

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE  
NATIONAL INSTITUTES OF HEALTH  
NATIONAL LIBRARY OF MEDICINE  
Bethesda, Maryland

A G E N D A

47th Meeting of the

BOARD OF REGENTS

Starry Conference Room, School of Business  
Florida State University  
Tallahassee, Florida

9:00 a.m., March 21-22, 1974

MEETING OPEN all day on March 21 and from 9:00 to 9:15 a.m. on March 22.  
MEETING CLOSED from 9:15 a.m. to adjournment on March 22 for grant  
application review.

- I. CALL TO ORDER AND INTRODUCTORY REMARKS Dr. John P. McGovern
- II. WELCOMING REMARKS Dr. J. Stanley Marshall
- III. CONSIDERATION OF MINUTES OF LAST MEETING Dr. John P. McGovern  
TAB I (Orange Book)
- IV. DATES OF FUTURE MEETINGS
- 1974 and 1975 Calendars TAB II
- Next Meeting--June 19--20, 1974 (W-Th)  
Subsequent Meeting--November 21-22, 1974 (Th-F)  
Selection of Meeting Dates--March 1975
- |         |         |         |
|---------|---------|---------|
| (17-18) | (18-19) | (20-21) |
| (M-T)   | (T-W)   | (Th-F)  |
- V. REPORT OF THE DIRECTOR, NLM TAB III Dr. Martin M. Cummings
- COFFEE BREAK
- VI. REPORT ON INTERCOUNCIL MEETING Dr. John P. McGovern
- VII. EXPERIENCE WITH MEDLINE USER CHARGES Dr. Joseph Leiter  
AND PROPOSED CHARGES FOR INTERLIBRARY Mr. Alfred R. Zipf,  
LOAN TAB IV Discussant
- LUNCHEON - Gold Key Room, University Union
- VIII. REVIEW OF SPECTRAVISION, INC., Dr. Harold M. Schoolman  
RECOMMENDATIONS RE: LISTER HILL CENTER

3/12/74

IX. COMPUTER-ASSISTED INSTRUCTION TAB V

Dr. Harold M. Schoolman  
Dr. J. Stanley Marshall,  
Discussant

COFFEE BREAK

X. REPORT ON NATIONAL MEDICAL AUDIOVISUAL CENTER TAB VI

Dr. George E. Mitchell  
Capt. J. William Cox,  
Discussant

A. Development of Clearinghouse for Educational Materials

B. Evaluation of Educational Materials

RECESS

COCKTAILS AND DINNER--at the home of Dr. and Mrs. J. Stanley Marshall  
1030 West Tennessee Street  
Tallahassee  
Telephone: 222-3211

Musical program by Florida State University  
School of Music

RECONVENE: 9:00 a.m., March 22, 1974

XI. REPORT OF ASSOCIATE DIRECTOR FOR EXTRAMURAL PROGRAMS

Dr. Ernest M. Allen

A. Administrative Items

MEETING CLOSED FOR GRANT APPLICATION REVIEW

XII. CONSIDERATION OF PENDING APPLICATIONS

Dr. Roger W. Dahlen

A. Research Grants TAB I (Gray Book)

B. Resource Grants TAB II

C. Special Scientific Project TAB III

D. Publication Grants TAB IV

XIII. OTHER BUSINESS

Dr. John P. McGovern

COFFEE BREAK

VISIT TO FLORIDA STATE UNIVERSITY  
EDUCATIONAL TECHNOLOGY FACILITIES

XIV. ADJOURNMENT

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POSSIBLE SIGHTSEEING TRIP TO TALLAHASSEE POINTS OF INTEREST

DEPARTMENT OF HEALTH, EDUCATION,  
AND WELFARE

NATIONAL INSTITUTES OF HEALTH  
NATIONAL LIBRARY OF MEDICINE

MINUTES OF 47<sup>TH</sup> MEETING  
MARCH 21-22, 1974

STARRY CONFERENCE ROOM  
SCHOOL OF BUSINESS  
FLORIDA STATE UNIVERSITY  
TALLAHASSEE, FLORIDA

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE  
PUBLIC HEALTH SERVICE  
BOARD OF REGENTS OF THE NATIONAL LIBRARY OF MEDICINE

Minutes of Meeting 1/ 2/  
March 21-22, 1974

The Board of Regents of the National Library of Medicine was convened for its forty-seventh meeting at 9:30 a.m. on Thursday, March 21, 1974, in the Starry Conference Room of the School of Business, Florida State University, Tallahassee, Florida. Dr. John P. McGovern, Professor and Chairman, Department of the History of Medicine, Graduate School of Biomedical Sciences, University of Texas, and Chairman of the Board of Regents, presided. In accordance with P.L. 92-463 and the Determination of the Associate Director for Administration, NIH, dated February 19, 1974, the meeting on March 21, 1974, was open to the public from 9:00 a.m. to 5:00 p.m.; on March 22, 1974, the meeting was open to the public from 9:00 to 9:15 a.m. and closed from 9:15 a.m. to 1:00 p.m. for the review, discussion, and evaluation of grant applications.

Board members present were:

Dr. Eloise E. Clark  
Dr. Susan Y. Crawford  
Vice Adm. Donald L. Custis  
Mrs. Bernice M. Hetzner  
Dr. W. N. Hubbard, Jr. (March 21 only)  
Dr. J. Stanley Marshall  
Dr. Angelo M. May  
Dr. John P. McGovern  
Dr. Joseph F. Volker  
Dr. Ethel Weinberg

Alternates to Board members present were:

Col. Mims C. Aultman, representing Lt. Gen. Richard R. Taylor  
Capt. J. William Cox, in addition to Vice Adm. Donald L. Custis  
Brig. Gen. George E. Reynolds, representing Lt. Gen. Robert A. Patterson

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1/ For the record, it is noted that members absent themselves from the meeting when the Board is discussing applications: (a) from their respective institutions, or (b) in which a conflict of interest might occur. This procedure does not apply to "en bloc" actions. Only when an application is under individual discussion, and then only for applications from the Board member's own "campus," will the Board member absent himself.

2/ The Board of Regents, when considering the Extramural Programs of NLM, sits as the National Medical Libraries Assistance Advisory Board, and concurrently discharges the responsibilities of both bodies.

National Library of Medicine Staff members attending this meeting included:

Dr. Martin H. Cummings, Director  
Dr. Harold M. Schoolman, Assistant Deputy Director  
Dr. Ernest M. Allen, Associate Director for Extramural Programs  
Mr. Arthur J. Broering, Deputy Associate Director for Extramural Programs  
Dr. Roger W. Dahlen, Chief, Division of Biomedical Information Support, EP  
Dr. Joseph Lefter, Associate Director for Library Operations  
Dr. George E. Mitchell, Director, National Medical Audiovisual Center  
Mrs. Claire S. Marwick, Committee Management Officer  
Mrs. Karin K. Colton, Assistant to Committee Management Officer

## I. OPENING REMARKS

Dr. McGovern opened the meeting by welcoming Regents and alternates to the 47th meeting of the Board. He introduced and presented Presidential commissions to newly appointed Regents Dr. Ethel Weinberg, Associate Dean of the Medical College of Pennsylvania in Philadelphia, and Dr. Joseph F. Volker, President of the University of Alabama in Birmingham.

Dr. J. Stanley Marshall, Library Regent and President of Florida State University, warmly greeted Board members and welcomed them to the University.

## II. CONSIDERATION OF MINUTES OF PREVIOUS MEETING

The Board recommended approval of the minutes of the meeting of November 29-30, 1973, without change.

## III. DATES FOR FUTURE BOARD MEETINGS

The Board reconfirmed the dates of June 19-20, 1974, and confirmed the dates of November 21-22, 1974, for the subsequent meeting. March 20-21, 1975, were approved tentatively.

## IV. REPORT OF THE DIRECTOR, NLM

Dr. Cummings welcomed Drs. Weinberg and Volker and expressed his gratitude for their having rearranged their schedules on short notice in order to attend.

The Director announced that budget matters have been profoundly influenced this year by litigation which, among other results, effected the release of funds impounded by the Office of Management and Budget. Since grant applications had previously been reviewed and Library programs had already been endorsed by the Board, NLM was able to award the unfrozen funds immediately.

The Library's operating budget for FY 74, including funds released from impoundment, is \$29.7 million, an increase of nearly \$4 million over 1973. Some improvement was noted also in the area of personnel with the restoration of 10 of 21 positions previously withdrawn from NLM. Hearings on the President's FY 75 budget request for NLM, which at \$27,738,000 represents a decrease of over \$2 million, are imminent. There was a substantial reduction in Medical Library Assistance funds for 1975 to a level of \$6,282,000 from \$7,689,000 which included impoundment funds. What appears as a large increase for the National Medical Audiovisual Center in the "Revised 1974 Level" as compared with the 1974 appropriation--\$3,326,000 from \$2,566,000--represents a one-time allotment which the Library assigned to NMAC from unfrozen funds for initial outlays required by its new responsibilities as an educational materials clearinghouse.

The Director reported on the nearly \$2 million which NLM is required to contribute annually to the NIH Management Fund and for a DHEW assessment. The Management Fund is used for administrative services as well as for the Clinical Center and the NIH animal facilities. Ensuing discussion by the Board culminated in the preparation of a letter from the Chairman to the Director, NIH, asking for reexamination of the accounting principles on which the assessment was based.

Although the DHEW assessment itself is relatively minor, it looms larger when added to other non-Library drains on NLM's limited manpower or financial resources. Dr. Cummings cited the example of the Federal Energy Office (FEO) to which five Library employees have been detailed temporarily, upon request, for computer and public information activities.

The Board was brought up to date on the proposed Lister Hill Center building for which Congress appropriated planning funds in 1968. Since approval of the building by the Congress in 1968, the estimated building costs have risen from \$12 million to \$19 million.

With regard to the Williams and Wilkins litigation, Dr. Cummings advised that the plaintiff is appealing to the Supreme Court the Court of Claims' ruling in favor of the Library. The Department of Justice is filing a counter brief, suggesting that the copyright issue properly should be resolved by the legislative branch of government, a view earlier expressed by the Court of Claims.

#### International Activities

The Director reported on the MEDLARS International Policy Advisory Group Meeting, held in London on December 4-5, 1973, to renegotiate NLM's quid pro quo agreements. Mr. Melvin S. Day, Deputy Director, Miss Mary E. Corning, Assistant Director for International Programs, and Mr. Davis B. McCarn, Associate Director for Computer and Communications Systems, represented NLM. With the exception of Australia, all the Library's foreign partners have agreed that in exchange for the MEDLARS tapes they would increase their \$30,000-equivalent reimbursement to a \$50,000 equivalent. Those desiring to use the MEDLARS II computer program agreed to an additional \$50,000 equivalent in quid pro quo for the first year with a \$10,000 equivalent for each of the following years.

The World Health Organization was slow to make use of MEDLARS service which was first offered to WHO gratis in 1964. Only during the last two years have hardware and staff trained to use the system been acquired. WHO's dynamic new director general, Dr. H. Mahler, seems intent upon modernizing his organization. He has set as a priority assistance to developing countries through an international biomedical communications network. The focal points in the network would be regional libraries in Africa, Southeast Asia, and the Mediterranean region, fashioned after the Sao Paulo library which NLM helped PAHO create in Brazil. Among the most difficult obstacles

to surmount is the present cumbersome method by which communication linkages from one country to another must be approved. Dr. Cummings estimates that another decade may elapse before Dr. Mahler can realize his fervent wish for the full development of his WHO program to disseminate medical information from Geneva.

#### Conference on the Economics of Biomedical Publications

The precarious fiscal status of many biomedical journals has prompted the Director to convene at the Library on October 22-23, 1974, a Conference on the Economics of Biomedical Publications. Skyrocketing journal subscription rates, Dr. Cummings said, are making it impossible for libraries to maintain their subscriptions. An even greater casualty rate is noted among individual subscribers. It is his hope that the expected assemblage of distinguished medical publishers, editors, librarians, and scientist-users can define the problems, seek solutions, and consider new methods of support. Many major professional groups in the medical field will be offered the opportunity to attend. Not only is the Library vitally concerned, the Director said, but is itself also deeply involved through its extramural programs: (1) resource grants which subsidize libraries to purchase biomedical literature; (2) research grants which provide supportive page charges; and (3) publication grants which pay costs involved in the intellectual production as well as for preparation, printing, and distribution. Because policy decisions will be involved in charting the future course of NLM's publication-associated expenditures, Dr. Cummings suggested that a Regent attend the meeting in an active role. Regents interested in attending were invited to communicate with the Director.

#### Bicentennial

Expressing amazement that an institution of NLM's small size could be drawn into so many "uncommon affairs," Dr. Cummings related a recent DHEW announcement that the Library would serve as a principal focus in the historical aspects of the national Bicentennial planning. NLM's involvement, he said, already includes: (1) NMAC's cooperation with the Philadelphia College of Physicians in the design and preparation of exhibits to commemorate 200 years of American medicine in Philadelphia and (2) a commitment with the Josiah Macy, Jr., Foundation to (a) generate a monograph on the history of American medicine--chapters to be contributed by leaders in foreign and American medicine, (b) host a conference where the monograph participants will make individual presentations of their contributions, and (c) hold a year-long exhibit in the Library of NLM's historical materials. Dr. Cummings advised the Board that the Library would carry out the responsibilities it has already assumed but that it was his intent to decline the full responsibility of coordinating the entire medical history program for the Bicentennial.

#### IV. INTER-COUNCIL SEMINAR

Dr. McGovern reported briefly on the Inter-Council Seminar which was held on January 28-29, 1974, at the call of Dr. Robert S. Stone, Director of the



National Institutes of Health, for the purpose of sharing with participants as much council-related information as possible. He dwelt specifically on interpretations of the Freedom of Information Act and on the usefulness of the peer review system.<sup>1</sup> With regard to the former, Dr. Cummings referred to a number of legal actions, motivated by wide-ranging social change, to lift the veil of confidentiality. The lack of confidentiality, however, may hold grave implications for a scientist's reputation should there be public announcement that his project was denied support on the basis of merit.

The Chairman took the opportunity to remind Board members that matters to which they become privy in the course of grant application review must not be disclosed.

To Dr. McGovern's report on peer review, Dr. Cummings added that the frequent challenges to the process have developed from the conflicting philosophies of centralized versus decentralized funding. To date, he pointed out, no superior mechanism has been found. He noted that peer review has the strong support of Assistant Secretary for Health Dr. Charles C. Edwards.

#### V. EXPERIENCE WITH MEDLINE USER CHARGES AND PROPOSED CHARGES FOR INTERLIBRARY LOAN

Dr. Joseph Leiter, Associate Director for Library Operations, traced for the Board the historical growth of NLM's computerized services which led to the assessment of charges for MEDLINE users. He noted that only a decade ago the Library had one small computer with a single bibliographic search center at NLM. In the ensuing seven years, 11 MEDLARS centers were developed, providing up to 20,000 searches annually. Today, there are more than 250 institutions having MEDLINE agreements with NLM which are capable of directly accessing the data base at NLM. More than 250,000 searches are performed annually. He reviewed the shift of costs over the years from personnel and hardware to communication. At present, 50% of each dollar spent for MEDLINE is on communication, necessitating network management control of user demand by user charges. Such charges--first considered in the fall of 1972, announced in the spring of 1973, and implemented in August 1973--arose from (1) a need to expand network services without exhausting funds budgeted for development; (2) a desire to afford broad, toll-free service--even to outlying areas not located in node cities--by installing IN-WATS (Wide-Area Telephone System); and (3) the need to discourage trivial use.

The network communications costs of MEDLINE<sup>2</sup> are approaching \$734,000 a year, of which about \$134,000 is for WATS line costs. The WATS line costs are expected to be cut in half by the transfer of IN-WATS lines to TYMSHARE.

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<sup>1</sup>Complete minutes of the Inter-Council meeting have been mailed to all Regents.

<sup>2</sup>Total cost of MEDLINE service in FY 74 is estimated at \$1.6 million. Reimbursements will cover about \$200,000.

Dr. Leiter observed that NLM itself is responsible for the use of 16-17% of the system, which is to say that the Library is increasingly taking advantage of the on-line capability for its own internal and external activities.

