (3) Identify alternative policies
- (4) Analyze selected alternative policies
- (5) Develop recommendations
- (6) Set up a pilot program (if desirable)

(1) Survey current ILL policies at the state library agency level, at ARL libraries and at the multistate bibliographic centers in the West to determine the elements of the policies and the reasons why the policies have been established. The survey will include the role of the Interloan program of the Bibliographical Center for Research (BCR) and the Pacific Northwest Bibliographic Center (PNBC) in interstate interlibrary loan, as well as the policies employed by the regional medical libraries (RMLs).

The purpose of this survey is to obtain a description of the structure for interstate resource sharing as implied by the policies and procedures that have been formally instituted to govern such activity. This structure can then be compared with the pattern of actual interstate transactions shown in the results of the Cost and Funding Studies that are currently being performed by the Western Network Project, data available in the states and bibliographic center, and data obtained through new, limited collection efforts. Where the comparison between policy structure and existing ILL patterns shows significant variance, we will attempt to determine what factors cause the difference.

## Section 1C - Plan: Method of Procedure

The product resulting from this task will be a compilation of the policies established by each state and ARL institution for interlibrary loan and reference assistance across state lines, as well as a brief description of ILL systems currently operating within each state as these are related to interstate channels.

Sarah Thomson's Interlibrary Loan Policies Directory (Chicago: American Library Association, 1975) will provide a good starting point in examining stated policies of the major libraries within each state. The State Network Design Teams that have been established to assist the Western Network Project will be requested to help the Project staff in supplementing this information with a description of the policies of the state library agencies and other libraries affecting the transmission of ILL requests to state or bibliographic center levels.

Interstate interlibrary loan within the West is currently aided by the PNBC and BCR bibliographic centers and the regional medical libraries (RMLs). PNBC centralizes resources for interlibrary loan verification, location identification, and request routing. PNBC suggests to the states that it serves (Washington, Alaska, Montana, and some libraries of Idaho, Oregon and British Columbia) that all requests be sent directly to it as the cooperative clearinghouse for the Northwest. PNBC operates as a switching center and sends requests for original materials to libraries shown to hold the items in the union card catalog that PNBC maintains for the holdings of 47 libraries in the Northwest; PNBC also operates as a photocopy center and can supply most requests for copies of journal articles. PNBC services are funded by state agencies and some individual libraries.

The Interloan program of BCR, serving libraries in the states of Colorado, Utah, Wyoming, North and South Dakota, Nebraska, Kansas, Iowa,

## Section 1C - Plan: Method of Procedure

Oklahoma and Texas, operates on a more decentralized basis. The Interloan program is a state-level clearing agency for Colorado, but libraries in other states are encouraged to clear ILL requests in-state, using Interloan as a backup for verifying, locating, and routing ILL requests that cannot be cleared in-state. BCR charges both an annual access fee, to cover administrative expenses, and a fee for individual service transactions. Several states have a blanket agreement with BCR to service libraries in those states. Both PNBC and BCR in performing their request routing function try not to overload a particular library with an excessive number of requests.

The RMLs operate as contractors to the National Library of Medicine and employ pricing, quota, and stop list policies to control the number of reimbursed interlibrary loans filled for medical libraries. These policies are intended to strengthen collections and cooperation among local small hospital and other medical libraries while still providing necessary support to ensure that library users obtain the information materials they need.

The effects of these differing policies need to be compared to see what their results are in terms of overall cost and quality of service. The effects may be radically altered as more western libraries make use of the OCLC, WLN or BALLOTS bibliographic utilities and if pending copyright legislation is passed to restrict "systematic" photocopying

(2) Develop a descriptive model of current interstate resource sharing activity. This model will consist essentially of tables and diagrams showing the amount of interlibrary traffic between the 17 states in the West and the associated costs and delivery times.

Much of the data describing current interlibrary loan traffic among western libraries, and the costs for processing ILL requests or acquiring materials for collection development, are being collected from a stratified

## Section 1C - Plan: Method of Procedure

random sample of 100 western libraries in the course of the Cost and Funding Studies portion of the Western Network Project (funded chiefly by USOE). Additional data are available in several locations such as PNBC, BCR, the California, Idaho, Nevada and New Mexico state libraries, and Minnesota's MINITEX. In the course of collecting information about existing policies, as described in Task 1, we will also examine and selectively collect available data from such sources.

Because these data may not be sufficient (for example, special libraries are not included in the Cost and Funding survey), and because the process of developing a model may reveal unexpected needs for certain kinds of data, we will undertake limited surveys to obtain additional data necessary to complete the descriptive model. The instruments developed for the current Cost and Funding survey can be easily adapted to use in this supplemental data collection effort.

Staff members of the National Center for Higher Education Management Systems (NCHEMS), located at WICHE, will join with the Western Network staff in developing a descriptive model of the current "system" for interstate resource sharing. NCHEMS has developed a number of tools and techniques for analysis of complex systems in higher education, and the experience of their staff is expected to greatly strengthen our analysis of the interstate ILL "system."

The descriptive model should include several components. One component would be a matrix of libraries, by location, as illustrated in Figure 1, that represent major nodes in the current interstate interlibrary transaction pattern in the West. A second component would represent cost and response factors in interstate library loan; such factors might include:

## Section 1C - Plan: Method of Procedure

- cost of access to location data
- cost for creating and maintaining location data (based on a range of alternative methods)
- cost for verifying citations
- cost for preparing and transmitting loan requests
- cost for handling requests received
- fill rates
- re-request rates
- response times
- delivery times
- delivery cost
- cost of training and continuing education for ILL staff
- cost for administration of the ILL "system"
- availability and cost of acquiring (rather than borrowing) requested materials

Using the basic data in the matrix, we can then develop state totals for materials borrowed and loaned, and assign measures of cost and service to these totals. In subsequent analysis, we can examine the volume, cost, service and in-state availability factors associated with each node (as represented by the boxes in the matrix) in the interstate resource sharing system.

## Section 1C - Plan: Method of Procedure

		ALASKA (AK)		WASHINGTON (WA)		
		LIB 1	LIB 2	LIB 3	LIB 4	LIB 5
		Req/Filled	Req/Filled	Req/Filled	Req/Filled	Req/Filled
AK	L1	-	376/319	-	-	255/212
	L2	283/242	-	-	-	32/24
WA	L3	-	-	-	-	78/63
	L4	-	-	214/189	-	113/92
	L5	3/2	-	63/52	14/12	-

Figure 1. Illustration of a matrix displaying loan requests and loan fills for libraries taking a significant part in interstate interlibrary loans in the West. The example shows that library L1, in Alaska, made 376 loan requests of L2 in Alaska, and had 319 requests filled; L1 also made 255 requests of L5 in Washington, and had 212 requests filled. In return, L5 borrowed only two items from L1.