The charges instituted were \$6.00 per connect-hour, plus 10¢ per page for off-line prints, and an annual surcharge of \$100 for any institution desiring to add a second terminal. The invoicing operation is performed under contract by TYMSHARE, Inc., the communications network operator.

The fact that user levels continue to rise since charges were imposed leads Dr. Leiter to conclude that the services requested are legitimate and are considered cost-effective by the user. To safeguard the system, however, and to assure the ability to meet expanded needs without straining NLM's resources, consideration is being given to further possibilities, each with pros and cons: (1) expanding the hardware, (2) increasing charges significantly, and (3) limiting prime-time use of the system. Board sentiment appeared to support the use of differential rates to encourage use at other than times of peak demand, which would produce the collateral advantage of reduced response time.

#### Document Delivery System

Dr. Leiter noted that while document delivery may differ from computerized bibliographic services, the increasing demands for interlibrary loan have reached the point where management controls may be required in this area also.

Concerning the mechanics of delivery, the Library is working toward a network based on regional and local self-sufficiency. Using the three data bases already on-line, Library personnel consider it possible to use the computer for routing and switching to the closest available resource library on a hierarchical basis. Further referrals will be possible to the Regional Medical Library, to the National Library of Medicine, and to the British Lending Library. As data on library holdings are incorporated into the system and information on usage patterns becomes available, NLM should be able to project the resource support it will be required to supply.

With Dr. Leiter's presentation as background, Dr. Cummings called upon the Board to give some thought to the possibility of charging for interlibrary loans, a policy which if enacted would represent an admittedly drastic but perhaps necessary departure from the free-library service tradition. In 1968, he pointed out, when NLM began reimbursing libraries which were lenders, the annual number of loans was one-half million. Today, the figure is approximately one million, of which NLM subsidizes about 60%. He suggested for the Regents' consideration certain alternatives, including (a) maintaining the present policy of interlibrary lending without charge; (b) offering a partial Federal subsidy; or (c) subsidizing a portion of each loan, perhaps one-third of the \$3.00 cost of each transaction.

In the ensuing discussion, Board views were expressed that (1) a modest fee would be acceptable to the user, at the same time exercising control

over inappropriate use as well as controlling the system's growth; (2) before charges can be instituted, a cost-benefit analysis would be necessary to determine suitable methods of fee collection; and (3) care should be exercised to avoid inadvertently excluding desirable users from the system.

The matter of interlibrary loan charges will be brought back to the Board following full study of all related aspects.

#### VI. REVIEW OF SPECTRAVISION RECOMMENDATIONS FOR LISTER HILL CENTER

In the absence of Drs. Abdellah and Foye who, along with Captain Cox, constituted a working group to review the SpectraVision recommendations for the Lister Hill Center (LHC), Dr. Harold M. Schoolman, Assistant Deputy Director, summarized the SpectraVision report. A condensed and somewhat redirected version of a longer report presented to the Board in November 1973, the new document delineates the role and objectives of the Lister Hill Center in relation to other NLM components. It identifies as major interrelated problem areas which LHC should address (a) enhancement of the role of educational technology in medical education and (b) the improvement of health information delivery services and capabilities. It also defines terms associated with "educational technology," the basic frame of reference within which LHC's role is envisioned. The report identifies four major goals and establishes priorities for their accomplishment:

1. General evaluation and clearinghouse function to foster educational technology applied to health service needs.
2. Promote research and development of prototype technology at the horizon of health service programs.
3. Provide a forum and center to encourage the interchange of ideas and to act as a translator between technology and health service programs.
4. Provide a focal point for technical advice, consultation, and coordination of planning for the H agencies.

Dr. Schoolman sees "educational technology" as a capstone supported in the Library by the three pillars of computer, communication, and media technology. The SpectraVision recommendation is that the LHC should provide leadership and should function in a research and development role in educational technology; others would have the responsibility for making it operational.

Captain Cox described the SpectraVision summary as complementary to the report made in July 1971 by the Steering Committee of the Association of American Medical Colleges. In reference to the goals recommended, he particularly advocates using communications technology to develop interactive modes which could achieve economy in physician time and efficiency,

respond more adequately to student training needs, control the content of the instructional system, monitor performance, and eventually bolster public confidence in the health services it receives.

The Lister Hill Center, the Director said, has achieved engineering and technical competence; it now requires the added dimension of expertise in developing the educational process. To that end, he suggested that a substantial number of the ten restored personnel positions be assigned to LHC to be used for recruiting medical planners of high calibre and recognized stature. The Board will be kept informed.

Dr. Cummings reported that the Bureau of Health Resources Development in the Health Resources Administration has sought NLM's help in assisting new health professional schools along the lines covered in today's discussion. Both HRA and NLM agree that educational programs should be geared first to the faculty member, then to the student, and are working together on a teacher training program to encourage greater faculty receptiveness to new educational technologies. The Director hopes to make the Library's technological facilities available to health professional schools in general and to medical schools in particular.

Dr. Joseph F. Volker commended the sharing of NLM's resources and suggested that thought be given to NLM's associating itself with the four new medical schools projected by the Veterans Administration which is responsible for the largest organized system of health-care delivery in the country.

Concerning the SpectraVision report, Dr. Volker expressed some reservations. He was not convinced that in defining the goals cognizance was taken of other significant problems, principally that of retraining personnel. Dr. W. N. Hubbard, Jr., strongly endorsed Dr. Volker's concerns. Recalling the Critical Common Paths and PERT diagrams to which Captain Cox had alluded, Dr. Hubbard suggested that such analytical devices should be used to determine whether the goals are any more likely to be achieved under the Lister Hill Center than they were under any other aegis for the last 25 years.

Captain Cox added that while collaborative efforts by AAMC, AADS, and NLM and its NMAC component are expected to achieve great success in spreading learning theories and providing materials in the media area, the application of theories and the use of advanced technology in the health services would have to await a vast personnel retraining effort.

That the Library shares the Board's view was evident in Dr. Cummings' statement that the only training grants which NLM will continue to support are those which relate the health professions to the new computer technology and its application to health.

## IX. REPORT ON NATIONAL MEDICAL AUDIOVISUAL CENTER

Dr. George E. Mitchell, Director of the National Medical Audiovisual Center, gave an illustrated report on two aspects of NMAC activities: the development of a clearinghouse for educational materials, and the evaluation of those materials. The clearinghouse concept has been an NLM goal for several years. That it has come to fruition is a tribute to the cooperation NMAC has received from its collaborators, the Association of American Medical Colleges (AAMC) and the American Association of Dental Schools (AADS). Dr. Mitchell listed the stages in the Clearinghouse's development, defined its scope, and described its objectives of developing a data base of high-quality educational materials and informing medical educators about them by means of printed bibliographies and machine-generated searches. Of the 35 different types of materials identified as warranting eventual inclusion, seven of the most commonly used types were selected for immediate entry. In identifying the numerous elements of potential interest, NMAC, Dr. Mitchell said, has sought the advice of representatives of user-groups. Once identified and approved, the elements are subjected to standardization of format and style and are placed in the system to which the user has five methods of access.

To evaluate the materials expected to become part of the educational programs destined for dissemination to all health professional faculties and students, the collaborators apply three essential criteria: the appropriateness of content, the validity of the material, and the proper media of presentation.

Applauding the report and the educational opportunities afforded users in the medical community, Dr. Ethel Weinberg sought answers to why some institutions--specifically in the Northeast section of the country with which she is associated--avoid their use. Dr. Cummings suggested that long-established medical schools may not experience the personnel and resource problems existing in the newer schools, although he noted that particularly strong stimulus for the program came from Dr. Robert H. Ebert of Harvard. Dr. Hubbard characterized the problem as one of values, historic behavior, and the utilization of scientific knowledge.

Responding to Dr. Volker's observation that the educational materials would be of tremendous value to a health-care team, Dr. Mitchell stated that the need has been recognized and that expansion can be expected but that it was necessary to limit the scope initially to medical and dental areas in order to launch the program.

Captain Cox, serving as primary discussant of the presentation, labeled the joint venture a "most beautiful demonstration of partnership." He sees in it the end of the separatism of parochial interests and predicted that strong cooperation will be forthcoming from other sources interested in both the conceptual evolution taking place in the Lister Hill Center and the educational materials coming out of NMAC. He pointed out that in

addition to eliminating unnecessary and possibly unrewarding expenditures, the program provides for peer review and assures quality control. Captain Cox expects further benefits once the program is available on-line: an economy of teacher time, which will release faculty for more individualized student attention, and an improvement in the quality and quantity of graduates.

He noted one problem area: What criteria will be used to measure teaching effectiveness? He believes the answer will be found eventually in career milestones, e.g., how well candidates handle Board examinations and whether they use the resources in continuing education.

Dr. Schoolman noted for the record that the uniformed services and the Veterans Administration have been actively cooperating and are represented on the Steering Committee that guides the undertaking.

#### X. COMPUTER-ASSISTED INSTRUCTION

Dr. Schoolman described Computer-Assisted Instruction as an increasingly important educational technology which is here to stay--if not precisely in present terms, then in some form of computer-student interaction. Resembling yet differing somewhat from NMAC's multimedia activity in concept, problems, and implementation, CAI has six major areas which the Library must address: educational needs of users; faculty resistance; content development; clearinghouse; evaluation; and distribution.

Users will have to be introduced to computer interaction: its potential, its role in carrying out educational objectives, and the technicalities of its application. NLM took initial steps in this direction by (a) sponsoring an exploratory program for 80 medical schools which were afforded access to operating CAI systems; (b) supporting studies to analyze user needs and faculty resistance to certain technologies; (c) arranging conferences to serve as user forums; and (d) distributing relevant reports. Of high priority among projected plans is faculty education and training, a matter on which the Board focused particular attention during the meeting. In this respect, Dr. Schoolman sees NLM's contract with AAMC and AADS, in which BHRD is a partner,<sup>1</sup> as showing great promise, as does the newly established AAMC Faculty Training Division.

In discussing factors influencing faculty adoption of computer-assisted instruction, Dr. Schoolman cited problems of hardware and the lack of transferability which are even more complicated for CAI than for audiovisuals. NLM overcame this handicap in the experimental stage by providing access through a communications network for experimental programs. He underlined the importance of restructuring faculty behavior (emphasized repeatedly by meeting participants) by predicating faculty rewards on educational activities--in addition, of course, to research activities.

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<sup>1</sup>"Establishment of Collaborative Program for Developing a National Network for Educating Health Professionals"--N01-LM-3-4703

Dr. Schoolman does not view the funding of fundamental content development as a Library obligation. He considers it more likely the responsibility of the Health Resources Administration which he believes would be amenable. A more serious matter, however, is that of author incentive and the degree to which the proprietary rights issue will inhibit the sharing of materials.

It is essential at this time to create for the computer-assisted instruction area an NLM-AAMC-AADS body similar to but of wider scope than the parallel committee established for audiovisuals. In addition, Dr. Schoolman agreed, following Dr. Hubbard's suggestion, that some materials might be referred for content examination to review panels of the National Board of Medical Examiners. Clearinghouse functions and evaluation procedures for CAI resemble those applicable to audiovisuals but are more complex.

Present and future activities related to evaluation and distribution were reviewed briefly. A possible answer to the lack of standardization is the concept of the large central computer as the core of a massive communications network. An NSF-funded prototype is presently in operation in the form of the University of Illinois' Plato Program. The alternative to the large-computer concept would require translator programs, mini-networks, etc. Herein lies a fundamental issue requiring early resolution.

Dr. Marshall spoke of his own intimate knowledge of the Plato program and enlarged somewhat on Dr. Schoolman's remarks. Beginning in the late 1950's, the School of Engineering of the University of Illinois began to develop sophisticated and innovative hardware for the University's own concept of CAI. It has since prepared over 200 "courseware packages" of educational materials to use in the system. Unlike the hardware, its "packages" contain not new material but modifications of existing programs. The intent was not one of changing the format of instruction but of adapting learning methods to Plato.

Dr. Marshall pointed out that Florida State University has been engaged in CAI in one form or another for some ten years. The University is at present cooperating with the University of Illinois on an extensive curriculum development program. He and his colleagues are enthusiastic about Plato but recognize that it may have shortcomings; trial and error should reveal its strengths and weaknesses. He sees as one of its great advantages the versatility which allows the user to modify the program he is using as he sits at the console. While noting progress in the field, Dr. Marshall agrees that "we have a long way to go before we make a science of CAI."

Commenting on a number of points, Dr. Marshall expressed conviction that many of the problems now apparent in CAI will clear up in due course but will require time. It is not unusual for quality control to lag behind development to a greater degree in the behavioral sciences than in the hard sciences. He agreed that in the development of evaluative methodology, where the need is very great, only limited progress has been recorded. For some time to come, Dr. Marshall thinks that the newness of the field and the scarcity of equipment will force CAI users to locate each other by

word of mouth. Concerning faculty resistance, he considers the economics of the present "buyer's market" in the academic world as providing leverage helpful in persuading faculty members to respond more fully to the needs of their students and to participate in the CAI process. Dr. Marshall would like to see the pursuit of cost-effectiveness set aside for a few years to give emerging technologies an opportunity to develop unhampered. He agrees that the matter of proprietary interests presents a problem of major proportions but hopes that it will be solved when Congress comes to grips with copyright legislation.

Captain Cox observed that there are areas where computer science applied to behavioral objectives has proven cost-effective: in aircraft operation and in manned weapons systems. He reiterated his hope that the principle would soon be applied to hospital training as a means of eliminating the evils of protracted hospital stays. Whether Plato or some other method is adopted, he believes the important thing is to make a start.

#### XI. REPORT OF ASSOCIATE DIRECTOR FOR EXTRAMURAL PROGRAMS

Dr. Ernest M. Allen, Associate Director for Extramural Programs, announced that \$94 million of impounded funds have been released to the Bureau of Health Resources Development (BHRD) for construction purposes. According to an existing agreement, construction projects involving libraries are to be reviewed by both NLM's Board of Regents and the BHRD council. Because the National Advisory Council on Health Professions Education--the BHRD council--will meet to recommend awards on June 10, predating the next Regents' meeting, Dr. Cummings had suggested the earlier convening of a subcommittee to review the applications and provide advice in the Board's name. The Chairman agreed, appointing Mrs. Hetzner, Dr. Weinberg, and Dr. Volker to serve. The Library's staff person will be Mr. Arthur J. Broering, Deputy Associate Director for Extramural Programs, who headed NLM's construction grant program before its phaseout.

Dr. Allen brought to the Board's attention two January 1, 1974, NIH manual issuances: one concerning operating procedures and the other, the review of program objectives. Under the operating guidelines the definition of a quorum--which Dr. Allen observed had been variously interpreted in the past--has finally been spelled out: a majority of the currently appointed members, including those in ex officio status.

Another aspect of the issuance directs that where a national advisory council or board disagrees with the unanimous vote of the initial review group on scientific merit, the application in question is returned for reconsideration. In the case of a split vote by the initial review group--split vote meaning two or more--a board or council may agree with the minority opinion without returning the application for reconsideration by the IRG. Dr. Allen suggested that the Board reverse its June 1973 decision which required reconsideration by the IRG in such instances. It was so moved and passed.



The second NIH manual issuance prescribes a periodic survey of an agency's programs by the agency and its council or board. Dr. Allen noted that this has been standard procedure in the Library.

It has been concluded, Dr. Allen said, that the best possible review of the PL 480 Special Foreign Currency Program applications can be achieved by approximating the method used for the domestic publication program in that the initial evaluation will be assigned to an appropriate study section. The second and final review will be done by the Board's Extramural Programs Subcommittee, thus generally relieving the full Board of involvement with individual applications.

In the course of reviewing PL 480 projects on March 20, the Extramural Programs Subcommittee became aware of the possible influence of a biased view on the quality of applications to receive grant support or requests for the preparation and/or publication of translations in PL 480 countries. The Subcommittee, therefore, adopted the following guideline: Whenever a referee is needed in connection with the review of applications to receive grant support or requests for the preparation and/or publication of translations in PL 480 countries, someone totally disassociated from the work being considered will be sought to perform the referee function.

Progress has been made in developing a stronger working relationship between Extramural Programs and the National Medical Audiovisual Center on the review of applications involving audiovisuals. Guidelines have been worked out and are now available for distribution, along with other helpful NMAC data, to prospective applicants. The Biomedical Library Review Committee has questioned a guidelines requirement of furnishing an equipment inventory, some of its members labeling it as an onerous, expensive, and counterproductive task. It was decided to test the inventory policy through use. If after several meetings there appears to be sufficient negative reaction to warrant reevaluation, the policy will be examined again.

Regarding the moratorium on collection development projects which the Board of Regents imposed at the November 1973 meeting, since no retroactivity was intended, applications already "in the mill" were processed. No others will be considered in the future, however, unless they bear directly on the Regional Medical Library program. Several deferred applications will, of course, have to be reviewed at the June meeting.

Dr. Allen announced that requests have been sent out for contract proposals to do a study of the Improvement Grant Program's accomplishments since its inception. It was agreed at the November 1973 meeting that such a survey was appropriate at this time to determine whether and/or what changes should be made to increase the program's effectiveness.

Recalling that Board members had expressed interest in published draft regulations concerning human subjects in experimentation, Dr. Allen reported that some 500 letters conveying widely ranging views have been received by NIH. Many of the 500 were collective responses and thus represent far more voices than the figure indicates. New regulations taking these opinions into consideration are expected.

## XII. CONSIDERATION OF PENDING APPLICATIONS

Dr. Roger W. Dahlen, Executive Secretary of the Biomedical Library Review Committee, announced that the following new members of the Committee will begin their terms of office on July 1, 1974: Mrs. Marion J. Ball, Director, Computer Systems and Management Information Group, Temple University Health Sciences Center; Miss Carol L. Hampton, Assistant Professor and Biomedical Communications Specialist, Virginia Commonwealth University; Mr. Donald J. Hillman, Professor and Director, Center for Information Science, Lehigh University; Dr. Phil R. Manning, Professor of Medicine and Associate Dean for Postgraduate Medical Education, School of Medicine, University of Southern California; Dr. Ralph G. Meader, Deputy Director, Research Administration, Massachusetts General Hospital; and Dr. Richardson K. Noback, Dean, School of Medicine, University of Missouri-Kansas City.

After reminding Regents of conflict-of-interest and confidentiality procedures, Dr. Dahlen continued in closed session with the review of pending applications.

On March 20 the Extramural Programs Subcommittee met to consider the recommendations of initial review groups. The Board subsequently concurred with the Subcommittee's recommendations on all applications, including seven brought to their specific attention. The Subcommittee, during its March 20 meeting, also conducted a final review of three PL 480 Special Foreign Currency Program applications. Dr. Dahlen concluded by drawing attention to actions taken by EP staff since the last Board meeting in November 1973.

Summaries of Board actions on all Extramural grant programs are attached to these minutes. (Attachment B)

## XIII. OTHER BUSINESS

### Informed Consent

Dr. Angelo M. May asked the Board to consider a matter which is of increasing concern to the medical community: informed consent. The Library's role, in his view, should be (1) to determine the form of information which would best equip the physician to advise the patient adequately prior to surgery or other procedures and, possibly, (2) to establish through the Lister Hill Center an appropriate data-base counterpart of MEDLINE. While there was no disagreement on the importance of the issue or its compatibility with computerization, the Regents consider the Library's resources far too inadequate to allow the assumption of so awesome a responsibility. Propriety was also a factor. Some apprehension was expressed that such a move by NLM might be interpreted as preemption of some other agency's prerogatives. It was suggested that the initiative might even be taken at the state level.

Dr. Cummings expressed a willingness to make the Library's competence and technical expertise available to other agencies but stated that it was impossible for NLM to contemplate acquiring the necessary medical decision-making, problem-solving data. The Director believes that the Library can maintain acknowledged leadership in its present pursuits only by refusing to allow the dissipation of its effectiveness by overextension. Other agencies with larger budgets and more appropriate mandates should address the problem.

Dr. May recommended further exploration--possibly involving consultation with NIH--and asked that further discussion of this issue take place at the June 1974 Board meeting.

#### Visit to Florida State University Educational Technology Facilities

The highlight of the meeting was a visit to Florida State University's educational technology facilities to examine the "Program in Medical Sciences" (PIMS). Inaugurated in the fall of 1971, the program represents a joint undertaking by Florida State and the University of Florida to provide instruction in the preclinical medical sciences. Successful completion assures a student acceptance at the University of Florida College of Medicine to continue his studies or equips him for candidacy in other medical schools.

PIMS professors Drs. David White and Richard Boutwell guided Regents and NLM staff through a well-planned, comprehensive tour of hardware, software, and instructional materials. Favorably impressed by the merits of the program and its implementation, Board members were particularly pleased with the opportunity to speak directly with some of the current enrollees. As funds become available, the University hopes to increase its holdings of informational materials, the one area in which there was an observed weakness.

#### Committee Appointments

Dr. McGovern appointed Dr. Abdellah, Captain Cox, and Dr. Marshall to constitute a nominating committee and Dr. Volker to serve on the Extramural Programs Subcommittee.

#### Appreciation Expressed to Host

On behalf of the Board and NLM staff, the Chairman expressed warm appreciation to Dr. and Mrs. Marshall and to the staff of Florida State University for delightful hospitality and splendid cooperation. (Attachment C)

XIV. ADJOURNMENT

The meeting of the Board of Regents was adjourned at 1:30 p.m. on Friday, March 22, 1974.

\* \* \* \* \*

Wednesday, March 20, 1974, 2:00 p.m. to 5:00 p.m. (EP Subcommittee)  
Thursday, March 21, 1974, 9:00 a.m. to 5:00 p.m.  
Friday, March 22, 1974, 9:00 a.m. to 1:30 p.m.

ACTIONS TAKEN BY THE BOARD OF REGENTS

1. The Board endorsed a communication from the Chairman to the Director of the National Institutes of Health requesting that "the Director, NLM, discuss with the Director, NIH, a more appropriate accounting procedure by means of which reasonable and proper contribution to the NIH Management Fund by the National Library of Medicine may be determined."  
(Attachment A)
2. The Board concurred with recommendations of the Extramural Programs Subcommittee and recommended approval of the actions of initial review groups on Research, Resource, and Regional Medical Library grant applications. (Summary in Attachment B)
3. The Chairman appointed Dr. Faye G. Abdellah, Captain J. William Cox, and Dr. J. Stanley Marshall to the nominating committee; Dr. Joseph F. Volker to the Extramural Programs Subcommittee; and Mrs. Bernice M. Hetzner, Dr. Joseph F. Volker, and Dr. Ethel Weinberg to a subcommittee to review construction applications.
4. The Board expressed warm appreciation to Dr. and Mrs. J. Stanley Marshall and the staff of Florida State University for their hospitality.  
(Attachment C)

\* \* \* \* \*

I hereby certify that, to the best of my knowledge, the foregoing minutes and attachments are accurate and complete.

Martin M. Cummings  
Martin M. Cummings, M.D.  
Executive Secretary

5/20/74  
(Date)

John P. McGovern  
John P. McGovern, M.D.  
Chairman

5/27/74  
(Date)



DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE  
PUBLIC HEALTH SERVICE  
NATIONAL INSTITUTES OF HEALTH  
BETHESDA MARYLAND 20014

NATIONAL LIBRARY OF MEDICINE

March 22, 1974

Dr. Robert S. Stone  
Director  
National Institutes of Health  
Bethesda, Maryland 20014

Dear Doctor Stone:

The Board of Regents of the National Library of Medicine in the course of its examination of NLM budget is concerned by what appears to be an inappropriate accounting practice with regard to the NIH Management Fund as applied to the National Library of Medicine.

The Board of Regents is aware that prior to the 1968 reorganization, which placed the NLM within NIH, the National Library of Medicine, on a cost reimbursement basis, paid for services of maintenance and management provided by NIH. We believe that this is a more appropriate way to assess management charges rather than the present formula proration.

The Board of Regents recognizes that the assessment for all NIH Institutes and Divisions is based on the necessity of support of such activities as the Clinical Center, animal farm, etc., in addition to usual maintenance costs. This seems applicable for like entities such as the Research Institutes. However, the Board would like to point out that not only does NLM not use such facilities but that it also from its own resources provides NIH with considerable services. In this sense it is more like the Clinical Center than a Research Institute.

In general, sound accounting principles are designed so that benefits accrue to those assessed. In view of the foregoing, the Board of Regents has requested that the Director, NLM, discuss with the Director, NIH, a more appropriate accounting procedure by means of which reasonable and proper contribution to the NIH Management Fund by the National Library of Medicine may be determined.

Sincerely,

A handwritten signature in dark ink, appearing to read "John P. McGovern".

John P. McGovern, M.D.  
Chairman  
Board of Regents  
National Library of Medicine

APPLICATIONS RECOMMENDED FOR APPROVAL BY COUNCIL  
(Arranged numerically by program)

COUNCIL DATE: MARCH 1974

INSTITUTE/DIVISION: NATIONAL LIBRARY OF MEDICINE

APPLICATION NUMBER

SHORT TITLE

AMOUNTS  
RECOMMENDED

2 R01 LM 00911-03

INFORMATION AND KNOWLEDGE IN BIOMEDICAL RESEARCH

03 51,093  
04 55,074  
05 34,396

2 R01 LM 01396-03S1

HISTORY OF HEALTH IN INDIAN AND OKLAHOMA TERRITORIES

03S1 9,125

2 R01 LM 01658-03

JACQUES TENON AND HOSPITAL REFORM IN 18TH C. FRANCE

03 19,166

1 R01 LM 01952-01A1 DUAL FS

PUBLICATION OF "THE HOSPITAL WARD BOOK"

01A1 10,000

1 R01 LM 02087-01A1

PARENT-CHILD RELATIONS IN 17TH-CENTURY ANGLO-AMERICA

01A1 30,986  
02 15,670

1 R01 LM 02268-01

AN AMERICAN DOCTOR'S LETTERS ON FRENCH SURGERY, 1832-5

01 17,065

1 R01 LM 02281-01

CRITICAL REVIEW OF NEURON BIOPHYSICS

01 15,100

APPLICATIONS RECOMMENDED FOR APPROVAL BY COUNCIL  
(Arranged numerically by program)

COUNCIL DATE: MARCH 1974

INSTITUTE/DIVISION: NATIONAL LIBRARY OF MEDICINE

APPLICATION NUMBER	SHORT TITLE	AMOUNTS RECOMMENDED
1 R01 LM 02285-01	AUTOMATIC THESAURUS GENERATION AND TESTING	01 33,690 02 34,804
1 R01 LM 02291-01	IMPROVE ACCESS TO HISTORICAL LIBRARY AND ARCHIVES	01 30,690 02 29,670
1 R01 LM 02295-01	CLINICAL LIBRARIANS IN PATIENT CARE/TEACHING SETTINGS	01 66,486 02 68,825
1 R01 LM 02296-01	SOCIAL GROUPS IN LITERATURE CLUSTERING AND GROWTH	01 26,690 02 28,640 03 5,910

APPLICATIONS RECOMMENDED FOR APPROVAL BY COUNCIL  
(Arranged numerically by program)

COUNCIL DATE: MARCH 1974

INSTITUTE/DIVISION: NATIONAL LIBRARY OF MEDICINE

APPLICATION NUMBER

SHORT TITLE

AMOUNTS  
RECOMMENDED

1 R01 HD LM 08649-01

01	25,002
02	36,028
03	10,775

INTERNATIONAL HISTORICAL VIEW OF MORTALITY DECLINE



APPLICATIONS RECOMMENDED FOR APPROVAL BY COUNCIL  
(Arranged numerically by program)

COUNCIL DATE: MARCH 1974

INSTITUTE/DIVISION: NATIONAL LIBRARY OF MEDICINE

APPLICATION NUMBER

SHORT TITLE

AMOUNTS  
RECOMMENDED

1 K10 LM 02323-01

01

52,056

CHORIOCARCINOMA AND RELATED TROPHOBLASTIC TUMORS

APPLICATIONS RECOMMENDED FOR APPROVAL BY COUNCIL  
 (Arranged numerically by program)

COUNCIL DATE: MARCH 1974

INSTITUTE/DIVISION: NATIONAL LIBRARY OF MEDICINE

APPLICATION NUMBER	SHORT TITLE	AMOUNTS RECOMMENDED
1 G08 LM 02115-01A1	MEDICAL LIBRARY RESOURCE PROJECT SUPPORT	01A1 72,000 02 75,400 03 79,350
1 G08 LM 02143-01A1	MEDICAL LIBRARY RESOURCE PROJECT SUPPORT	01A1 39,446 02 50,997 03 22,786
1 G08 LM 02238-01	MEDICAL LIBRARY RESOURCE PROJECT SUPPORT	01 38,624 02 40,446 03 44,471
1 G08 LM 02276-01	CATALOGUING RARE BOOKS ON DENTISTRY	01 10,000
1 G08 LM 02282-01	MEDICAL LIBRARY RESOURCE PROJECT SUPPORT	01 22,729
1 G08 LM 02317-01	SUBREGIONAL EXTENSION SERVICES -UTAH	01 39,344 02 41,149

EXPRESSION OF APPRECIATION

The Board of Regents and staff of the National Library of Medicine wish to express their warmest appreciation to Dr. and Mrs. J. Stanley Marshall for their gracious and delightful hospitality during the Board's March 1974 meeting in Tallahassee.

They add their sincere thanks to the able staff of Florida State University whose splendid cooperation at every level contributed so significantly to the meeting's success.

They are particularly indebted to Mr. Homer Fisher, Dr. Stephen McClelland, Dr. David White, Dr. Richard Boutwell, Mrs. Grace Douglas, and Mr. John Van Dyke, and to the Music School's accomplished faculty and students.

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE  
NATIONAL INSTITUTES OF HEALTH  
NATIONAL LIBRARY OF MEDICINE  
Bethesda, Maryland

A G E N D A

48th Meeting of the

BOARD OF REGENTS

Board Room  
National Library of Medicine

9:00 a.m., June 19-20, 1974

MEETING OPEN all day on June 19 and from 9:00 to 9:15 a.m. on June 20.

MEETING CLOSED from 9:15 a.m. to adjournment on June 20 for grant application review.

I. CALL TO ORDER AND INTRODUCTORY REMARKS John P. McGovern, M.D.

II. CONSIDERATION OF MINUTES OF LAST MEETING John P. McGovern, M.D.  
TAB I (Orange Book)

III. DATES OF FUTURE MEETINGS  
1974 and 1975 Calendars TAB II

Next Meeting: November 21-22, 1974 (Th-F)

Subsequent Meeting: March 20-21, 1975 (Th-F)

Selection of Meeting Dates: June 1975

(24-25)	(25-26)	(26-27)
(T-W)	(W-Th)	(Th-F)

Note: American Medical Association - Nov. 30-Dec. 4, 1974 - Portland, Ore.  
" " " - June 15-19, 1975 - Atlantic City, N.J.

IV. REMARKS BY THE DEPUTY ASSISTANT SECRETARY FOR HEALTH Theodore Cooper, M.D.

V. REMARKS BY THE DEPUTY DIRECTOR, NIH R. W. Lamont-Havers, M.D.

VI. REPORT OF THE DIRECTOR, NLM TAB III Martin M. Cummings, M.D.

COFFEE BREAK

VII. REGIONAL MEDICAL LIBRARY TAB IV Harold M. Schoolman, M.D.  
EVALUATION REPORT W. N. Hubbard, Jr., M.D.,  
Discussant

VIII. REVISED COPYRIGHT BILL-- TAB V Melvin S. Day  
IMPLICATIONS FOR NLM

LUNCHEON -- Catered in Conference Room B.

Formal photograph of Board of Regents

and

Formal photograph of former chairmen of Board of Regents

6/4/74

IX. THE NATIONAL LIBRARY OF MEDICINE: TAB VI  
PAST, PRESENT, AND FUTURE

- A. The "Unwritten History" Worth B. Daniels, M.D.
- B. A National Resource: National/  
Federal/Regional Relationships W. N. Hubbard, Jr., M.D.
- C. The User and a National Biomedical  
Communications Network
  - 1. Improving Medical Library Services  
through Extramural Support Programs John P. McGovern, M.D.
  - 2. The Use of Technology: Lister Hill  
National Center for Biomedical  
Communications Barnes Woodhall, M.D.
  - 3. Computerized Information Services:  
MEDLARS I → MEDLARS II (MEDLINE) Alfred R. Zipf
  - 4. Nonprint Media--the National  
Medical Audiovisual Center Stewart G. Wolf, Jr., M.D.
- D. Future Challenges--Users' Needs and  
Expectations
  - 1. Education Jack M. Layton, M.D.
  - 2. Improved Health Care William G. Anlyan, M.D.