The value of each of the cost and service factors may have to be expressed as a range to allow for variations among libraries and localities. However, quite rough approximations of real costs or delivery times will be adequate for the purposes of the model, because the values will be used mainly as base points from which to measure improvement or deterioration in analyzing the effects of alternative policies and procedures identified in the next task. Further, a number of the factors may have different values depending upon new techniques that could be employed. For example, cost of access to location data would be different for techniques using a union card catalog, an on-line bibliographic data base, or a microform union catalog distributed to all libraries. In fact, we intend to use the descriptive model not only to evaluate alternative policy structures for interstate library transactions but also to evaluate the potential value of certain technological approaches to inter-library communication and assistance.

## Section 1C - Plan: Method of Procedure

The descriptive model of the existing interstate resource sharing "system" is expected to match reasonably well the policy structure of the states and ARL institutions, although some variances are likely and will be studied to determine their cause. More importantly, the data and policy structure will be used in conjunction with each other to interpret the effects that current policies, declared or implicit, have on total cost for interstate sharing and on net-lending (libraries that lend more items than they borrow) imbalances among states and academic institutions. The next step for the project is to investigate what changes in policy would change the values of the "system's" factors in favor of a better balancing of costs or transaction loads among states and institutions without causing deterioration in information service to patrons or increasing the total cost of the system.

It will also be necessary to examine the relationship between collection development and interlibrary loan. All libraries must develop their collections to obtain some level of self-sufficiency for filling the needs of library users. In very few libraries is it possible to bring the self-sufficiency level near 100%, nor is such a high level necessarily cost-beneficial. Research libraries tend to try to attain a high level, while many special libraries are satisfied with a low level with a large proportion of their user's needs filled via ILL; both types of libraries have good reasons for their approaches to self-sufficiency. However, it might be helpful if the selection of a level of self-sufficiency for a library -- or a state -- could be based on some quantifiable analysis of how the allocation of funds between collection development and interlibrary loan might affect service.

## Section 1C - Plan: Method of Procedure

The description of the model and the results of analysis will be added to the compilation of existing policies developed during the preceding task to create the project's second product.

(3) Identify alternative policies for interstate cooperation that offer promise of providing service to patrons equal to or better than the present case while minimizing overall costs and reducing cost and load imbalances among states and ARL institutions.

A number of librarians have suggestions on how the interstate ILL "system" might be improved. The project's staff needs to be able to take advantage of these ideas, rather than try to reinvent them all by ourselves; the problem is to find a way to communicate interactively with the technical advisory group and a large number of other librarians over a period of several weeks. We plan to experiment with the use of computer-conferencing as one technique that could assist in solving this problem.

In computer conferencing, a computer is used to store and display messages in a manner similar to the correspondence that most library committees use to conduct their work between face-to-face meetings. The computer provides a faster and more interactive means of conferencing than does mail, allows people to "talk" simultaneously without interrupting each other, and provides a written record automatically. Participants need not be on-line to the computer all at the same time; instead, they can make connection at their own convenience to call up the messages recorded in the period since their last connection. Conferees can take as much time as they desire to formulate a considered reply to a question or to make a suggestion. Computer-conferencing also provides channels for private communications, for anonymous contributions to the discussion, and for polling or surveying the participants to bring matters to a vote or to collect data.

## Section 1C - Plan: Method of Procedure

Several institutions have developed computer-conferencing systems and can support a moderate amount of use by other groups. We will contract with one of these institutions to provide the services needed. Librarians in the West who already have, or have access to, computer terminals for access to the System Development Corporation, Lockheed, or similar on-line searching services can use the computer-conferencing service in the same manner. It is also possible for librarians with teletype machines to lease a modem to connect the teletype with the conferencing computer (although the low rate of speed for teletypes might be irritating to the user).

We will also prepare short working papers summarizing suggestions received and distribute these documents for comments from other librarians who may not be able to participate in the computer-conferencing approach. The State Network Design Teams and the project's technical advisory group will assist throughout this task by collecting suggestions from their colleagues as well as by evaluating the utility of the computer-conferencing technique. It is important that all librarians who wish to offer suggestions or comments have the opportunity to do so.

In addition to using computer-conferencing and the mails, we will also take advantage of the Southwestern Library Association-Mountain Plains Library Association conference scheduled for mid-October 1976 to explain the project and obtain participation in this task from the conference attendees.

(4) Analyze selected alternative policies by means of descriptive models similar to those used in analyzing the current system and policy structure. It is likely that only a few alternatives will be considered extensively; initial analysis of the others, informed by the results of analyses made to date and the advice of the technical advisors and consultants that we may employ at this point, should be sufficient to determine that

## Section 1C - Plan: Method of Procedure

their effects would be less desirable than those of other alternatives already analyzed in full.

There are a number of more or less interrelated factors affecting inter-library loan assistance that make simple answers suspect. In addition to the complexity of the present "system," the values to be placed on cost and response factors may be greatly altered as the computer-based library systems come into general use, as more states and library groups develop union catalogs and serials lists, as the Library of Congress develops new services, and as advances in communication systems make it easier and possibly cheaper for libraries to communicate with each other.

On the political, social and economic levels, there are concerns about the value of library service, how information and information service should be paid for, the balance among local, state and federal tax support for information service (some of which lies in the private sector, as well), and the equitable recompense to the citizens of state "A" for use by citizens of state "B" of the information resources for which state "A" citizens have paid through their local and state taxes.

In view of the complexity of the present and foreseeable future inter-library interaction "system," the most appropriate strategy to improve the existing situation appears to be one of examining a number of alternative policies to see, first, which are feasible, and second, which lead to an improvement in services and/or costs. Thus, we (with assistance from the NCHEMS staff) propose to model several of the suggested alternatives for interstate interlibrary resource sharing policies and compare the resulting effects on "system," state and institutional costs, together with the

## Section 1C - Plan; Method of Procedure

completeness and responsiveness of request fulfillment, to determine which alternative leads to greater improvement over the current situation. It may be necessary to analyze each model in the light of different assumptions regarding technical and other factors, such as availability or non-availability of holdings information in data bases, different forms of communication systems, money, and so forth. These additional analyses may also indicate how much the West can afford to invest in new library technologies to obtain cost savings or service improvement.

The product of this task will be a document elaborating upon the descriptions of alternative policies prepared in the preceding task by reporting the results of the analyses, as well as describing the method, and presenting a set of recommendations for changing current policies. Portions of the document, particularly those dealing with the analysis results and recommended policies, will be presented first for comment to the library community by means of computer-conferencing and by mailing drafts to other librarians who cannot participate in the computer conferences. This will provide western librarians with the opportunity to consider the research results, and to interact with colleagues, while the recommendations are still in the preliminary draft stage and without imposing much delay in producing a final draft.

Section 1C - Plan: Method of Procedure

(5) Develop recommendations and implementation decisions through meetings of the Western Network governing board and advisory board. These boards represent the chiefs of state library agencies, ARL library directors, special librarians, and library funding agencies in the West, and thus have the authority to consider the recommendations for improving interstate library cooperation and to make decisions as to their implementation.