COFFEE BREAK (as convenient)

PRESENTATION OF AWARDS

- Fifth Regents' Award for John P. McGovern, M.D.  
Scholarship or Technical Achievement
- Director's Award Martin M. Cummings, M.D.

RECESS

DINNER (Dutch treat) . . . . . Holiday Inn (Versailles I Room)  
 Cocktails (cash bar) . . 6:30 p.m. 8120 Wisconsin Avenue  
 Dinner . . . . . 7:30 p.m. Bethesda, Maryland

PRESENTATION OF CERTIFICATES Martin M. Cummings, M.D.  
TO REGENTS COMPLETING THEIR TERMS OF OFFICE

RECONVENE: 9:00 a.m., June 20, 1974.

X. REPORT OF ASSOCIATE DIRECTOR FOR EXTRAMURAL PROGRAMS Ernest M. Allen, Sc.D.

A. DRG Administrative Report TAB I (Gray Book)

B. Continuation of NLM Program in Israel with Support under U.S.-Israel Binational Science Foundation

C. Indirect Costs on Special Scientific Projects

MEETING CLOSED FOR GRANT APPLICATION REVIEW

XI. CONSIDERATION OF PENDING APPLICATIONS Roger W. Dahlen, Ph.D.

A. Research Grants TAB II Roger W. Dahlen, Ph.D.

B. Resource and Regional Grants TAB III Roger W. Dahlen, Ph.D.

C. Special Scientific Project TAB IV Roger W. Dahlen, Ph.D.

COFFEE BREAK

D. Publication Grants TAB V Jeanne L. Brand, Ph.D.

E. Construction Grants Arthur J. Broering

XII. LISTER HILL CENTER--REORGANIZATION Harold M. Schoolman, M.D. TAB VII (Orange Book)

XIII. COMPUTER-ASSISTED DIAGNOSIS AND TREATMENT Angelo M. May, M.D. J. William Cox, Capt., MC, USN, and Joseph F. Volker, D.D.S., Ph.D., Discussants

XIV. OTHER BUSINESS

XV. ADJOURNMENT

PRIVATE BOARD LUNCHEON -- Catered in Conference Room B.

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DEPARTMENT OF HEALTH, EDUCATION,  
AND WELFARE

NATIONAL INSTITUTES OF HEALTH  
NATIONAL LIBRARY OF MEDICINE  
BOARD OF REGENTS

MINUTES OF 48TH MEETING  
JUNE 19-20, 1974

BOARD ROOM  
NATIONAL LIBRARY OF MEDICINE  
BETHESDA, MARYLAND

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE  
PUBLIC HEALTH SERVICE  
THE BOARD OF REGENTS OF THE NATIONAL LIBRARY OF MEDICINE

1/ 2/  
Minutes of Meeting

June 19-20, 1974

The Board of Regents of the National Library of Medicine was convened for its forty-eighth meeting at 9:00 a.m. on Wednesday, June 19, 1974, in the Board Room of the National Library of Medicine, Bethesda, Maryland.

Dr. John P. McGovern, Professor and Chairman, Department of the History of Medicine, Graduate School of Biomedical Sciences, University of Texas, and Chairman of the Board of Regents, presided. In accordance with P.L. 92-463 and the Determination of the Director, NIH, dated May 6, 1974, the meeting on June 19, 1974, was open to the public from 9:00 a.m. to 5:00 p.m.; on June 20, 1974, the meeting was open to the public from 9:00 to 9:15 a.m. and closed from 9:15 a.m. to noon for the review, discussion, and evaluation of grant applications.

Board members present were:

Dr. Eloise E. Clark (June 19 only)  
Dr. Susan Y. Crawford  
Vice Adm. Donald L. Custis (June 19 only)  
Mrs. Bernice M. Hetzner  
Dr. W. N. Hubbard, Jr.  
Dr. J. Stanley Marshall  
Dr. Angelo M. May  
Dr. John P. McGovern  
Dr. Joseph F. Volker  
Dr. Ethel Weinberg

Alternates to Board members present were:

Dr. Faye G. Abdellah, representing Dr. S. Paul Ehrlich, Jr.  
Col. Mims C. Aultman, representing Lt. Gen. Richard R. Taylor  
Mr. John D. Lorenz, representing Dr. L. Quincy Mumford (June 19 only)  
Dr. Laurance V. Foye, Jr., representing Dr. John D. Chase (June 19 only)

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1/ For the record, it is noted that members absent themselves from the meeting when the Board is discussing applications from their respective institutions (interpreted to mean the entire system of which a member's institution is a part) or in which a conflict of interest might occur. Only when an application is under individual discussion will the Board member absent himself. This procedure does not apply to "en bloc" actions.

2/ The Board of Regents, when considering the extramural programs of NLM, sits as the National Medical Libraries Assistance Advisory Board, and concurrently discharges the responsibilities of both bodies.



National Library of Medicine Staff members attending this meeting included:

Dr. Martin M. Cummings, Director  
Mr. Melvin S. Day, Deputy Director  
Dr. Harold M. Schoolman, Assistant Deputy Director  
Dr. Ernest M. Allen, Associate Director for Extramural Programs  
Dr. Clifford L. Bachrach, Head, Medical Subject Headings Section, BSD, LO  
Dr. Jeanne L. Brand, Chief, International Programs Division, EP  
Dr. Charles F. Bridgman, Associate Director for Educational Resources  
Development  
Mr. Arthur J. Broering, Deputy Associate Director for Extramural Programs  
Mr. William H. Caldwell, Chief, Bibliographic Services Division, LO  
Miss Mary E. Corning, Assistant Director for International Programs  
Dr. George J. Cosmides, Deputy Associate Director, Specialized Information  
Services  
Dr. Roger W. Dahlen, Chief, Division of Biomedical Information Support, EP  
Mr. Joseph F. Gantner, Chief, Technical Services Division, LO  
Dr. Hilliard Jason, Consultant to Lister Hill National Center for  
Biomedical Communications  
Dr. Henry A. Kissman, Associate Director for Specialized Information  
Services  
Dr. Joseph Leiter, Associate Director for Library Operations  
Mrs. Nina W. Matheson, Chief, Office of Program Planning and Evaluation, EP  
Mr. Davis B. McCarn, Associate Director for Computer and Communications  
Systems  
Mr. Robert B. Mehnert, Chief, Office of Inquiries and Publications  
Management  
Dr. George E. Mitchell, Director, National Medical Audiovisual Center  
Mr. Kent A. Smith, Assistant Director for Administration  
Dr. James M. Stengle, Deputy Director for Medical Affairs, LHCNCB

Others present included:

Dr. Theodore Cooper, Deputy Assistant Secretary for Health, DHEW  
Dr. R. W. Lamont-Havers, Deputy Director, NIH  
Dr. William G. Anlyan, Vice President for Health Affairs, Duke University  
Dr. Worth B. Daniels, Clinical Professor of Medicine (Retired), School  
of Medicine, Georgetown University  
Mr. Clyde Hough, Office of Research Management, Public Health Service  
Dr. Jack M. Layton, Professor and Head, Department of Pathology,  
College of Medicine, University of Arizona  
Dr. William A. Lybrand, Acting Associate Administrator for Scientific  
Affairs, Health Resources Administration  
Mrs. Ileen E. Stewart, Executive Secretary, Biomedical Communications  
Study Section, DRG  
Mr. Samuel T. Waters, Acting Director, National Agricultural Library  
Dr. Norman Weissman, Acting Deputy Director, Bureau of Health Services  
Research, Health Resources Administration  
Dr. Stewart Wolf, Jr., Director, The Marine Biomedical Institute  
Dr. Barnes Woodhall, J. B. Duke Professor of Neurosurgery, Duke  
University Medical Center  
Mr. Alfred R. Zipf, Senior Administrative Officer, Bank of America;  
Consultant to National Library of Medicine

## I. OPENING REMARKS

Dr. John P. McGovern opened the meeting by welcoming Regents, alternates, and guests, noting the presence of Dr. Theodore Cooper, HEW Deputy Assistant Secretary for Health, and Dr. R. W. Lamont-Havers, Deputy Director of NIH. He also welcomed back former Board Chairmen Dr. Worth B. Daniels, Dr. W. N. Hubbard, Jr., Dr. Barnes Woodhall, Dr. Stewart G. Wolf, Jr., Mr. Alfred R. Zips, Dr. William G. Anlyan, and Dr. Jack M. Layton. The Chairman noted the presence of new NLM staff members Dr. James M. Stengle, Lister Hill Center, and Dr. George J. Cosmides, Specialized Information Services, and he announced that Mr. William H. Caldwell has been appointed Chief of the Bibliographic Services Division and Dr. Clifford A. Bachrach Head of the Medical Subject Headings Section.

## II. CONSIDERATION OF MINUTES OF PREVIOUS MEETING

The Board recommended approval of the minutes of the meeting of March 21-22, 1974, without change.

## III. DATES FOR FUTURE BOARD MEETINGS

The Board reconfirmed the dates of November 21-22, 1974, for the next meeting and confirmed the dates of March 20-21, 1975, for the subsequent meeting. June 26-27, 1975, were approved tentatively for the following meeting. (Later, by telephone, general agreement was obtained for the substitution of December 5-6, 1974, for November 21-22, 1974, and the substitution of March 13-14, 1975, for March 20-21, 1975.)

## IV. REMARKS BY THE DEPUTY ASSISTANT SECRETARY FOR HEALTH

Dr. Theodore Cooper discussed four specific issues currently of concern to the Assistant Secretary for Health and of possible interest to the Board members:

A. National Commission for Biomedical Research. There have been suggestions from various quarters that there is a need for a reassessment of the direction biomedical research is taking. Concerns have included human experimentation, commitment of the Federal Government to biomedical research, Office of Management and Budget (OMB) questions concerning peer review and training, program balance and setting research priorities, increasing costs of research, targeted research, grant-versus-contract mechanisms, and the supply of health manpower. Because of these widespread concerns, Secretary Weinberger has recommended to the President that a National Commission for Biomedical Research be established to review these and other policy questions. A House and Senate Conference Report on proposed health research legislation will recommend a study panel to review the spectrum of biomedical research and report in 18 months. Although this is not precisely what the Secretary had proposed, such a

panel (or commission) could possibly have the same effect. The commission, said Dr. Cooper, should focus on the national needs of biomedical research, appropriate Federal and non-Federal roles, and financing biomedical research. Dr. Cooper was optimistic about prospects for passage of the health research legislation and the establishment of the panel. He emphasized that suggestions from the Regents on the subject, including nominations of possible members of such a commission, would be welcomed by the Secretary.

B. Progress on National Health Strategy. When Assistant Secretary Edwards reorganized HEW's health activities into six agencies last year, he announced that a national health strategy was needed. Previously, planning for health programs was the responsibility of a planning office, not the responsibility of health experts. Three legitimate roles have now been identified for the Federal Government in the health area: research support, protection of the public, and improved access to quality health care. There is considerable overlap in such programs within the Department, however. Information is being collected on which HEW health agencies have responsibilities for these roles and what resources they need to carry out their responsibilities. The public must be informed of both short-term and long-term goals in the health area, he said. Five general headings have been agreed on to put cross-agency goals into perspective: prevention, health insurance, quality assurance, improved health accounting system, and research and dissemination of research results. No one health agency is completely responsible for any single area--the headings cut across agency lines. Such a health policy framework of interlocking goals, responsibilities, and needs has been drafted and will be available later this summer.

C. Balance of Research Programs. Dr. Cooper acknowledged a concern by some in the health field that there is a lack of balance in NIH programs --that heart and cancer research receive too much money at the expense of other programs. Work is now underway to address this problem and reset priorities, keeping in mind that: (1) there is a public, Presidential, and congressional commitment to heart and cancer research; (2) new activities are being mandated in aging, sudden infant death, diabetes, and other fields that NIH will have to respond to; and (3) there are other important programs which need increases in funds. The Assistant Secretary's office is willing to listen to agency justifications for increases for programs falling in this last category--NIH's priorities and value judgments will be respected.

D. Department's Commitment to NLM. The Office of the Assistant Secretary is interested in the Library's programs and aware of their importance to other ongoing health activities in the Department. The Assistant Secretary is committed to the Library's vigorous program of knowledge dissemination.

In response to a query from the Chairman, Dr. Cooper said that the Assistant Secretary's office would support the construction of the Lister Hill Center facility, providing it is high on NIH's priority list. The overall climate for new Federal construction, however, is not encouraging. Responding to another question, Dr. Cooper said that agency frustrations with OMB could

be largely avoided by better preparation of positions. Strong cases, argued with persistence and patience, will frequently prevail at OMB. OMB will, however, make what appear to be arbitrary decisions when presented with "garbage." Dr. Layton suggested that the Administration might wish to reexamine some of the formal recommendations of the Board of Regents to NIH and the Department concerning problems associated with the diffusion of biomedical communications responsibilities in the Federal establishment.

#### V. REMARKS BY THE DEPUTY DIRECTOR, NIH

Dr. R. W. Lamont-Havers noted that NIH and the other health agencies are faced with new programs in aging, sudden infant death syndrome, diabetes research and training, and arthritis. These will undoubtedly give rise to new pressures for additional separate institutes at NIH. He felt that there was increased congressional understanding and support for biomedical research and that there would be modest, but real, increases in budgets beginning in 1975. The 1975 budget will also contain money to continue NIH training programs.

The protection of human subjects in biomedical research is an area of considerable confusion at the present time. Guidelines for NIH's present policy were published in the Federal Register--essentially they are similar to Departmental policies announced in 1971 and NIH/PHS policies going back to 1966. NIH has been attempting to modify the policies regarding experimentation on fetuses, children, prisoners, and the mentally handicapped. Proposed regulations will be published before July 30, 1974, for all except children. Yet to be worked out is how these regulations (or any Federal legislation on the subject of human experimentation) would apply to research supported by the United States in foreign countries.

#### VII. REPORT OF THE DIRECTOR, NLM

Dr. Cummings introduced Mr. Joseph F. Gantner, new Chief of the Technical Services Division, and mentioned that Mr. Melvin S. Day, Deputy Director, was presently conducting a demonstration of MEDLINE for Senator Pell of Rhode Island. Using charts, Dr. Cummings showed that NLM's appropriation for FY 1973 totalled \$26.3 million and that the FY 1974 total obligation level was \$29.7 million (which included \$3.4 million of FY 1973 impounded funds released in January 1974). The FY 1975 President's Budget requests \$27.7 million for NLM. This is \$1.4 over the FY 1973 budget figure but is \$2 million less than the total available for obligation in FY 1974. Appropriation hearings in both the House and Senate were marked by intense interest in the construction of the Lister Hill Center building. Despite the construction constraints mentioned by Dr. Cooper, the Director feels that Congress is determined to see the entire program it designed in 1967 carried out. Tentative architectural and engineering drawings have been

completed and, if money for construction were available, invitations for construction bids could be issued next January. In addition to the lack of funds for a building, the congressional committees also indicated concern on the lack of sufficient personnel and the reduced funding level for NLM's extramural programs.

Dr. Cummings reported that the Library has succeeded in having all 20 ceiling positions restored that were taken away early in FY 1974. There are problems, however, in the area of compensating employees: the low \$25-per-diem allowance for traveling expenses has placed an unreasonable burden on those staff members who travel; and the fact that there have been no pay increases for senior staff since 1968 (there is a \$36,000-per-year ceiling) makes recruiting for such positions as Director of the Lister Hill Center very difficult. Also in the personnel area, the Director reported that Mr. Arthur J. Broering, Deputy Associate Director for Extramural Programs, and Mr. Kent A. Smith, Assistant Director for Administration, have received DHEW Superior Service Awards. Mrs. Rita Orr of the Library's Personnel Office received an award in recognition of her outstanding contributions to the NIH EEO program.

The Library's extramural authorities are due to expire June 30, 1974. Renewing authorization is contained in legislation passed by both Houses of Congress. A House and Senate conference committee has ironed out differences between the two versions, agreeing on an extension of three years for the Medical Library Assistance Act. Floor action by both Houses on the compromise legislation is now needed. Unfortunately, the NLM legislation is tied to two other, more controversial bills in the health area. Dr. Cummings feels that a continuing resolution will allow the funding of the grant programs if new legislation is not passed.

The Director reported that MEDLARS II is progressing well and that many of its modules are already installed in-house and running. The entire MEDLARS II system has not yet been accepted from the contractor, System Development Corporation, but the full, integrated system will be running before the end of the year. The Library has renegotiated the agreements with its foreign partners under which they provide indexing input in return for access to MEDLARS. There are now three basic options under MEDLARS II: tapes, tapes and software package, and on-line access, or a combination of options. Renegotiation of agreements has resulted in the following:

Tapes: Germany, Japan  
Tapes and Software: Australia, Sweden  
On-Line Access: France, Canada, World Health Organization  
Tapes and On-Line Access: Great Britain

These quid pro quo bilateral arrangements have been eminently successful and are considered by other organizations as a model activity. The dollar values of these arrangements are: \$50,000 indexing effort per year for MEDLARS tapes; \$50,000 for on-line access; and \$100,000 for the first year for a freestanding MEDLARS II package--tapes and software--(plus \$60,000 per year thereafter). The fact that all the countries chose to retain a

MEDLARS capability is an endorsement of the utility of the system. The concept and the actual arrangements had been approved by the Board. However, a question has now been raised by auditors whether NLM can properly engage in such arrangements. This may raise a problem for future Board consideration.

Dr. Cummings reported that plans for the joint publication by NLM and the Josiah Macy, Jr., Foundation of a bicentennial publication on medicine are well underway. A distinguished group of essayists will write on various medical specialties for the volume. A two-day conference, hosted by the Library, is tentatively scheduled for May 1976 to discuss these essays. In addition, the Library will sponsor a set of exhibits on contributions of American medicine. The Director solicited the cooperation of Board members who may be called on to participate in NLM's bicentennial observance.

The Director also reported on progress with the Toxicology Information Program (TIP) and the National Medical Audiovisual Center (NMAC). TIP's TOXLINE is now in-house (after being operated by a contractor for several years). Because charges have subsequently been reduced from \$40 to \$15 per connect-hour, the number of users has risen. A chemical dictionary data base, containing some 60,000 chemical files, has been integrated into the system and renamed CHEMLINE. At NMAC, new products for broadly defined health education and medical practitioner communities are being generated in cooperation with professional societies and academic institutions. The peer review and evaluation mechanism for these materials is working well.

Dr. Cummings closed his presentation by noting that the case of Williams & Wilkins is still with us. After eight years of litigation, the case has finally reached the Supreme Court. The Director said that he expected the decision to be a close one (as it was in the Court of Claims) and that it would probably take some six to nine months to be reached. NLM will examine other possible systems for the sharing of library materials. The legislation now before Congress to revise the present copyright laws will, if passed, have a profound effect not only on libraries but on all educators and scientists. NLM is following this legislation with keen interest. In response to a question, Dr. Cummings noted that several organizations have offered to submit amicus curiae briefs in the case. For Williams & Wilkins this means largely profit-making publishers and such organizations as the American Chemical Society. NLM's support comes mostly from other libraries. Dr. Abdallah remarked that the American Nurses Association and the National League for Nursing are supportive of NLM's position and may file amicus curiae briefs through the Civil Division of the Department of Justice. Dr. Cummings noted that the AMA has written several editorials supporting the Library in the suit. Despite these and other discussions appearing in such journals as Science and the New England Journal of Medicine, the Director feels that most scientific and health organizations do not realize what is at stake.

## VII. COPYRIGHT LEGISLATION

NLM Deputy Director Melvin S. Day reviewed the status of proposed copyright legislation in the Congress. The present law dates back to 1909. There is

now a bill in the Senate, S.1361, "A Bill for the General Revision of the Copyright Law," introduced in March 1973 by Senator McClellan, Chairman of the Judiciary Committee's Subcommittee on Patents, Trademarks, and Copyright. In June 1974, the Judiciary Committee reported out the bill to the full Senate. Mr. Day outlined briefly the bill's chief features as they would pertain to NLM's operation, and expressed particular concern over Section 108(g)(2), which says that "systematic reproduction or distribution" by a library is prohibited. It appears that the effect would be to make NLM's current interlibrary loan practices an infringement of copyright.

Several organizations, such as the Medical Library Association, American Library Association, Special Libraries Association, the National Commission on Libraries and Information Science, and the National Education Association have contacted the Senate Subcommittee in an effort to delete Section 108(g)(2) or, failing that, to change its language. These efforts have been unsuccessful. A debate over Section 114, concerning rights in sound recordings, may derail the proposed legislation. Pressure from the radio and television community may succeed in getting the bill bottled up in the full committee. H.R.14922, similar to the Senate bill, has been introduced into the House of Representatives. Mr. Day noted that the Senate bill, if passed, could influence the decision of the Supreme Court in the Williams & Wilkins case.

Dr. Layton remarked that the American Society of Clinical Pathologists has retained copyright of the two journals it sponsors and that issues carry a statement permitting libraries to make single photocopies of articles. Dr. Cummings said that if enough professional societies took this stand, the problem would be solved. Unfortunately, he added, the trend is in the other direction. Whereas in 1960 about 70 percent of all medical professional societies retained copyright to the journals they published, by 1970 this figure had gone down to 30 percent with 70 percent being the copyright property of the commercial publishers, which in most cases are solely the printers and sales outlets for these journals.

#### VIII. REGIONAL MEDICAL LIBRARY EVALUATION REPORT

Dr. Harold M. Schoolman, NLM Assistant Deputy Director, discussed the work of the last 18 months of a group of consultants to evaluate the Regional Medical Library (RML) Program. All eleven RMLs were visited in the evaluation process. The last few years have seen an attitudinal change--RMLs are now engaged in coordinated action. This was most apparent at the last Medical Library Association meeting in San Antonio. Among the accomplishments of the last three years are the following: First, the successful conversion of the funding mechanism from grant to contract was accomplished, raising the percent of money going to support direct service from 35 to 65. The contracts are relatively easy to negotiate and manage and most RML directors now prefer them to grants. Second, the RML network has accepted responsibility for approximately 6,000 serial titles, developed locator tools for them,

worked out a traffic flow pattern for interlibrary loan, and doubled since 1970 (to 600,000) the number of requests for documents handled each year through the network, with a 90 percent fulfillment rate. This is an efficient system and a remarkable accomplishment on the part of the RMLs.

Several issues and problems were brought to light by the evaluation. The RML Program is an important part, but by no means the totality, of the Biomedical Communications Network (BCN) the Library is embarked in building. Although the term Biomedical Communications Network defies precise definition, there is no doubt that the RML Program constitutes an important component of such a network. Can the full BCN be developed as an expansion of this important beginning? The evaluation consultants expressed serious reservations about this thesis. They advised NLM to seek additional means to develop the BCN, utilizing the RML network when possible and proper. Another problem is how to reach and inform university administrators about the outreach activities of the RMLs, since the commitment of a regional library to serve many communities may go considerably further than that of the parent institution. Finally, there was a concern of the evaluation group about the use of NLM extramural funds (except research grants) for projects impinging on the RML network. There needs to be a model for planning in the regions so that resource and improvement projects proposed for grant funding fit into an overall network scheme.

Dr. Schoolman concluded by saying that the RML directors have agreed to establish several task forces (to be comprised of RML and NLM staff) in the areas of (1) cooperative acquisition, cataloging, and storage; (2) audio-visual and computer-assisted instruction networking; (3) network interfaces with State and public library systems; (4) MEDLINE coordination; (5) what reference services should be available on a regional basis; and (6) the role of continuing education in extension services. Instead of site visits next year, the evaluation group will meet to review the position papers developed by the task forces.

Dr. Hubbard lauded the choice of the RML Program in selecting interlibrary loan as the foundation for improved services. It will be necessary (and difficult) to replicate this success in other areas. One of the principal difficulties will be with the franchise problem of State systems and some private libraries that restrict their clientele. From an administrative point of view, it will now be necessary to have a more precise statement of objectives which can be reduced to operating proposals with goals and evaluation procedures. A plan to reach these goals and objectives should come from the people who are going to do the work rather than from NLM.

#### IX. NLM: PAST, PRESENT, AND FUTURE

The afternoon of the first day was devoted to a special session of the Board of Regents to examine the National Library of Medicine: Past, Present, and Future. All Regents' chairmen for the past ten years, with the



exception of Norman Q. Brill, M.D., and Robert H. Ebert, M.D., were in attendance. Also present to make brief remarks about NLM's "unwritten history" was Worth B. Daniels, M.D., first chairman of the Board of Regents. In introducing Dr. Daniels, Dr. McGovern noted that he was chairman twice, in 1957-58 and again in 1961-62. During Dr. Daniels' tenure as chairman, the functions of the Library were reviewed and redefined, a site selected for a new building, construction funds sought, and the new building dedicated and occupied, Dr. McGovern said. "The existence of this very building is due to Dr. Daniels and his untiring efforts."

In his brief remarks about NLM's "unwritten history," the first chairman discussed the pressures to locate the new NLM structure in Chicago. Senators Lister Hill and John F. Kennedy opposed this. At the 1959 groundbreaking ceremony for the building ("with Lister Hill and Mike DeBakey at the shovels"), Senator Hill praised Worth Daniels so extravagantly that the latter declined to help with the digging, saying: "Senator, I'd be afraid to come down into that hole after your 'obituary' of me--you might bury me!" Dr. Daniels said that the subsequent progress of NLM has more than justified the efforts of the original group who labored so hard to bring it into being.

Dr. McGovern set the stage for the next presentations with a statement by Dr. Luther Terry, former Surgeon General, at the Board of Regents' meeting in December 1963. Dr. Terry stated that although the National Library of Medicine had made much progress, its role and responsibility in the growing problem of medical communication and dissemination of scientific information had not yet been exactly defined. Dr. Terry identified as particular issues the determination of how MEDLARS will function to meet national needs; the requirement for legislative authority to engage in extensive extramural programs; the lack of funds; and the examination of the role of the Library, not only within the Public Health Service but in its Federal and non-Federal relationships. These, then, said Dr. McGovern, were the problems facing the new Director, Dr. Cummings, and the Board of Regents. The challenge was to develop NLM as a dynamic national and international resource responsive to the needs of the professional health community. Dr. Cummings accepted this challenge by responding to Dr. Terry that "the Library has an unmatched opportunity to serve national and international needs in the health communications area."

During the ten-year period since that time, Dr. McGovern said, MEDLARS I became operational and was evaluated; the Public Health Service Audiovisual Center was transferred to the Library and became the National Medical Audiovisual Center; the Lister Hill National Center for Biomedical Communications was formally established; the toxicology program was initiated as a result of a delegation of Presidential authority; and extensive on-line information retrieval systems MEDLINE and TOXLINE became operative.

Stewart G. Wolf, Jr., M.D., co-chairman with Dr. McGovern for the special afternoon session, described the outline for the following presentations as being divided into three major sections: NLM and its internal and external relationships, the user and a national Biomedical Communications Network, and future challenges. Dr. Wolf introduced the following speakers in turn:

#### A National Resource: National/Federal/Regional Relationships

W. N. Hubbard, Jr., M.D., President of The Upjohn Company and Board chairman from 1965-67, noted NLM's remarkable growth in the last ten years despite retrenchments in programs in other health-related areas. One reason for the Library's success, he said, was the fact that so many of its programs were obviously in the public interest and that they combined immediate benefit with great long-range potential. A report was issued in 1965 by NLM and the Board that clearly set forth the relationship of the Library to other components of the national scientific and technical information system. Many of today's NLM programs are directly descended from proposals in this report.

Dr. Hubbard described efforts in 1964 to establish a National Library of Science, which would have ended the separate identity of NLM and made it a part of a larger whole. One of the first tasks when Dr. Hubbard came to the Board (1964) was to discourage this effort. The proposal reflected a widespread doubt that libraries, because they were so wedded to anachronistic practices, would be good bases on which to construct modern communications systems. The Board also had to deal with the Herner Report, which recommended that the Library concern itself primarily with the business of books and journals and that a modern biomedical communications system be built on another base. Recent Boards have had no monopoly on serious problems, Dr. Hubbard reminded. Early Boards had to deal with challenges that questioned the very competence of NLM for an expanded role in biomedical communications. This role of NLM has now been clearly established to include not only regional and national responsibilities, but also international cooperative relationships which are of direct benefit to the U.S. and the national health effort.

#### The Use of Technology: Lister Hill National Center for Biomedical Communications

Barnes Woodhall, M.D., J. B. Duke Professor of Neurosurgery, Duke University Medical Center, Board chairman in 1967-68, discussed the evolution of the Lister Hill Center and the need of professionals for "instant information," as he called it. The problems resulting from the lack of communication between the basic and clinical scientists are becoming particularly acute. Dr. Woodhall related a series of experiences when there was a great need for "early warning signals." One such experience was in the area of psychosurgery. In April 1972, Dr. Woodhall was coordinating chairman of a group to review the information available on the subject. Forty-eight clinical and basic scientists studied the issues involved for six months. A second study, placing more emphasis on clinical problems of psychosurgery and the right of consent, followed shortly thereafter. The findings of both studies have been published in reports. Dr. Woodhall, in his extensive recent travels to 18 medical centers, could find few psychosurgeons who had read either report. It is just this kind of problem that the Lister Hill Center should address itself to in applying new communication technology.

## Computerized Information Services: MEDLARS I — MEDLARS II (MEDLINE)

Alfred R. Zipf, Senior Administrative Officer, Bank of America, and chairman of the Board of Regents in 1969-70, presented to the Board a paper on the evolution of MEDLARS I and MEDLARS II. The development in the 1960s of high-speed file storage and telecommunications gave a boost to the Library in collecting, indexing, and distributing biomedical information. The Library pioneered in the technique of photocomposition (1964)--a landmark development that is still a cornerstone of our publication services. The search capability of MEDLARS I, impressive in 1966, has now been relegated to history by MEDLINE. The RISC project (Remote Information Systems Center) in 1967 was the Library's first experience in resource-sharing, using advanced computer and telecommunications technology, and the forerunner of MEDLINE in 1971. MEDLINE is now providing over 250,000 searches per year to the 250 institutions with access to the system. It may be possible to extend these bibliographic retrieval services to tell the user not only what is available, but where he can find it. The request for a publication would automatically be directed to the nearest library holding the requested item.

The Library is already pushing the limits of the present system, Mr. Zipf said. Growth of the data bases, the need to put abstracts on-line, and the desirability of free vocabulary searching, will all require greater storage capacity and speed of access. Cost-effective hardware and software have not yet been developed for free vocabulary searching, for example, although several recent commercial developments (such as the newest airline reservation systems) make the future bright. Mr. Zipf made an educated guess that by the late 1970s the technology will have developed to allow such advances. New networks, such as those now being developed by the Lister Hill Center, will allow greater sharing of information among the Regional Medical Libraries and the foreign MEDLARS centers. For example, indexing input now sent by mail could be delivered almost immediately by a telecommunications network.

What must we do now to realize these goals? We must continue to seek increased appropriations for the Library--the cost of acquiring knowledge is rising faster than the inflation rate. To justify greater funding, the Library must demonstrate a good track record of careful project selection, control, and follow-through. The recruitment, development, and constant upgrading of a highly qualified technical staff is also of great importance. A long-range plan, fully supported on the policy level by the Board of Regents, is necessary for the operation and growth of our large-scale services. The Board must continue to assist the Director in maintaining the Library's leadership position in the area of biomedical information transfer.

## Nonprint Media--the National Medical Audiovisual Center

Stewart G. Wolf, Jr., M.D., Director of the Marine Biomedical Institute, and chairman in 1968-69, spoke to the Regents about the change in the National Medical Audiovisual Center's role since it became a part of NLM

in 1967. The Center was formerly a "little Hollywood"--concerned with producing elaborate teaching and promotional motion pictures. When NMAC became part of the Library, a reevaluation was made of both the Center's mission and that of the Library as well. What evolved was an emphasis away from the production of motion pictures to one of applying the talents and facilities of NMAC to provide technical instruction, critical assistance, and coordination of others engaged in producing teaching instruments. The program of cooperation with the Association of American Medical Colleges was a milestone in NMAC's development--for now requests for grant and contract support could be reviewed by panels of experts in communications technology and medical education. NMAC's current activities are now consonant with the role of the Library in organizing and disseminating information and supporting scholarship.