As the first step, the Project staff (together with the technical advisors and other resource people) will meet with the Network governing board and invited directors of regional networks and bibliographic centers in the West to discuss the findings from the analyses of current and alternative policies for structuring interstate library resource sharing. We expect to reach two sets of conclusions to present at this meeting. The first set will deal with policies of equity in interstate resource sharing. The second set will deal with the general issues involved in improving interlibrary loan service. It is likely that at least the first set of issues, and perhaps both sets, will have political, social, or economic implications that will require consideration and action over a period of several years. Other issues and conclusions, however, are expected to be matters that can be dealt with over a shorter period of time to provide some immediate benefits in improving interstate resource sharing.

The major outcome of the meeting with the Network governing board will be draft recommendations for modifying current interstate library resource sharing policies to achieve greater equity, efficiency, and effectiveness. These draft recommendations will be widely disseminated to library directors and interlibrary loan librarians, as well as to others concerned, and

## Section 1C - Plan: Method of Procedure

discussion of them will be encouraged through personal contacts made by Network advisory and governing board members, the technical advisors, and the project staff. This will provide the communication needed between board members and the constituencies that they represent.

As the next step, about a month after the draft recommendations are distributed, a joint meeting of the Network governing and advisory boards will be convened for the purposes of discussing the recommendations and deciding upon their implementation. A final draft of the recommendations and a report on the actions taken in this meeting will be published for region-wide distribution. It is to be expected that there will be a range of outcomes from this meeting, with some recommendations being approved for implementation by the Network as an organization, some being suggested as appropriate for action to be taken by individual states or institutions, and some being referred for further study.

(6) Set up a pilot program (if recommended) to test and demonstrate functions that facilitate interstate transactions. There are several functions that such a pilot program might test, as determined by the recommendations agreed-upon as a result of the preceding tasks:

(a) Establish prices on an equitable and standardized (but not necessarily uniform) basis for interstate transactions so as to provide adequate compensation to states and institutions whose library resources are used by residents of other states. Arrange for the transfer of funds between states and institutions, perhaps on a quarterly or annual basis, to compensate for use of other states' and institutions' resources, based on the standard prices determined and the net lending/borrowing differences. The administrative overhead for this function must be minimized for all participating libraries and organizations.

Section 1C - Plan: Method of Procedure

(b) Assist states and institutions in developing cooperative acquisitions agreements; carry out coordinating functions as requested, such as maintaining and disseminating descriptions of the agreements.

(c) Assist state library agencies in determining an appropriate level of state self-sufficiency as a goal for local and state collection development, and in improving in-state policies for resource sharing.

(d) Perform technological research and development leading to improved overall system performance for interlibrary transactions.

(e) Assist in providing continuing education to library operating and administrative staff in order that they may make appropriate and advantageous use of interlibrary assistance.

The schedule that we propose for the project is shown in Figure 2; it is assumed that work would begin in July 1976 and end on June 30, 1977. The summary of products to be developed during the project, and their due dates, is as shown below:

<u>PRODUCT</u>	<u>DUE</u>
1. Description of current interstate ILL policies	October 31, 1976
2. Descriptive model and analysis of current policies	January 31, 1977
3. Description of suggested alternative policies	December 31, 1976
4. Analysis of alternative policies and conclusions	February 28, 1977
5. Draft recommendations for policy revisions	March 31, 1977
6. Final recommendations for interstate resource sharing policies	May 31, 1977
7. Implementation plan for pilot program	June 30, 1977

Section 1C - Plan: Method of Procedure

These products will be published and distributed to western state librarians, ARL librarians, network and bibliographic center directors, directors of other regional networks, chairpersons of ILL committees of regional and national library associations, NCLIS, and other interested persons.

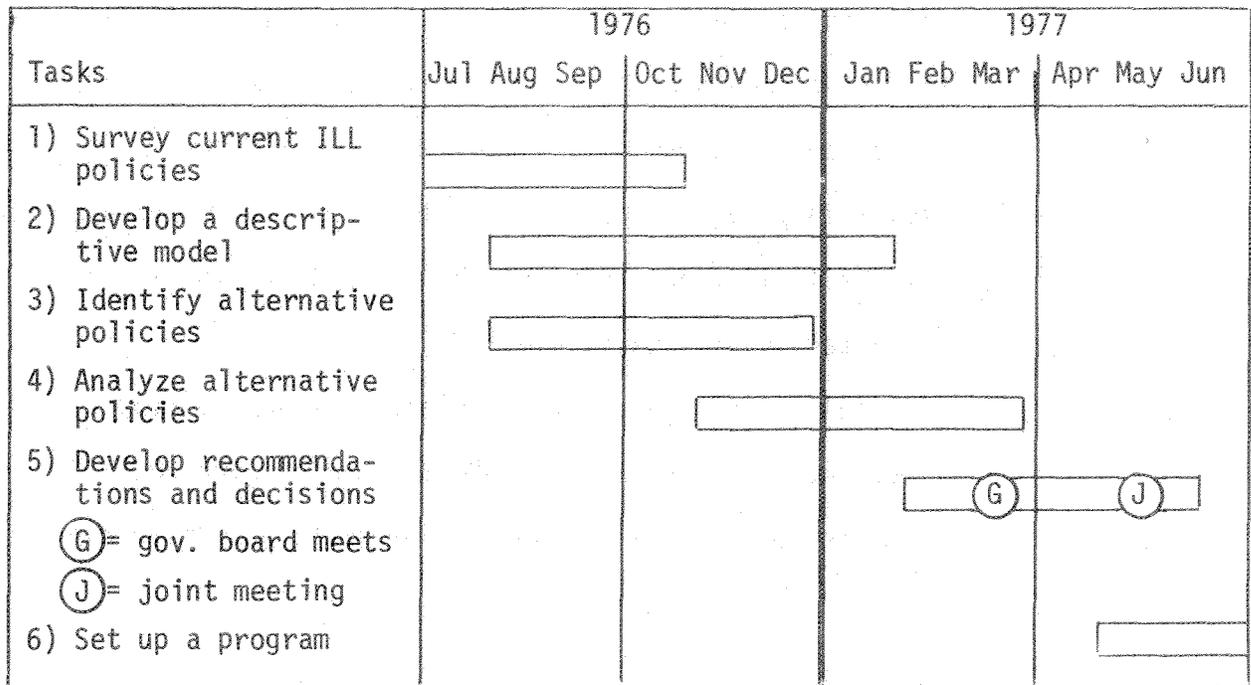


Figure 2. Proposed Schedule for the Project.

## Section 10 - Plan: Facilities Available

### D. Facilities Available

#### (1) Western Interstate Commission for Higher Education (WICHE)

WICHE is a nonprofit agency created by the 13 western states. The Commission administers the Western Regional Education Compact, which is an agreement among the states to work cooperatively to improve educational programs and facilities. WICHE was formally established in 1951; program activity began in 1953.

Each state is represented on the WICHE governing board by three commissioners who are appointed by their respective governors. Each member state appropriates \$28,000 annually to finance WICHE's general activities. Agencies of the states may also contribute additional amounts to specific programs, as the state library agencies do for the Continuing Education and Library Resources Program under which the Western Network Project is currently operating.

WICHE serves as a fact-finding agency and a clearinghouse for information about higher education; it also makes basic studies of educational needs and resources. WICHE acts as a catalyst to help member states work out educational programs to their mutual advantage and serves western states and institutions as an administrative and fiscal agent for carrying out interstate arrangements for educational services.

The WICHE member states are: Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington and Wyoming. The Western Network's region for planning purposes currently includes these states and North Dakota, South Dakota, Nebraska, Kansas, and British Columbia as well.

## Section 1D - Plan: Facilities Available

### (2) The Continuing Education and Library Resources Program

This Program is currently administratively located in the General Regional Programs Division of WICHE, directed by Dr. Kevin P. Bunnell. The Program has a core budget that is funded by nine western state library agencies for continuing education and network planning support. The Western Network Project, funded by the Program core budget, CLR and the U.S. Office of Education, is currently a part of the program.

The place of the Western Network within WICHE, and its relationship to the Continuing Education and Library Resources Program, is currently the subject of study and discussion by the Western Network Steering Committee. One of the objectives of the Project is to determine an appropriate legal basis and structure for the Western Network. The Steering Committee is expected to reach a decision in the near future on the form of the Network and its organizational placement; the Committee may recommend that the Network be placed within the WICHE structure as a separate and relatively autonomous unit.

### (3) Facilities

WICHE is housed on the campus of the University of Colorado. Support services are operated by WICHE itself or are furnished by the University, and include fast and moderately priced printing services; purchasing and supply services; Wide Area Telephone Service; program budgeting, computer-based accounting and fiscal control; and full personnel services, including an affirmative action program.

### (4) Colleagues

WICHE, and its location at the University of Colorado, provides opportunities for obtaining expert advice and assistance for many research,

## Section 1D - Plan: Facilities Available

development and operational concerns. For example, the Western Network Project has used Oscar Miller, Head Law Librarian of the University as a consultant, and has had the benefit of several fruitful discussions with Virginia Boucher, head of the University's Interlibrary Loan Department and former chairman of the ALA Interlibrary Loan Committee. The operations research expertise available from the NCHEMS (National Center for Higher Education Management Systems) staff can be a great help to the project, as indicated in the preceding section. Also, the experience of the Student Exchange Program staff in dealing with the transfer of funds between states in a manner and for reasons similar to those suggested in this proposal is expected to be of great value.

The current Project is guided by an organizing Steering Committee of 21 persons drawn from state, ARL, academic, public and special librarians; WICHE Commissioners; and library trustees. The Executive Board of the Steering Committee, with whom Project staff meet on a monthly basis, consists of Dr. Joanne E. Arnold, Acting Associate Vice-Chancellor for Faculty & Staff Affairs, University of Colorado (Chairwoman of the Board); Herschel V. Anderson, State Librarian, South Dakota; Gerald A. Rudolph, Dean of Libraries, University of Nebraska; Roderick G. Swartz, State Librarian, Washington; and David C. Weber, Director of University Libraries, Stanford University. Lura G. Currier, Director of the Pacific Northwest Bibliographic Center; Donald B. Simpson, Director of the Bibliographical Center for Research. Mary Jane Reed, Assistant State Librarian (Washington); Gerald D. Newton, Chief, Technical Services Bureau, California State Library (representing the CLASS network until an executive director is selected); T. John Metz, Executive Director of MIDLNET; and James Kennedy, Executive Director of Amigos Bibliographic Council have provided technical advice to the Project staff.

## 2. PERSONAL PUBLICATIONS

### A. Western Network Staff

Mrs. Eleanor A. Montague, Project Director, Western Network Project, will serve as Principal Investigator for the work proposed. She will be assisted by Mr. Karl M. Pearson, Jr., Systems Analyst; Ms. Maryann K. Brown, Cost and Funding Analyst; and Mrs. Anita L. McHugh, Research Assistant.

Mrs. Montague's publications include:

A User's View of BALLOTS, with Logan, Timothy; Kady, Glee Harrah; Stovel, Madeleine. Nos. 4, 5, 6, 7, Stanford Center for Information Proceedings, BALLOTS Project, Sept., 1974.

Bibliographic Automation of Large Library Operations Using a Time-Sharing System: Phase II, Part 1 (July 1966 - June 1971). Final Report, with Epstein, A.H.; Davidson, Wayne; Stovel, Madeleine; Veaner, Allen B., Project Number 7-1145. Stanford University Libraries, Stanford, California, Feb., 1972, 207 pp.

"Project BALLOTS: Cost and Benefits" in American Society for Information Science. Annual Meeting, 36, Los Angeles, California, 21-25 Oct. 73. Proceedings. Volume 10: Innovative Developments in Information Systems: Their Benefits and Costs, edited by Helen J. Waldron and F. Raymond Long. American Society for Information Science, Washington, D.C.' Greenwood Press, Westport, Connecticut, 1973, 159-160.

Mr. Pearson's publications include:

"Minicomputers in the Library" in Annual Review of Information Science and Technology, Vol. 10, American Society for Information Science, 1975.

"MEDLARS II: A Third Generation Bibliographic Production System," with Katter, Robert V., in: Journal of Library Automation, June 1975.

"Medical Dial Access Libraries: Their Use and Utility," with Bloch, Alice, in: Journal of Medical Education, 49, Sept. 1974, pp. 882-896.

"A System for Cataloging Computer Software." Special Libraries, 64:12, Dec. 1973, pp. 545-554.

"Status and Prospects of Automation in the Federal Library Community," with Cuadra, Carlos A., in: Proceedings of the American Society for Information Science, Vol. 8, 1971, pp. 291-295.

Ms. Brown's publications includes:

IUC/OCLC Network Evaluation: Final Report, with Roderer, Nancy K. Westat, Inc., Rockville, Maryland, August 31, 1975.

B. NCHEMS Staff

The National Center for Higher Education Management Systems at WICHE will assist the Western Network staff. Representative NCHEMS personnel who will be assigned to the work proposed are Wayne Kirschling, Robert G. Gray, and H. Kent Weldon.

Dr. Kirschling's publications include:

Educational Modelling: Misdirections and New Directions. Boulder, Colorado: NCHEMS at WICHE, January 1975. To appear in the Jossey-Bass New Directions Series for Institutional Research.

A Conceptual Approach to Describing Postsecondary Education. With Robert Wallhaus and Dennis Jones. Boulder, Colorado: NCHEMS at WICHE, October 1972.

A Federal Planning Model for Analysis of Access to Higher Education. With George Weathersby and Vaughn Huckfeldt. Boulder, Colorado: NCHEMS at WICHE, September 1972.

Mr. Gray's publications include:

Some Models and Solution Techniques for Analyzing Student Flow Processes. Boulder, Colorado: NCHEMS at WICHE, 1974.

Information Useful for Academic Department Planning and Management. With Glenn Miyataki. Paper presented at the annual forum of the Association for Institutional Research, 1975.

Mr. Weldon's publications include:

State Financial Support of Higher Education: A Framework for Interstate Comparisons. With Marilyn McCoy and Wayne Kirschling. Boulder, Colorado: NCHEMS at WICHE, 1975.

Prototype Software for a Federal Planning Model for Analysis of Accessibility to Higher Education. With Vaughn Huckfeldt. Boulder, Colorado: NCHEMS at WICHE, 1973.