John P. McGovern, M.D., Professor and Chairman of the Department of the History of Medicine of the University of Texas Graduate School of Biomedical Science (Houston), described the development of the Library's extramural programs to improve medical library services. In the early 1960s, there were a number of warnings from those in the medical community about the poor state of the Nation's medical libraries. The development of legislation to correct this was one of Dr. Cummings' first challenges as NLM Director, which he successfully met in record time. The Medical Library Assistance Act, signed into law in 1965, authorized the following programs: improvement of library resources, construction of facilities, training in medical library sciences, biomedical publications, research and development in medical library science, establishment of Regional Medical Libraries, and special scientific projects. NLM did not implement a provision of the Act calling for the establishment of regional branches of NLM.

By June 1970, \$40.8 million (604 projects) had been distributed in grant support to medical libraries under these various programs. This was considerably less than the \$105 million authorized in the legislation, however. Nearly \$35 million in construction grants was approved but unfunded. Eleven construction grants were actually awarded for a total of \$11.25 million. The largest of the grant categories is that for resource grants. When the Act was extended, two kinds of resource awards were created--the "improvement" grant for developing basic library resources, especially in community hospitals, and the "project" grant for improving services that are related to Regional Medical Library planning. Over the last decade, 43 percent of the NLM budget has been made available to the medical library community through the extramural programs. The total is \$63.3 million for 1,126 projects. Dr. McGovern said that although the Nation's medical library services are much improved as a result of the Act, there are new challenges which the Act must be modified to meet. Some of these are in the areas of continuing education, the role of the community hospital, library management, and Ph.D.-level training.

Dr. Hubbard, also commenting on NLM's extramural programs, added that it is necessary to keep in mind the historical context of the Act. It was passed in the days of the "Great Society" programs, with the strong backing of

Wilbur Cohen and Lister Hill. Most important of all, however, the success of the Medical Library Assistance Act was due to the clear perception of the genuine need for such a program and the readiness of the Library to administer the program once it was enacted.

Future Challenges--User Needs and Expectations in Education and Improved Health Care

Jack M. Layton, M.D., Professor and Head of the Department of Pathology, University of Arizona, chairman in 1972-73, talked about "User Needs and Expectations" in health. Predicting future user needs by predicting future events is futile, Dr. Layton said. We must, rather, predict user needs by assessing the future impact of events that have already taken place. Dr. Layton suggested that the discussions of user needs and expectations contained in the two reports prepared by the AAMC and NLM--"Educational Technology for Medicine: Roles for the Lister Hill Center" and "Educational Technology for Medicine: Academic Institutions and Program Management"--should be required reading for all Regents.

New instructional technology--the "fourth revolution"--gives us an opportunity to make the future happen. There is a trend now for individualization of instruction which the Library (especially through the Lister Hill Center and the National Medical Audiovisual Center) can assist by further development of communications networks. The Library should be assisting instructors to adapt to the new technology. With the recent emphasis on recertification, a whole new community now exists that must be taught to take advantage of the technology and the new information retrieval systems. Professional societies, particularly those devoted to scientific education, are another audience toward which the Library should direct its programs. They represent a useful point of interaction between the Library and users of biomedical information.

William G. Anlyan, M.D., Vice President for Health Affairs, Duke University, chairman in 1971-72, spoke to the Regents about the need for information services in the delivery of health care. The practicing health professional, said Dr. Anlyan, needs on-line, reliable information at the bedside or in the clinic 24 hours a day. This is a quantum jump from the old "Joe Jones" system, where the practicing physician takes a number of years to accumulate cases, presents a paper on the subject at a professional meeting, and, finally, has it published (whereupon the fruit of his effort sits unread in that stack of journals to be found in the office of every practitioner).

Dr. Anlyan described an on-line information system developed by cardiologists at Duke that can be accessed at the bedside or in the laboratory. Data in the system is from 3,000 patients and includes all pertinent elements of the physical examination, laboratory data, electrocardiograms, etc. At any moment the physician can query this data base to aid in decision-making at the bedside. Dr. Anlyan had hoped to bring a live demonstration of the system to the Regents via NLM TV monitors, but the equipment is not compatible with that at Duke.

There are several problems associated with such systems. One, obviously, is the lack of compatibility of hardware at different institutions. Another is that of funding such systems on an ongoing basis. Third-party payers may be willing to allow the costs of these systems when used for patient care. A third problem is that of pooling data from any institutions and ensuring that it is accurate. The last problem mentioned by Dr. Anlyan is that scientists and practitioners would not get credit for building such data bases--unlike published papers, they are anonymous in nature. Dr. Anlyan suggested that NLM has a role in evaluating different models of operating information systems (such as the one for cardiology at Duke) with an eye to their more widespread application.

In summarizing the afternoon's discussions, Dr. McGovern said that the past ten years of accomplishments are a tribute to the effective leadership and foresight of Dr. Cummings as Director of the Library.

#### X. HEALTH SERVICES ADMINISTRATION ACTIVITIES IN INFORMATION SYSTEMS

As a preface to Dr. Angelo M. May's presentation on computer-assisted diagnosis and treatment, the Board invited the Health Resources Administration (HRA) to send representatives to describe the information systems supported by that agency. Attending the meeting for this purpose were Dr. William A. Lybrand, HRA Acting Associate Administrator for Scientific Affairs, and Dr. Norman Weissman, Acting Deputy Director of the Division of Health Care Information Systems and Technology, Bureau of Health Services Research, HRA. Dr. Weissman said that his division, with a budget of \$10 million, has some 50 active grant- and contract-supported projects centered mainly in three areas of interest: logistics, hospital information systems, and medical information systems.

Logistics. The aim of this program is to determine the proper mixes of manpower and technology to provide economical, high-quality services to the greatest number of people. Examples in this category are projects for automated support of the physician's decision-making process, such as computer analysis of EKG (called EKAN), and CAPO (Computer-Assisted Physician's Office) for automated billing and medical history services.

Hospital Information Systems. At the El Camino Hospital in Mountainview, California, HRA is supporting a project to provide completely automated services. A computer terminal is located at each nurse's desk. The computer is used for billing, record keeping, transmission of information to the laboratories, and procedures for preparing patients for surgery; the nurse accesses these procedures via the terminal. In another project, at Stanford University Hospital, HRA has funded a computerized system that automatically screens all drug orders to the hospital pharmacy (900 per day) for potentially hazardous drug-drug interactions and alerts the physician when such combinations are ordered. Some 15 alerts a day are issued, but in at least 25 percent of these cases the physician is already aware of the potential danger. The biggest problem in these systems, as in others, is the interface between the physician and the computer terminal. Some physicians shun the terminals as demeaning.

Medical Information Systems. The most exciting project in this area, one that is still some ten years away from more general use, is a problem-oriented medical information system being developed at the University of Vermont Medical Center. This system actually provides guidance to the physician in handling a case. After "working-up" each patient, including an automated history-taking, the information is input into the computer via a terminal. Based on this information, the computer recommends specific therapies and warns against possible drug-drug interactions. There is sometimes a certain antagonism of the physician toward the computer, especially when the machine's recommendations are different from that of physician.

Dr. McGovern asked whether there were any discernible "qualities" in physicians that affected their acceptance or rejection of the computer's assistance. Dr. Weissman replied that data on this very question will be collected by December 1974. It is his feeling, however, that it is definitely specialty-related. Surgeons, for example, seem much more willing to accept computerized assistance. In response to a suggestion by Dr. Weinberg, Dr. Weissman will send to the Board of Regents more detailed information on both the scope of their overall program and the individual projects.

#### XI. COMPUTER-ASSISTED DIAGNOSIS AND TREATMENT

Board member Angelo M. May, M.D., presented to the Regents a proposal for a "computer-assisted current medical procedure information" system called EPITOME. The system, which might be developed by the Lister Hill Center, would "make available current and succinct summaries on the ever-changing and fast-developing procedures, treatments, drug limitations and other facets of care pertinent to conscientious medical practice." It might be of particular value to rural physicians and others in private practice without convenient access to medical libraries or other information resources.

Information contained in the system would be prepared by committees of authorities in medical specialties. The EPITOMES would each be a succinct protocol for the treatment of a defined problem, together with alternative treatments, drug contraindications, risks of anesthesia, etc. Each would be short--two pages or less--and have appended a short bibliography of current articles on the subject. The EPITOMES would be entered into a computer data bank and retrieved by a physician using a terminal in his office. Each EPITOME would be accessed under a small number of headings: for example, PAROTID TUMOR, TUMOR PAROTID, SWELLING/PAROTID, PAROTID LUMP, SALIVARY TUMOR, CANCER/PAROTID.

Commenting on Dr. May's proposal, Dr. Hubbard said that the overriding risk in such a system is conformity. Some degree of conformity, of course, is necessary and desirable. The increase in malpractice proceedings and the desire of third-party payers to control expenditures are both forces that promote conformity in medical practice. To the extent that unacceptable or reprehensible practice is discouraged by these pressures, they are for the

good. When they discourage variety and flexibility in medical practice, however, these forces inhibit medical progress. Dr. Hubbard is concerned that our knowledge has not reached the point where the "therapy of choice" for all medical situations can be determined and entered into a nationwide communications system.

In response to a suggestion made by Dr. Volker and agreed to by Dr. May, Dr. Cummings offered to help plan a seminar on the subject, perhaps to be held in conjunction with the next Board meeting. Other groups involved, such as Health Resources Administration, Health Services Administration, and Professional Standards Review Organization, would be invited to participate. Dr. Cummings said that the Library's involvement should center on those aspects of the problem that deal with communications technology.

#### XII. REORGANIZATION OF THE LISTER HILL CENTER

Dr. Harold M. Schoolman reviewed for the Regents the new organizational structure of the Lister Hill Center. Ten professional positions have been requested to augment the current LHC staff of 16. A new LHC director is now being recruited. In addition to Dr. Stengle, newly appointed Deputy Director for Medical Affairs, a second deputy director--for operations--is being recruited to coordinate the work of the three new branches that now comprise the Center. These three branches are the Communications Engineering Branch, the Computer Technology Branch, and the Educational Technology Branch. Chiefs of the last two named branches are now being recruited; Mr. B. Earl Henderson is Chief of the Communications Engineering Branch. Dr. Schoolman was optimistic that these positions would be filled in the next three months.

#### XIII. AWARDS

Dr. McGovern presented the 1974 Regents' Award for Scholarship or Technical Achievement to Dr. Sharon Valley of the Toxicology Information Program. Dr. Valley was cited for her "initiative and creativity in developing unique toxicology information products and services." Following this award, Dr. Cummings presented Director's Awards to three NLM staff members: Dr. Henry M. Kissman, for his direction of the Toxicology Information Program; Dr. Norman P. Shumway, the retiring Chief of the Medical Subject Headings Section, for his work in developing and implementing MEDLARS vocabulary design concepts; and Miss Mary E. Corning, Assistant Director for International Programs, for her effective leadership in developing cordial and productive relations between NLM and similar institutions abroad.

#### XIV. REPORT OF THE ASSOCIATE DIRECTOR FOR EXTRAMURAL PROGRAMS

Dr. Ernest M. Allen, Associate Director for Extramural Programs, welcomed Mrs. Ileen E. Stewart, Executive Secretary of the Biomedical Communications Study Section. To Mr. Ray E. Brown, who is retiring as a program officer



in EP's International Programs Division, Dr. Allen expressed good wishes and the Library's appreciation for excellent and devoted service. Mr. Brown's successor, Mr. Randall Worthington, who comes to NLM from the National Science Foundation, was introduced to the Regents, as was Mr. Wayne A. Barlin, who is on temporary EP duty.

#### DRG Administrative Report

Certain items included in the Division of Research Grants' Administrative Report were highlighted. Dr. Allen mentioned the NIH post-doctoral program in which the Library does not presently participate. Pending legislation, however, includes authority for a modest NLM-sponsored training grant program, Dr. Allen said. Whether it will in fact be mounted is uncertain.

Of the FY 73 funds released from impoundment, the sum of \$633,000 was earmarked for the Library's Extramural Programs, allowing for 12 awards: two new training grants, under which trainees will learn to use the computer as an aid to health care delivery; three publication grants; and seven resource grants.

A third item related to a Government Accounting Office assertion that NIH has not succeeded in discouraging the practice of duplicative purchase from grant funds of research equipment when similar equipment is already available. This appears to be a chronic problem which has defied resolution. NIH has obligated the universities again to accept greater responsibility for compliance. NIH will no longer mail application forms directly to potential principal investigators. Instead, a supply will be furnished to each grantee institution. The institution will also receive--four months prior to due date--a list of grantees expected to apply for grant continuation, accompanied by a copy of the face page of each application. Some thought is being given at this time to making NLM application kits available through Regional Medical Libraries as an additional source.

#### Indirect Costs

Excessive indirect costs associated with Special Scientific Projects (SSP) have concerned the Biomedical Library Review Committee as well as the Board of Regents. In this connection, Dr. Allen reported on initiatives taken by the Extramural Programs since the last Board meeting. Negotiations were concluded with DHEW to change the policy so as to allow eight percent indirect costs on an SSP award.

#### Exhibit of NLM-Sponsored Publications

Responding to the interest shown in NLM-sponsored publications, Dr. Allen announced that such an exhibit would be prepared for the November meeting of the Board. At the same time there are expected to be presented for the Regents' review a set of publication guidelines currently in preparation and scheduled for evaluation of appropriate consultants.

## U.S.-Israel Binational Science Foundation Board Meeting

Dr. Allen reported on the March 24-26, 1974, meeting in Jerusalem of the Board of the U.S.-Israel Binational Science Foundation.

It will be recalled that the Library's Special Foreign Currency Program was begun in 1962 under an amendment to Public Law 480, which was passed in 1958. Currently active in Egypt, India, Israel, Pakistan, Tunisia, Poland, and Yugoslavia, the program was developed under NLM's broad mandate "to assist in the improvement of biomedical communications and the dissemination of information in the medical and related sciences." A variety of activities may qualify for support under the program: critical reviews, monographs, secondary literature tools, translations, etc. NLM, after due evaluation, authorizes awards for such undertakings to be paid in native currencies, which accumulate in a special fund that receives proceeds from the sale of surplus American agricultural products within the participating countries.

When the imminent exhaustion of P.L. 480 funds in Israel became apparent early in 1972, the U.S.-Israel Binational Science Foundation was conceived as a means of continuing a successful and productive program. Established in September of that year, the Foundation provided for a \$30 million (equivalent in Israeli pounds) contribution by both the United States and Israel, the interest from the resulting \$60 million (equivalent) to continue the type of scientific research projects formerly conducted with P.L. 480 funds.

The ten-member Board of the U.S.-Israel Binational Science Foundation, composed of five Israelis and five Americans, is chaired by Dr. H. Guyford Stever, Director of the National Science Foundation. Americans attending the March 1974 meeting, in addition to Dr. Stever and Dr. Allen, who substituted for Dr. David J. Sencer, Director of the Center for Disease Control, were: Dr. John P. Schaefer, President, University of Arizona; Mr. Albert A. Spiegel, a Los Angeles attorney; and Mr. Herman Pollack, Director, International and Scientific Affairs, U.S. State Department.

The initial review of sub-project applications to NLM, funded under the Binational Foundation award to the Israel Journal of Medical Sciences, is conducted by DRG study sections in the same manner as the domestic publication grant program.

Dr. Allen reported that the Foundation Board's approved applications included two overall NLM projects whose continuation the Library views as well warranted by virtue of their achievements so far.

### XV. CONSIDERATION OF PENDING APPLICATIONS

Dr. Roger W. Dahlen, Chief of EP's Division of Biomedical Information Support, informed the Board that Program Officer Mrs. Frances E. Johnson will be leaving shortly for a year's leave of absence for study at the University of Rhode Island.

As required by council and board operating procedures, Dr. Dahlen reminded the Regents of conflict-of-interest and confidentiality restrictions. Variations in the regulations, as prescribed by a recent NIH manual issuance on the subject, prompted several questions regarding applicability which will be explored before the November 1974 meeting. The review of pending applications proceeded in closed session, guided by Dr. Dahlen; Mr. Arthur J. Broering, Deputy Associate Director for Extramural Programs; and Dr. Jeanne L. Brand, Chief, International Programs Division. At the conclusion of the grants session, in accordance with the revised procedures, each member signed a statement, provided to him earlier in the day, certifying that in the review of applications he did not participate in the discussion of or vote on an application from an organization, institution, or university system where he is an employee, consultant, officer, director, or trustee, or has a financial interest.