### 3. ACCOMPLISHMENTS OBTAINED BY OTHERS

For academic institutions, the magnitude of the problem of imbalance between lending and borrowing is shown in Vernon Palmour, et al.'s, A Study of the Characteristics, Costs, and Magnitude of Interlibrary Loans in Academic Libraries (Westport, Conn.: Greenwood Publishing Co., 1972) and Academic Library Statistics 1974-1975 (Washington D.C.: Association of Research Libraries, 1975). A comparison with the statistics for western ARL libraries reported for the 1973-1974 year shows that the number of loans increased from the previous year by about 15% and borrowing of original materials increased about 7% (although photocopying borrowing decreased by 1%). Several institutions have set charges for interlibrary loan service in an effort to recoup some of the cost burden imposed by the disparity between lending and borrowing which, in western ARL libraries for 1974-1975, was about 315,000 versus 77,000 transactions. However, these charges are undoubtedly contributing to a higher overall cost for interlibrary loan because of the efforts devoted to record keeping, invoicing, and paying, and because requesting libraries spend some amount of effort in shopping around to request materials from libraries charging the least.

Dr. Robert M. Hayes in A System for Inter-Library Communication (SILC) (Washington, D.C.: Association of Research Libraries, 1973) described in detail how a national commercial time-sharing service could be used for communicating ILL requests while performing an accounting function. A proposal for a second phase for developing a modified SILC was submitted to the National Science Foundation, but was not immediately funded and was subsequently withdrawn by ARL in December, 1975. A question has been raised

about the calculation of the estimated cost for operating the system, and advancing technology has dated some of the specifications suggested for the system. Nevertheless, the general concept is certainly still applicable, but should be based on a communications system for libraries that integrates all functional requirements and that provides for connection to all the bibliographic utilities. Whereas the SILC proposal dealt with communication among academic libraries, for the most part, an interlibrary loan system should also include state library agencies, public and special libraries, particularly since state-based and multistate networks are so rapidly evolving.

A study of the need for, and location of, periodicals centers along the lines of the British Library Lending Division and as suggested by Vernon Palmour, et al. in Resources and Bibliographic Support for a Nationwide Library Program (prepared for the National Commission on Libraries and Information Science by Westat, Inc., Rockville, Maryland, 1974) is currently being undertaken by Palmour. This study, however, addresses only areas of peripheral concern to the project proposed here. In fact, there are several centers in operation now that are used by some western libraries, including the Center for Research Libraries, the Associated Colleges of the Midwest (ACM) Periodical Bank, and the Pacific Northwest Bibliographic Center.

The Ohio College Library Center, under a grant from USOE, is developing an interlibrary loan assistance module to operate in conjunction with that organization's bibliographic data base. Since upwards of 1,000 libraries are now OCLC users, the availability of this module may have a major impact on interlibrary loan activity and policies. However, it is too early yet, and insufficient information is available to judge, how much effect would be felt by western libraries where OCLC use is not as widespread as it is in

other areas of the country.

As reported by William B. Rouse, et al. in A Mathematical Model of the Illinois Interlibrary Loan Network: Report No. 2 (Urbana: University of Illinois, Coordinated Science Laboratory, March 1975), a network modelling computer program called ILLINET is being developed that promises to be of benefit in assessing the effect of intrastate ILL policies on fill rates, delays, costs and processing loads on libraries in a network. Although this program appears to be too precise a tool to fit the needs of the proposed project exactly, it may be useful as a supplement to the other analytical techniques to be employed. In a personal communication, Dr. Rouse estimated that the ILLINET program would be available for use by the summer of 1976, and that the University of Illinois would provide access for out-of-state users via TYMSHARE or similar dial-up service.

#### 4. BIOGRAPHICAL SKETCHES

Normally, it is desirable to assign staff to a project who could allocate most or all of their time to that project. In this case, however, it is advantageous to make use of the talents and experience of a number of persons to supplement the efforts of a small core staff. Because most of the persons contributing to this project will also be working on other projects for the Western Network or for the library community in the West and nationally, there will be a good deal of informal carryover from one activity to another, and all projects will benefit synergistically thereby.

In addition to the staff members of the Western Network and NCHEMS, whose resumes are given in the following material, we expect to employ experts in various areas as consultants for one to three days at a time. While we have not as yet identified specific requirements for particular consultants, we expect that experts such as Vernon E. Palmour, Virginia Boucher, Philip Long, Alice Wilcox, Sarah Thomson, Edwin E. Olson, Brett Butler and James Dolby might be contacted to make a contribution to the project on a consulting basis.

We will also employ a special technical advisory working committee consisting of 4-7 representatives of state librarians, ARL librarians, bibliographic center directors, and special librarians to guide and assist the project staff and to provide liaison to members of the constituencies that the advisors represent. Additionally, members of the Western Network Steering Committee and State Network Design Teams will be called upon to contribute advice and assistance to the project.

These librarians, network directors and board members, ARL library directors, chief officers of state library agencies, WICHE Commissioners, and other concerned citizens can be expected to ensure that practical policies and implementation procedures result from the effort expended on the project.

## Section 4A - Biographical Sketches: Western Network Staff

### A. Western Network Staff

Eleanor A. Montague, Project Director for the Western Network, will serve as the Principal Investigator for the proposed work. She will devote approximately 40% of her time to the project, primarily on Tasks 3, 5, and 6 in assisting in policy analysis, the presentation of conclusions and recommendations, and planning for a pilot program.

Karl M. Pearson, Jr., Systems Analyst for the Western Network, will devote approximately 50% of his time, primarily in analyzing the effects of current and proposed policy structures for interstate resource sharing and in planning a pilot program to facilitate cooperative activity.

Maryann K. Brown, Cost and Funding Analyst, will devote approximately 50% of her time, and Anita L. McHugh, Research Assistant, will devote approximately 25% of her time to compile current ILL policies and available interstate ILL data, to carry out limited surveys to collect additional data needed, and to analyze the cost impacts of present and proposed policies.

## ELEANOR A. MONTAGUE

Educational Background

- B.A. - University of Chicago - 1964  
Anthropology
- M.A. - University of Chicago - 1967  
Graduate Library School
- M.B.A. - University of Santa Clara, California - 1974

Employment Experience

December 1975 to Present - Project Director for the Western Network Project, Western Interstate Commission for Higher Education. Responsible for integrating the activities of the Project staff with guidance provided by the Project Steering Committee and for direction of efforts to establish a cooperative network including libraries and multistate library organizations in 17 western states and British Columbia.

September 1967 to December 1975 - Assistant Manager, Project BALLOTS. Responsible for project budgeting, scheduling, long-range planning, proposal preparation, and systems analysis. Responsible for multi-library network development using BALLOTS, including establishing rate schedules, cost center management, marketing, and financial forecasting. Managed the design, implementation, and on-going evaluation of multi-library pilot network.

With the project since its inception, held senior level responsibilities including: analysis of current systems in all library functional areas, formulation of BALLOTS on-line requirements, forms design, hardware evaluation, programming specifications, internal requirements documentation, external user reference and procedural documentation, system acceptance testing, library personnel training, cost analyses of the manual and automated systems, and statistical sampling and analysis. Throughout development of the automated system, maintained close contact with library personnel and administration regarding the design, implementation and impact of the new system on the library.

September 1966 to September 1967 - Chemistry Librarian, University of Chicago. Head of departmental library with responsibility for book selection, overall administration, communication with faculty and coordination with General Library procedures and administration.

Summer, 1966 - Law Cataloger, University of Chicago Law School Library.

Additional Information

CLASS (California Library Authority for Systems and Services) Planning Committee. Technical Consultant and member to December 1975. Member of ad hoc committee on Spine Label Standards, Bibliographic Record Standards and Network Evaluation Standards.

ELEANOR A. MONTAGUE (cont.)

WICHE (Western Interstate Commission for Higher Education) Western Council Bibliographic Network Planning Committee Technical Task Force member. Participated in the preparation of the proposal to the Council on Library Resources for the design of a Western Regional Bibliographic Network.

WICHE representative to the Public Service Satellite Consortium.

Professional Organizations

American Library Association, California Library Association, and American Society for Information Science.

KARL M. PEARSON, JR.

### Educational Background

- B.A. - Bowdoin College - 1954  
English Literature, elected to Phi Beta Kappa
- M.S. - University of California, Los Angeles - 1968  
Information Science (Documentation)  
Elected to Beta Phi Mu.

### Employment Experience

October 1975 to Present - Systems Analyst for the Western Network Project, Western Interstate Commission for Higher Education. Performs studies for networking management and technological development, participates in planning activities, prepares reports and other presentations to disseminate information about the Network, and consults with western librarians requesting Network assistance.

1968 to October 1975 - System Development Corporation, Santa Monica, California; Bibliographic Systems Specialist; Project Head. Participated in a number of library and information science system development projects and studies. Most recently, participated in a study of education information resources and user needs, performed under a contract with the National Institute of Education. Previously, he participated in the design of MEDLARS II and in the training for the National Library of Medicine staff, operators of that system. In other work, he helped design and program the LISTS/ALPS and AIMS experimental on-line systems for various library functions, participated in a survey of automation in federal libraries and operated a bookform catalog service.

1961 to 1968 - System Development Corporation, Santa Monica. As a senior programmer, he participated in the development of qualification tests for two major air defense systems. These comprehensive testing efforts, made necessary by stringent customer requirements, provided excellent experience in devising procedures for guaranteeing the successful performance of a large-scale program system. As a Technical Assistant, he prepared programming schedules, drafted operating procedures, chaired the program change suggestion committee, maintained coordination with other programming groups, and prepared a study of methods and procedures for quality assurance of large-scale program systems. From 1961 to 1963, he programmed computers to interpret operator keyboard actions at display consoles and served as head of a unit of five programmers.

1957 to 1960 - Cost accountant for the printing division of the Dennison Manufacturing Company in Framingham, Massachusetts; conducted studies of printing operations, monitored cost reports, and assisted in the analysis of suggested improvements in printing methods.

KARL M. PEARSON, JR. (cont.)

Professional Organizations

American Library Association, American Society for Information Science

## MARYANN KEVIN BROWN

Educational Background

B.A. - University of California, Davis - 1971  
History

M.L.S. - University of California, Berkeley - 1973

Employment Experience

October 1975 to Present - Cost and Funding Analyst for the Western Network Project, Western Interstate Commission for Higher Education. Determines representative costs of present library services without network support, determines future costs of these library services through the network, and compares present costs to future costs to project costs/benefits from network services. Also analyzes costs and funding alternatives for developing an equitable program of financial support for the network, including identification of alternative funding sources, policy analysis and development of cost models for evaluation of alternatives, and publishing results for the benefit of the total library community.

August 1974 to October 1975 - Library & Information Specialist, Westat, Inc., Rockville, Maryland, where she performed research, analysis, data collection and questionnaire design, evaluation and cost analysis of OCLC services to Texas and New Mexico libraries. She also did marketing work and wrote proposals.

December 1971 to July 1974 - Legal Analyst, Chevron Asphalt, Division of Standard Oil Company of California. She researched plaintiff and defendant files in an anti-trust suit, implementing an information retrieval system for a price study, citation checking, etc.

November 1972 to May 1973 - Indexer, Aaron Fessler Greenwood Press. Claimed and indexed municipal documents held by the University of California, Institute of Governmental Studies.

August 1968 to December 1971 - Clerk, Library, University of California, Davis, process and claiming for U.S. government documents. She also assisted in providing public service for government documents and periodicals.

Professional Organizations

American Library Association

ANITA L. MCHUGH

Educational Background

B.A. - University of Omaha, Omaha, Nebraska - 1963  
Mathematics, including statistics.

31 graduate credit hours, including probability and statistics, at the University of Colorado, Boulder, Applied Mathematics Department, 1963-65.

Several courses in programming techniques and data structures at the University of California, Berkeley Extension, 1970-72.

Employment Experience

November 1975 to Present - Research Assistant, Cost and Funding Studies, Western Network Project, Western Interstate Commission for Higher Education. Major responsibilities include: (1) compile, tabulate, analyze, extrapolate, and display appropriate sets of data collected from approximately 150 libraries; (2) review incoming data for quality control, implement follow-up steps for insuring complete data collection, and analyze open-ended questions on survey instruments; (3) organize and maintain files of incoming data, mailing lists and general project files; (4) code data from survey instruments, supervise key punching and computer processing, and assure quality control of computations; and (5) assist in review of literature and relevant research publications.

1964 to 1965 - Highland Services, Inc., Denver, Colorado. She operated a keypunch and a small computer, and did some programming.

1963 to 1965 - University of Colorado, Applied Mathematics Department, Numerical Analysis Center. As a Graduate Assistant, she was an aide in classes and did laboratory work programming in FORTRAN and assembly language.

Summer, 1963 - Holloman Air Force Base, New Mexico, worked as a mathematician for data reduction on test inertial guidance systems.

B. National Center for Higher Education Management Systems (NCHEMS) at  
WICHE Staff

Members of the NCHEMS staff will assist in the proposed work on Tasks 2 and 4, and will consult on Tasks 5 and 6, to a total of about 33% of one FTE. Resumes of the NCHEMS staff most likely to be assigned to work on the project follow.

## WAYNE KIRSCHLING

Educational Background

- B.S. - U.S. Air Force Academy - 1964  
Management
- M.S. - Stanford University - 1965  
Industrial Engineering
- M.B.A. - University of Colorado - 1970  
Management Science
- D.B.A. - University of Colorado - 1971  
Management Science

Employment Experience

1971 to Present - National Center for Higher Education Management Systems at the Western Interstate Commission for Higher Education. He is currently Director of Research and Analysis, and Associate Director of NCHEMS. He is also Professor Adjoint, Management Science Department, College of Business, University of Colorado, where he teaches graduate level courses in management science.

July 1968 to August 1970 - Department of Economics and Management, U.S. Air Force Academy; Instructor (Undergraduate management courses).