On June 18, the Extramural Programs Subcommittee met to consider recommendations of initial review groups. The Board subsequently concurred with all of the Subcommittee's recommendations, including eight specifically brought to their attention. One application, on which the Subcommittee made no recommendations, was deferred by the Board for reconsideration by the initial review group. Also during its June 18 meeting, the Subcommittee conducted a final review of one P.L. 480 Special Foreign Currency Program application.

Grant applications recommended for approval by the Board are included in the attached summary. Dr. Dahlen concluded by bringing to the Board's attention interim actions taken by the EP staff since the last meeting in March 1974.

#### XVI. OTHER BUSINESS

For Chairman Dr. John P. McGovern and Dr. J. Stanley Marshall, whose terms expire on August 3, 1974, this was a final meeting. During dinner following the first day's meeting, Dr. Cummings expressed to the retiring Regents the Library's warm thanks for dedicated and constructive service and presented them with certificates of appreciation.

#### XVII. ADJOURNMENT

The meeting of the Board of Regents was adjourned at 12:30 p.m. on Thursday, June 20, 1974.

\* \* \* \* \*

Tuesday, June 18, 1974, 2:30 p.m. to 5:00 p.m. (EP Subcommittee)  
Wednesday, June 19, 1974, 9:00 a.m. to 5:00 p.m.  
Thursday, June 20, 1974, 9:00 a.m. to 12:30 p.m.

ACTIONS TAKEN BY THE BOARD OF REGENTS

1. The Board elected W. N. Hubbard, Jr., M.D., Chairman for 1974-75.
2. The Board presented to Sharon Valley, Ph.D., of the Library's Specialized Information Services, the 1974 Regents' Award for Scholarship or Technical Achievement.
3. The Board concurred with recommendations of the Extramural Programs Subcommittee on Research, Resource, Regional, and Publication grant applications and one Special Scientific Project application. It deferred one application for reconsideration by the initial review group.

\* \* \* \* \*

I hereby certify that, to the best of my knowledge, the foregoing minutes and attachment are accurate and complete.

Martin M. Cummings 9/11/74      John P. McGovern, M.D. 8/3/74  
Martin M. Cummings, M.D. (Date)      John P. McGovern, M.D. (Date)  
Executive Secretary      Chairman

Robert B. Mehnert  
Chief  
Office of Inquiries and  
Publications Management

APPLICATIONS RECOMMENDED FOR APPROVAL BY COUNCIL  
(Arranged numerically by program)

COUNCIL DATE: JUNE 1974

INSTITUTE/DIVISION: NATIONAL LIBRARY OF MEDICINE  
APPLICATION NUMBER SHORT TITLE

AMOUNTS  
RECOMMENDED

2 R01 LM00919-04  
THE PSYCHIATRIC THOUGHT OF BENJAMIN RUSH  
04 11,623  
05 12,269

2 R01 LM00925-04  
A SYNOPSIS OF MEXICAN HERPETOLOGY  
04 47,890  
05 43,485  
06 46,485

2 R01 LM00984-05  
DOCTRINES OF IRREGULAR PULSE: GALEN TO THE 20TH CENTURY  
05 10,760  
06 10,760

2 R01 LM01803-02  
SCIENCE, MEDICINE AND MODERNIZATION IN EAST AFRICA  
02 7,025

1 R01 LM02307-01  
BIBLIOGRAPHIC RETRIEVAL WITH AN IN-HOUSE MINICOMPUTER  
01 103,997  
02 38,010  
03 40,019

1 R01 LM02315-01 DUAL: CA  
REVIEW OF CHEMICAL CARCINOGENESIS  
01 4,500

1 R01 LM02324-01  
THE EARLY HISTORY OF PUBLIC HEALTH IN WESTERN EUROPE  
01 8,000

APPLICATIONS RECOMMENDED FOR APPROVAL BY COUNCIL  
(Arranged numerically by program)

COUNCIL DATE: JUNE 1974

INSTITUTE/DIVISION:	APPLICATION NUMBER	DUAL:	SHORT TITLE	AMOUNTS RECOMMENDED
NATIONAL LIBRARY OF MEDICINE	1 R01 LM02327-01	NS		01 11,585
				02 12,435
			BIBLIOGRAPHIA NEUROENDOCRINOLOGICA	03 13,200
	1 R01 LM02331-01			01 11,305
			HEALTH CARE IN EARLY NINETEENTH-CENTURY FRANCE	
	1 R01 LM02332-01			01 56,045
			A COMPREHENSIVE BIBLIOGRAPHY ON WOMEN IN MEDICINE	
	1 R01 LM02333-01			01 71,065
			COSTS AND THEIR ASSESSMENT TO USERS IN A MEDICAL LIBRARY	02 74,873
	1 R01 LM02350-01			01 49,394
			A NEW MODEL FOR MEDICAL INFORMATION COMMUNICATION SYSTEM	02 43,913
				03 46,493
	1 R01 LM02353-01			01 45,000
			DISSEMINATION OF MOLECULAR DATA FOR BIOMEDICAL USE	02 47,500
				03 50,000
	1 R01 LM02359-01			01 8,175
			THE MOSCOW PLAGUE OF 1771: A SOCIAL HISTORY	

APPLICATIONS RECOMMENDED FOR APPROVAL BY COUNCIL  
(Arranged numerically by program)

INSTITUTE/DIVISION: NATIONAL LIBRARY OF MEDICINE

COUNCIL DATE: JUNE 1974

AMOUNTS  
RECOMMENDED

APPLICATION NUMBER                      SHORT TITLE

1 R01 LM02360-01

01            2,400  
02            2,100  
03            2,200

HYGIENIC REFORM IN JACKSONIAN AMERICA

1 R01 LM02380-01

01            21,389

3RD EDITION - 8MM FILMS IN MEDICINE AND HEALTH SCIENCES

APPLICATIONS RECOMMENDED FOR APPROVAL BY COUNCIL  
(Arranged numerically by program)

INSTITUTE/DIVISION: NATIONAL LIBRARY OF MEDICINE

COUNCIL DATE: JUNE 1974

APPLICATION NUMBER

SHORT TITLE

2 R01 GM LM 18,676-04

CATALOGS OF MENDELIAN TRAITS IN MAN

AMOUNTS  
RECOMMENDED

04	31,847
05	24,384
06	25,907



APPLICATIONS RECOMMENDED FOR APPROVAL BY COUNCIL  
(Arranged numerically by program)

COUNCIL DATE: JUNE 1974

INSTITUTE/DIVISION: NATIONAL LIBRARY OF MEDICINE

APPLICATION NUMBER	SHORT TITLE	AMOUNTS RECOMMENDED
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3 R13 LM00824-05S1

05S1		9,276
06S1		3,193

INTERNATIONAL MAMMALIAN HISTOLOGICAL NOMENCLATURE

APPLICATIONS RECOMMENDED FOR APPROVAL BY COUNCIL  
 (Arranged numerically by program)

COUNCIL DATE: JUNE 1974

INSTITUTE/DIVISION: NATIONAL LIBRARY OF MEDICINE

APPLICATION NUMBER	SHORT TITLE	AMOUNTS RECOMMENDED
1 G08 LM02132-01A1	INFORMATION SERS SW NEW JERSEY CONSORTIUM FOR HEALTH	01A1 16,595 02 20,050 03 17,550
1 G08 LM02272-01	LIBRARY DEVEL FOR SOUTH CAROLINA MED EDUC CONSORTIUM	01 33,333
1 G08 LM02299-01	COLLECTION DEVELOPMENT PROJECT	01 38,400 02 12,253 03 9,115
1 G08 LM02329-01	TWIN CITIES BIOMED CONSORT UNION LIST OF SERIALS	01 3,903
1 G08 LM02363-01	THE LAFAYETTE AREA MEDICAL LIBRARY CONSORTIUM	01 16,815 02 19,415 03 20,915

APPLICATIONS RECOMMENDED FOR APPROVAL BY COUNCIL  
(Arranged numerically by program)

COUNCIL DATE: JUNE 1974

INSTITUTE/DIVISION: NATIONAL LIBRARY OF MEDICINE

APPLICATION NUMBER	SHORT TITLE	AMOUNTS RECOMMENDED
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1 F13 LM 26,417-01

01 22,763

02 21,590

CORRELATIVE RADIOBIOLOGY

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE  
NATIONAL INSTITUTES OF HEALTH  
NATIONAL LIBRARY OF MEDICINE  
Bethesda, Maryland

AGENDA

49th Meeting of the

BOARD OF REGENTS

Board Room  
National Library of Medicine

9:00 a.m., December 5-6, 1974

MEETING OPEN: All day on December 5 and from 9:00-9:30 a.m. on December 6.

MEETING CLOSED: From 9:30 a.m. to adjournment on December 6 for grant application review.

I. CALL TO ORDER AND INTRODUCTORY REMARKS W. N. Hubbard, Jr., M.D.

II. CONSIDERATION OF MINUTES OF LAST MEETING TAB I  
(Orange Book)

III. DATES OF FUTURE MEETINGS  
1975 Calendar TAB II

Next Meeting: March 13-14, 1975 (Th-F)

Subsequent Meeting: June 26-27, 1975 (Th-F)

Selection of Meeting Dates: November 1975

(13-14)	(18-19)	(25-26)	(Thanksgiving is November 27)
(Th-F)	(T-W)	(T-W)	

NOTE:

American Medical Women's Association	Nov. 6-9	Tucson
American Medical Association, Clinical Meet.	Nov. 29-Dec. 4	Honolulu

IV REMARKS BY THE DEPUTY DIRECTOR, NIH R. W. Lamont-Havers, M.D.

V. REPORT OF THE DIRECTOR, NLM TAB III Martin M. Cummings, M.D.

COFFEE BREAK

VI. AVLINE--Status Report TAB IV George E. Mitchell, D.M.D.  
J. William Cox, Capt., MC,  
USN, *Discussant*

VII. REPORT ON CONFERENCE ON ECONOMICS TAB V Mary E. Corning  
OF BIOMEDICAL PUBLICATIONS Susan Y. Crawford, Ph.D.,  
*Discussant*

LUNCHEON--Catered in Conference Room B.

11/21/74

VIII. MEDLARS II

TAB VI

- A. Technical Progress
- B. User Charges

Davis B. McCarn  
 Harold M. Schoolman, M.D.  
 Alfred R. Zipf,  
*Discussant*

IX. TOXICOLOGY INFORMATION PROGRAM

TAB VII

Henry M. Kissman, Ph.D.  
 G. Burroughs Mider, M.D.  
*Discussant*

COFFEE BREAK

X. NLM PROGRAM TRIP TO INDIA AND THE MIDDLE EAST

W. N. Hubbard, Jr., M.D.

XI. REPORT FROM THE LISTER HILL CENTER

TAB VIII

Robert M. Bird, M.D.

XII. COMPUTER-ASSISTED DIAGNOSIS AND TREATMENT--WORKSHOP

Ethel Weinberg, M.D.

RECESS

DINNER (Dutch treat) . . . . . Holiday Inn (Versailles III Room)  
 Cocktails (Cash bar): 6:30 p.m. . . . . 8120 Wisconsin Avenue  
 Dinner: 7:30 p.m. . . . . Bethesda, Maryland

Speaker: Dr. Joseph F. Volker  
 President  
 University of Alabama in Birmingham

Topic: "Pasteur in Alabama"

RECONVENE: 9:00 a.m., December 6, 1974

XIII. REPORT OF THE ASSOCIATE DIRECTOR FOR EXTRAMURAL PROGRAMS

Ernest M. Allen, Sc.D.

- A. Review of Council Procedures  
 "Guidelines for Adjustment by Staff in Time and Amount of Grant Award"

TAB I (Gray Book)

- B. DRG Administrative Report

TAB II

- C. Training Grant Programs--  
 Present Status

TAB III

- D. Exhibit of EP-Supported Publications

TAB IV

- E. RML Status Report

Arthur J. Broering

MEETING CLOSED FOR GRANT APPLICATION REVIEW

- XIV. GRANT APPLICATIONS: RESEARCH, RESOURCE, AND SPECIAL SCIENTIFIC PROJECTS Roger W. Dahlen, Ph.D.
  - A. Evaluation of Grant Application Review Criteria by Biomedical Library Review Committee TAB V
  - B. Research Grant Applications TAB VI
  - COFFEE BREAK
  - C. Resource Grant Applications Tab VII
  - D. Special Scientific Projects TAB VIII
- XV. GRANT APPLICATIONS: PUBLICATIONS PROGRAM Jeanne L. Brand, Ph.D.
  - A. Publications Guidelines TAB IX
  - B. Publication Grant Applications TAB X
- XVI. OTHER BUSINESS W. N. Hubbard, Jr., M.
- XVII. ADJOURNMENT

PRIVATE BOARD LUNCHEON--Catered in Conference Room B.

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DEPARTMENT OF HEALTH, EDUCATION  
AND WELFARE

NATIONAL INSTITUTES OF HEALTH  
NATIONAL LIBRARY OF MEDICINE  
BOARD OF REGENTS

MINUTES OF 49TH MEETING  
DECEMBER 5-6, 1974

BOARD ROOM  
NATIONAL LIBRARY OF MEDICINE  
BETHESDA, MARYLAND

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE  
PUBLIC HEALTH SERVICE  
THE BOARD OF REGENTS OF THE NATIONAL LIBRARY OF MEDICINE

Minutes of Meeting 1/ 2/

December 5-6, 1974

The Board of Regents of the National Library of Medicine was convened for its forty-ninth meeting at 9:00 a.m. on Thursday, December 5, 1974, in the Board Room of the National Library of Medicine, Bethesda, Maryland. Dr. W. N. Hubbard, Jr., President, The Upjohn Company, and Chairman of the Board of Regents, presided. In accordance with P.L. 92-463 and the Determination of the Director, NIH, dated October 30, 1974, the meeting on December 5, 1974, was open to the public from 9:00 a.m. to 5:00 p.m., and from 9:00 a.m. to 9:30 a.m. on December 6; the meeting was closed from 9:30 a.m. to noon on December 6 for the review, discussion, and evaluation of grant applications.

Board members present were:

Dr. Susan Y. Crawford  
Mrs. Bernice M. Hetzner  
Dr. W. N. Hubbard, Jr.  
Dr. Angelo M. May  
Dr. Joseph F. Volker  
Dr. Ethel Weinberg

Alternates to Board members present were:

Dr. Faye G. Abdellah, representing Dr. S. Paul Ehrlich, Jr.  
Col. Mims C. Aultman, representing Lt. Gen. Richard R. Taylor  
Capt. J. William Cox, representing Vice Adm. Donald L. Custis  
Dr. Bill M. Domm, representing Dr. John D. Chase  
Mr. John D. Lorenz, representing Dr. L. Quincy Mumford  
(Attended December 5 only)  
Dr. John W. Mehl, representing Dr. Eloise E. Clark  
(Attended December 5 only)  
Brig. Gen. George E. Reynolds, representing Lt. Gen. Robert A. Patterson

Board roster--Attachment "A"

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1/ For the record, it is noted that members absent themselves from the meeting when the Board is discussing applications from their respective institutions (interpreted to mean the entire system of which a member's institution is a part) or in which a conflict of interest might occur. Only when an application is under individual discussion will the Board member absent himself. This procedure does not apply to "en bloc" actions.

2/ The Board of Regents, when considering the extramural programs of NLM, sits as the National Medical Libraries Assistance Advisory Board, and concurrently discharges the responsibilities of both bodies.