January 1968 to August 1970 - School of Business, Colorado Springs Center, University of Colorado; Honorarium Instructor (Undergraduate statistics and management science courses).

June 1967 to June 1968 - Office of the Secretary of the Air Force, Washington, D.C.; Chief of the Data Collection and Analysis Branch (Responsible for monitoring and evaluating Air Force wide manpower studies).

June 1966 to May 1967 - Headquarters Air Defense Command, U.S. Air Force, Colorado Springs, Colorado; Officer in charge of manpower research projects.

August 1965 to May 1966 - Richards-Gebaur Air Force Base, Kansas City, Missouri; Management Engineering Officer (Responsible for designing and carrying out a study to determine manpower standards for supply functions at 150 air force bases.)

## ROBERT GEORGE GRAY

Educational Background

- B.S. - Clarkson College of Technology - 1966  
Industrial Distribution
- M.S. - Clarkson College of Technology - 1970  
Industrial Management
- D.B.A. University of Colorado  
Management Science; Econometrics

Employment Experience

January 1975 to Present - Planning and Management Systems Division, Western Interstate Commission for Higher Education; Senior Staff Associate with major responsibilities for developing analytical procedures to be used to understand and project current and future distribution of nursing needs and resources.

January 1972 to December 1974 - National Center for Higher Education Management Systems at the Western Interstate Commission for Higher Education; Senior Staff Associate, where he was responsible for developing and testing intra-institutional planning and management procedures, e.g., faculty/activity scheduling, and faculty flow. He was also responsible for developing an approach to student flow analysis and for analyzing faculty activity data.

January 1972 to June 1973 - Management Science Department, College of Business, University of Colorado; Teaching Associate. Responsible for teaching undergraduate courses in quantitative methods.

August 1971 to December 1971 - Business Research Division, College of Business, University of Colorado; Teaching Assistant. Responsibilities included organizing state employment data.

August 1970 to September 1971 - Hurdman & Cranstoun, Penney & Co.; Junior Accountant. Responsibilities included conducting partial and complete financial audits and preparing personal and corporate tax returns.

July 1969 to June 1970 - Industrial Management Department, Clarkson College of Technology; Instructor. Responsible for undergraduate courses in statistics and business simulation.

July 1966 to September 1968 - General Electric Company; Manufacturing Management Program. Responsible for supervising the work of 30 employees assembling amplifiers under contract with the U.S. Air Force. Other positions involved working in quality control, facilities and material flow.

H. KENT WELDON

Educational Background

B.S. - University of Colorado - 1971  
Applied Mathematics and Computer Science

M.S. - University of Colorado - 1973  
Computer Science

Employment Experience

1972 to Present - National Center for Higher Education Management Systems at Western Interstate Commission for Higher Education; Staff Associate. Responsible for assisting in applying analytical techniques in Cost Finding Principles, National Planning Model, Information Exchange Procedures and State Analysis projects. He has also performed analytical and computer-based systems activities in the Delphi, National Planning Model and Cost Finding Principles projects.

His areas of expertise include: development of mathematical programming model for National Planning Model; design and implementation of software and data management systems for both interactive and batch operation; and development of mathematical models for use within and outside of NCHEMS.

Professional Organizations

Association for Computing Machinery.

5. PARTICIPATION OF OTHER UNITS IN ORGANIZATION: NATIONAL CENTER FOR EDUCATION MANAGEMENT SYSTEMS (NCHEMS)

The mission of NCHEMS is to undertake research, development, and dissemination activities (and to support and encourage similar efforts by others) that will help improve planning and management in postsecondary education. To this end, the Center seeks to extend the adoption of modern management concepts and techniques in postsecondary education. It seeks equally to enhance the ability of academic administrators and policymakers to use these concepts and techniques to full effect in their efforts to improve productivity and achieve more comprehensive, demand-sensitive planning of programs and services. Efforts to achieve these objectives proceed from the premise that planning and management in postsecondary education (PSE) can be improved through (1) better information, and (2) more effective use of this information in decision making.

As a part of improving management information, NCHEMS has developed standard definitions for data about PSE finances, facilities, staff, students, postsecondary education outcomes and activities, plus standard taxonomies and classification structures for these data. These information-base products: (1) provide guidelines for institutions and agencies to support their information system developments; (2) provide a common basis for data exchange between institutions to support comparative analyses and also a common basis for reporting between the institutional, state, and national levels in postsecondary education; and (3) provide the basic data building blocks for the analytical tools and procedures developed by NCHEMS. In addition to seeking standardized data definitions, NCHEMS has accessed and

analyzed numerous existing data bases for use in various projects and has developed a broad understanding of PSE data structure, definition, history, utility and relationship to other data.

To achieve its goal of improving the effectiveness of PSE data in decision making, NCHEMS has produced a wide range of computer-based tools, illustrative analytical approaches, and procedures for carrying out special purpose analyses (e.g., program and discipline costing). These tools, approaches, and procedures are subsequently implemented for use by PSE institutions and agencies. In addition to the development of various analytical products, NCHEMS also undertakes special analytical studies at the request of interested groups. These studies involve a staff with wide-ranging skills in operations research/management science, statistics, computer science, and higher education administration.

One or more NCHEMS staff members will be assigned to work or consult with the Western Network Project staff on Tasks 2, 4, 5 and 6. This assistance will amount to approximately 33% of an FTE (full-time equivalency), and will be devoted primarily to the employment of analytical procedures in developing the descriptive models of the interstate interlibrary loan "system" in the West. It is anticipated that the models will be sufficiently complicated that computer support will be required to support analysis; the NCHEMS staff will assist in applying the computer programs they have developed to provide the necessary support. Additionally, the NCHEMS staff will assist in presenting the results of the analyses to obtain agreed-upon recommendations for policy changes suggested by project results.

6. SUPPORTING MATERIAL

No additional supporting material is being submitted.

7. PREVIOUS WORK DONE ON THIS PROJECT

The proposed work is a natural extension of the activities of the current Project, which is devoted to establishing an organization for the Western Network, obtaining commitment from potential members, and exploring several technical and policy issues affecting library automation and networking. These activities have been fully described in the quarterly reports submitted to CLR during the course of the project (and to USOE for the Cost and Funding Studies portion). A major concomitant of the expressed purposes of the present project has been a determination of what functions the Western Network, as an organization, might perform and how it might relate to other state-based and multistate organizations operating in the western region. To date, there is fairly general concurrence on the Western Network performing catalytic facilitating, coordinating, experimenting and communicating activities along the lines, and in the areas of concern, described in this proposal. High interest has been shown by members of the Steering Committee in the Western Network undertaking an administrative and fiscal agent function for interstate interlibrary loan in a manner analogous to that of the WICHE Student Exchange Program.

The Cost and Funding Studies portion of the Western Network Project is collecting data on costs and activity patterns for interlibrary loan in 100 libraries. The Studies are also providing data on costs for acquisition of items for library collections. The acquisitions data will provide a contemporary basis on which to compare the costs of purchasing to borrowing an item to fill a patron's request, where that is a feasible alternative. The

## Section 7 - Previous Work Done on this Project

instruments prepared for these studies can be easily adapted to collect additional data, should they be needed, to support the proposed project.

The instruments include:

Form #2: to collect direct and administrative costs and activity data from a sample of 88 libraries in the acquisitions, cataloging, serials and interlibrary loan departments.

Form #3: to collect more detailed cost and activity data on the same subjects as in form #2 from a sample of 12 libraries.

Forms #7, 8 and 9: to collect transactional data on a sample of interlibrary loan requests over a three-week period.

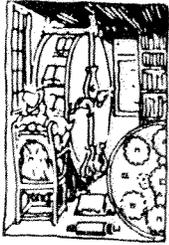
Accomplishments to date for the Western Network Project have been described in the first and second quarterly reports, "Initiating the Design and Development of a Western Interstate Bibliographic Network," (submitted to CLR) and "Cost and Funding Studies of the Proposed Western Interstate Bibliographic Network," (submitted to USOE), as well as in the Western Network Newsletter issues published in January and March 1976. These publications have been widely distributed.

The work proposed herein is totally consistent with the direction taken in Western Network Project activities to date, and builds on the Project's accomplishments. The proposed work is fully appropriate to the Network's projected role as a catalytic coordinating and facilitating agency for interstate and inter-regional library cooperation in the West.

8. BUDGET

The CLR form "Proposed Budget for Grant" is enclosed, together with detailed supporting data.

The total estimated cost for completing the project is \$122,593, but only \$99,703 is being requested from CLR. The remaining \$22,890, representing indirect expenses, will be contributed by WICHE from funds received from state library agencies and other Network members.



## COUNCIL ON LIBRARY RESOURCES

One Dupont Circle • Washington, D. C. • 20036

Tel 202 296-4757

### PROPOSED BUDGET FOR GRANT

Name and address of the institution or organization Western Interstate Commission for Higher

Education, P. O. Drawer P, Boulder, Colorado 80302

Submitted by: John C. Staley

(Signature of responsible financial officer)  
John Staley, Director of Administration, WICHE

(Name & Title - Please type)

Duration of proposed activity (see instructions below):

Beginning date: July 1, 1976 Ending date: June 30, 1977

Expense Items	Budget Amount
A. Salaries, wages, & employee benefits	61,865
B. Consultant fees	3,000
C. Travel	10,563
D. Supplies & Materials	2,075
E. Printing and duplication	3,950
F. Equipment	4,470
G. Other costs*	13,780
<b>TOTAL COSTS</b>	<b>99,703</b>

#### INSTRUCTIONS:

For projects having duration of longer than one fiscal year (July 1 - June 30), use one copy of this form for each fiscal year of activity, and a copy as a summary sheet for the total budget showing inclusive dates of the entire project.

Please provide the following information on one set of attachment sheets for each fiscal year:

- A. Salaries, wages, & employee benefits - List all position titles such as project director, research assistant, secretary, etc. State percent of time to be spent on the project, per annum salary, and beginning and ending dates of employment for each. Identify other jobs to be performed on a wage basis, i.e., per hour and rate, with beginning and ending dates of employment for each. Itemize benefits such as Social Security, retirement, hospitalization, etc.
- B. Consultant fees - Show rate and number of days.
- C. Travel - For each proposed trip by staff members or by consultants, explain the purpose of the travel, and include applicable cost information for both transportation and living expenses. Commercial travel will be reimbursed at the economy rate.
- D. - G. - Provide an explanation and computation for each item.

PROPOSED BUDGET DETAILA. Salaries, Wages & Employee Benefits (All employment dates from July 1, 1976 to June 30, 1977)

Eleanor Montague, Project Director	
40% FTE at \$27,560	\$11,024
Karl Pearson, Systems Analyst	
50% FTE at \$25,970	12,985
Maryann Brown, Cost and Funding Analyst	
50% FTE at \$17,331	8,666
Anita McHugh, Research Assistant	
25% FTE at \$9,540	2,385
NCHEMS System Analysts	
33% FTE at \$24,491 (averaged from 1/4 Kirschling, 1/4 Gray, 1/2 Weldon)	8,082
Louise Martin, Secretary	
100% FTE at \$7,369	<u>7,369</u>
Subtotal	<u>\$50,511</u>
Employee Benefits	
FICA	2,120
Retirement	4,076
Health, Life Insurance	876
Vacation accrual @ 8.8% for profes- sionals, 6.6% for non-professionals	3,796 <u>486</u>
Subtotal	<u>\$11,354</u>

TOTAL - Salaries, Wages and Employee Benefits: \$61,865

B. Consultant Fees

Estimate 30 days at \$100/day \$ 3,000

C. Travel

Boulder/Seattle, Washington to collect PNBC ILL  
data. 2 trips of 3 days @ \$192 + \$165\* = \$357 \$ 714

Boulder/Chicago, IL to meet with ALA ILL com-  
mittee. 2 trips of 4 days @ \$178 + \$220  
= \$398 796

Boulder/Minneapolis, MN to collect ILL data,  
meet with Alice Wilcox, ILL committee chair-  
woman.  
2 trips of 3 days @ \$148 + \$165 = \$313 626

Boulder/Albuquerque, NM to attend SWLA-MPLA  
conference to describe project and stimu-  
late submission of policy alternatives.  
2 trips of 5 days @ \$94 + \$275 = \$369 738

Boulder/San Francisco, CA for joint governing/  
advisory board meeting to discuss recom-  
mendations.  
3 trips of 3 days @ \$182 + \$165 = \$347 1,041

Boulder/to 12 western state capitols to collect  
information on ILL policy structure (6 states/  
trip).  
2 trips of 12 days @ \$519 + \$660 = \$1179 2,358

Governing Board and Technical Advisor travel  
Estimate 9 trips @ \$300/trip 2,700

Local travel - 600 miles @ \$.15/mile 90

Consultant travel - estimate 5 trips @ \$300/trip 1,500

TOTAL Travel \$10,563

\* (Living expenses calculated at meals/day = \$15, hotel/day = \$25, taxis, etc.  
= \$15/day)

D. Supplies and Materials

(For 3 FTE)

Office supplies at \$300/FTE	\$ 900	
Postage	1,000	
Technical reports and photocopies	<u>175</u>	
TOTAL - Supplies and Materials		<u>\$ 2,075</u>

E. Printing and Duplication(For quarterly reports, data collection forms  
and procedures, working papers and duplication\$ 3,950F. Equipment

Office furniture rental @ \$590/FTE	1,770	
Computer terminal (CRT and hard copy) rental @ \$225/month (at WICHE)	<u>2,700</u>	
TOTAL - Equipment		<u>\$ 4,470</u>

G. Other Costs

Office space rental @ \$660/FTE	1,980	
Telephone base and toll charges @ \$1200/FTE	3,600	
Computer communications-200 hours @ \$10 (for WICHE)	2,000	
Computer time		
Conferencing (computer cost only for ILL participants)	2,500	
Use of ILLINET Model	1,500	
Data reduction and model analysis	1,500	
Keypunching	500	
Conference room rental	<u>200</u>	
TOTAL - Other Costs		<u>\$13,780</u>