National Library of Medicine Staff members attending this meeting included:

Dr. Martin M. Cummings, Director  
Dr. Harold M. Schoolman, Assistant Deputy Director  
Dr. Ernest M. Allen, Associate Director for Extramural Programs  
Dr. Robert M. Bird, Director-designate, Lister Hill National Center for Biomedical Communications  
Dr. John B. Blake, Chief, History of Medicine Division, LO  
Dr. Jeanne L. Brand, Chief, International Programs Division, EP  
Dr. Charles F. Bridgman, Associate Director for Educational Resources Development  
Mr. Arthur J. Broering, Deputy Associate Director for Extramural Programs  
Miss Mary E. Corning, Assistant Director for International Programs  
Dr. George J. Cosmides, Deputy Associate Director, Specialized Information Services  
Dr. Roger W. Dahlen, Chief, Division of Biomedical Information Support, EP  
Mr. Charles M. Goldstein, Chief, Computer Technology Branch, LHCNBC  
Mr. B. Earl Henderson, Chief, Communications Engineering Branch, LHCNBC  
Dr. Henry A. Kissman, Associate Director for Specialized Information Services  
Dr. Joseph Leiter, Associate Director for Library Operations  
Mr. R. Brian Makoff, Chief, Office of Personnel Management  
Mr. Davis B. McCarn, Associate Director for Computer and Communications Systems  
Mr. Robert B. Mehnert, Chief, Office of Inquiries and Publications Management  
Dr. George E. Mitchell, Director, National Medical Audiovisual Center  
Dr. Michael A. Oxman, Chief, Technical Files Implementation Branch, SIS  
Mr. Kent A. Smith, Assistant Director for Administration  
Dr. James M. Stengle, Deputy Director for Medical Affairs, LHCNBC  
Mr. Bruno M. Vasta, Chief, Toxicology Information Service Branch, SIS  
Mr. Richard T. West, Chief, Office of Program Planning and Evaluation, EP

Others present included:

Mr. James R. Becraft, Budget Analyst, Office of Resource Management, Office of the Assistant Secretary for Health  
Dr. Herbert H. Coburn, Executive Secretary, Social Problems Research Review Committee, ADAMHA  
Dr. Fred C. Cole, President, Council on Library Resources, Inc.  
Dr. Richard A. Farley, Director, National Agricultural Library  
Dr. G. Burroughs Mider, Executive Officer, American Society for Experimental Pathology; Consultant to National Library of Medicine  
Mr. Alfred R. Zipf, Senior Administrative Officer, Bank of America; Consultant to National Library of Medicine

Members of the public present:

None

## I. OPENING REMARKS

Dr. W. N. Hubbard, Jr., Chairman, welcomed the Regents, alternates, and guests to the 49th meeting of the Board of Regents of the National Library of Medicine, noting at the same time that there are four unfilled appointments on the Board. As a preamble to the meeting, the Chairman offered several observations of a general nature. In the face of lower dollar authorizations and slowed expansion of services, NLM should concentrate on optimizing its present resources and improving the gains made in the last ten years. The Library is now in a regenerative phase, as it was in the 1950s, and we should remain in a state of readiness, ready to capitalize on future opportunities. The Library should focus its energies on (1) maintaining its present services at a high level and (2) developing the Lister Hill Center and its programs for creating and demonstrating new biomedical communications modalities. At the same time, NLM should recognize that it is necessary to moderate the growth rate of the expanding information systems it has created.

## II. CONSIDERATION OF MINUTES OF PREVIOUS MEETING

The Board recommended approval of the minutes of the meeting of June 19-20, 1974, with the following changes:

Page 1--Add under "Alternates to Board members present were:"

Capt. J. William Cox, representing Vice Admiral Custis (June 20)  
Brig. Gen. George E. Reynolds, representing Lt. General Patterson

Page 19--Add as last sentence before Item XV:

Mr. Arthur J. Broering, Deputy Associate Director for Extramural Programs, reported on the meeting and recommendations of the Board's Subcommittee for Library Construction, which met in Houston on May 30, 1974.

## III. DATES FOR FUTURE BOARD MEETINGS

The Board reconfirmed the dates of March 13-14, 1975, for the next meeting and confirmed the dates of June 26-27, 1975, for the subsequent meeting. November 25-26, 1975, were approved tentatively for the following meeting.

## IV. REPORT OF THE DIRECTOR, NLM

Dr. Martin M. Cummings introduced several new NLM senior staff members: Dr. Robert M. Bird, Director-designate of the Lister Hill National Center for Biomedical Communications; Mr. Charles M. Goldstein, Chief of the Center's Computer Technology Branch; and Mr. R. Brian Makoff, Personnel Officer. He mentioned that Mr. Melvin S. Day, NLM Deputy Director, is in Venezuela, where he is being honored by induction into the Venezuelan Academy of Sciences.

Dr. Cummings then discussed several items of current concern:

1. The Board of Regents will be reduced to three appointed members by next August, if new Regents are not appointed before then. The Director was concerned that those appointed should conform to the specifications of NLM's legislation which states that at least six Regents be selected from "leaders in the fields of medical, dental, or public health research or education." Several previous nominations by the Administration, not accepted by the Senate, did not fall into this broad category.

2. Dr. Cummings noted an erosion of control over certain NLM and NIH functions. This erosion can be seen especially in the area of personnel: Several appointments, including Dr. Bird's, are taking an unacceptably long time for clearance. Projected personnel ceiling reductions put in doubt the Library's ability to handle effectively an ever increasing workload. The Federal salary structure is distorted by a pay scale ceiling of \$36,000. As a result, there is in some cases no difference in salary between those who manage small programs and those who manage large ones. This distortion is common to all Federal agencies and leads to many problems in recruitment and other areas of personnel management.

3. Dr. Cummings, assisted by Dr. John B. Blake, Chief of the History of Medicine Division, demonstrated to the Regents the poor quality of preservation binding of the Library's books and journals done under an HEW contract. NLM is required to use this commercial binder, as are all other HEW agencies. Although a small amount of money is saved, many of the Library's books are being virtually destroyed. Dr. Cummins said that NLM should be able to pay a higher rate for quality binding of selected important materials. This presentation gave rise to a discussion by Board members about the necessity for NLM to insist on high-quality binding specifications that would not be subject to alteration by outside authority in negotiating a lowest-cost contractor. The Board recommended that because of its legislative requirements for archival and historical preservation, as well as the heavy use made of its materials, the Library should have authority to require the fulfillment of appropriate specifications for the binding of its materials. This should not be subject to alteration by the specifications submitted by DHEW or another agency which does not have the same statutory requirements.

The Director reported several items of a positive nature:

1. NLM and the National Cancer Institute have reached an understanding under which the Library will use its communications apparatus to operate the International Cancer Research Data Bank for NCI. The Cancer Institute will reimburse the Library approximately \$350,000 for costs associated with mounting the data base. A senior staff position is also being provided by NCI for this effort.

2. All foreign MEDLARS/MEDLINE Centers have agreed to renew their arrangements with NLM, despite our raising the cost from \$30,000 to \$50,000 per year. This is a reflection of the quality and utility of the system.

3. All of the Department's health-related agencies have agreed to a common position for telecommunications (including satellite transmission). The agencies will retain control of the content of the messages transmitted, rather than have such control vested in the HEW Assistant Secretary for Planning. This position, which has been articulated in general terms by the Board of Regents over the years, was vigorously supported by Dr. Charles C. Edwards, Assistant Secretary for Health.

4. Dr. Cummings reported that arguments on the Williams & Wilkins copy-right case will be heard by the Supreme Court on December 17. Solicitor General Robert Bork will present the Government's case, but to date no member of his office has contacted any of the defendants.

In addition to discussion of the binding problem, the Regents showed an interest in the future relations between the new Armed Forces Medical School and NLM. Dr. Cummings reported that there have been discussions with the new school's Board of Regents and the President, Dr. Curreri, at which it was urged that the design for the new facility include the provision of a first-class medical library.

Dr. Cummings asked Mr. Ke.t A. Smith, NLM Assistant Director for Administration, to report on several items for the Board. Mr. Smith briefly described the new Budget and Impoundment Control Act which establishes new procedures, giving the Congress greater control over the Federal budgetary process. The Act, among other things, establishes new House and Senate budget committees, a new Congressional Budget Office to assist these committees, and defines a new fiscal year beginning on October 1 in 1976.

In reviewing the Library's present budget picture, Mr. Smith noted that we do not yet have an appropriation for FY 1975. (Note: The HEW appropriation was signed by the President on December 7, 1974. The 1975 budget requests \$27,738,000 and 460 positions for NLM. The Library submitted its proposed FY 1976 budget to the Department and to the Office of Management and Budget at the end of October. It is estimated that the NLM level will be approximately \$29 million.

Mr. Smith reported on a work flow/space study recently conducted by his office. As a result of this study, a number of recommendations will be implemented to improve the flow of work, to accommodate planned expansion of the Lister Hill Center and Toxicology Information Program, and to alleviate overcrowding in some parts of the Library. Among the planned changes are: uniting the serial records and binding functions and moving them to the A Level; combining the personnel and training staffs and providing them office space on the Mezzanine; providing additional space for Lister Hill Center and the Toxicology Information Program; and relocating the Contracts Office, thereby releasing space for stack use. Mr. Smith also reported that the tentative design plans for the proposed Lister Hill Center building which were disapproved by GSA last summer have been resubmitted and approved. It is estimated that intermidate drawings will be completed by February 1975, with final working drawings and specifications by April 1975.

## V. AVLINE STATUS REPORT

Dr. George E. Mitchell, Director of the Library's National Medical Audiovisual Center in Atlanta, briefly recounted for the Regents the ongoing peer review of audiovisual health-science instructional materials. To conduct this peer review, the Library has entered into contract agreements with the Association of American Medical Colleges and the American Association of Dental Schools, which organizations have formed small panel groups in specialty areas to review audiovisual teaching material (motion pictures, videotapes, and slide/sound sets). A list of 13,000 titles for review have been entered into a computerized file (AVPROC--audiovisual in process), of which over 2,000 have been evaluated since August 1973. Of those evaluated, 1,500 have been approved for inclusion in a computerized retrieval system similar to MEDLINE, to be known as AVLINE (audiovisuals on-line). NMAC is endeavoring to acquire one copy of each of the approved audiovisuals for placement in a national repository.

AVLINE testing will begin in March 1975 with a limited data base of about 300 citations. Abstracting, cataloging, and indexing for these are now being done. Dr. Mitchell played a videotape for the Regents that demonstrated how the system would work in operation. There will be 31 elements in each unit record, 19 of which will be searchable. There will be five print commands, each giving progressively more information about the citations retrieved. The address and telephone number of the distributor of an audiovisual will also be retrievable on-line. When AVLINE is operational, Dr. Mitchell said, it will be possible to have an annual computer-produced catalog with quarterly supplements.

Captain Cox, discussant for this presentation, remarked that the peer review system that has been set up for AVLINE is "the most remarkable consortium of cooperation among these professional groups that I have witnessed." It has been estimated, said Captain Cox, that some \$200,000,000 per year are being spent for non-print training aids in the health sciences. The work being done by NMAC should help bring some order to these highly fragmented efforts and be a most worthwhile information resource for health professionals. Dr. Weinberg emphasized the importance of letting professionals know about the existence of the new information service, when it is operational.

## VI. REPORT ON CONFERENCE ON ECONOMICS OF BIOMEDICAL PUBLICATIONS

Miss Mary E. Corning, NLM Assistant Director for International Programs, served as Coordinator for the special Conference on the Economics of Biomedical Publications, held at NLM on October 23-24, 1974. Miss Corning said that the conference was an effort on the part of NIH and NLM to encourage a thoughtful examination of the economic issues facing the Federal, private, and commercial biomedical publishing industry.

Representatives of the 100 journals in Abridged Index Medicus (AIM) were invited to participate in the conference, with the addition of several basic journals in biology, physiology, biochemistry, and chemistry. The conference was attended by over 50 editors and publishers, representing professional societies, non-profit and profit organizations. Miss Corning presented for

the Regents a statistical breakdown of the AIM journals by type of publisher (commercial, professional society, university press), ownership of copyright, number of articles published, page charge policy, and advertising policy.

The issues examined at the conference included copyright, journal management, the need for innovation in journal publication, the proliferation of specialty journals, rising publication costs, equity of page charges, and the respective roles of the Federal, private, profit, and non-profit sectors. There was an interesting contrast in income for the chemical and the biomedical journals: whereas the biomedical journals derived 50 percent of their income from advertising, the chemical journals received only about 20 percent; page charges were honored at a 90 percent level in biomedical journals (although this is a minor source of revenue--many biomedical journals do not assess page charges), whereas chemical journals, which depend more heavily on such charges, have a 60 percent acceptance.

Miss Corning noted that it is evident that there is a paucity of data making it difficult to draw conclusions about the status of biomedical publishing. Furthermore, there are no hard data on the extent of Federal funding for these activities. She noted a shift in who should assume the financial burden for scientific publishing: first the professional society; then the author through the payment of page charges, reprints, and handling charges; and, more recently, the user through increased and differential subscription rates for individuals and institutions. Two incontrovertible facts that did arise from the discussions were that production costs (especially paper) are rising steeply, and that library budgets are facing limitations and decreases, leading to reduced numbers of subscriptions in some cases.

There were three recommendations from the conference. The first was that NIH continue to support the dissemination of research results as an integral part of its research support efforts. NIH has accepted this recommendation and will be responsive to it. The second was that NLM be encouraged to continue to serve as a forum for workshops and conferences oriented toward specific topics in biomedical communications. At NLM's request, this recommendation also stated that the community to be served has a responsible role in the organization and management of such conferences. The third recommendation was that the Library provide support to assist in the creation of an organization which would be dedicated to the exchange of data and information related to practices and problems in publication of biomedical information. With regard to the two recommendations concerning the Library, the NLM accepted these recommendations and stated its willingness to be responsive. The biomedical community to be served is expected to take the initiative to stimulate appropriate follow-up action.

Dr. Susan Y. Crawford, discussant for Miss Corning's report, presented figures relating to expenditures and income for the New England Journal of Medicine. They show that distribution, advertising, and subscription processing costs had gone up substantially between 1960 and 1973, resulting in a decrease in the percentage going to actual production costs. Income from advertising has dropped as a percentage of total income in the same period, while income from

subscriptions has risen substantially. Dr. Crawford enumerated a number of possible partial solutions identified at the conference: better management could cut costs; articles could be reduced in size by 35 percent; subscription rates could be raised without losing many subscribers; publishers could increase revenues from sale of secondary publications and microfilm editions. The general feeling was that the conference was an excellent first step, and that there was much missing information that had yet to be gathered for future consideration.

## VI. TECHNICAL PROGRESS ON MEDLARS II

Mr. Davis B. McCarn, NLM Associate Director for Computer and Communications Systems, presented to the Regents a series of charts showing the growth of NLM's on-line systems. Since June 1972, when we were operating at about 42,000 on-line searches per year, the system has grown to a point where we are now running at the rate of about 400,000 searches per year. MEDLINE accounts for some 70 percent of the system's utilization with the other on-line data bases making up the rest. Response times are staying level at an average well below 10 seconds. Using institutions now number about 350 (including MEDLINE and TOXLINE). The need for additional computer capacity was foreseen and NLM is now installing a second central processing unit (IBM 370/158) to handle the increasing loads as a multiprocessor system.

During the third and fourth quarters of 1974, a major portion of the MEDLARS II system underwent acceptance testing and implementation. ELHILL III, the on-line retrieval service of MEDLARS II, became operational in late June with the conversion of the MEDLINE file from MEDLARS I. Performance testing for a required 10 second response time under a load of 50 users was satisfactorily conducted. Citation input processing became operational under MEDLARS II in August. A number of problems were encountered and corrected; the input processing system is now sound. Acceptance testing has been completed of all citation-based publications that are the responsibility of the contractor. Finally, the cataloging capabilities of MEDLARS II are now undergoing acceptance testing. All aspects of the MEDLARS II system, according to Mr. McCarn, should be implemented by the end of 1974.

Mr. Alfred R. Zipf, discussant for Mr. McCarn's presentation, said that the present contractor for MEDLARS II (System Development Corporation) has done a good job. Mr. Zipf is concerned, however, about the ability of the Library's programming staff to manage change in the new system. Training may help to improve their performance, but even this may not be sufficient. Some of the programmers could be transferred to help manage the data bases, where their talents are more suitable. Alternatives, such as slowing down or freezing changes in the system, hiring more staff, or using another contractor, are not feasible. We should continue to fund our present contractor to help manage the inevitable changes, and at the same time give intensive training to some programming staff while transferring others.

## VII. USER CHARGES FOR ON-LINE SERVICES

Dr. Harold M. Schoolman, NLM Assistant Deputy Director, discussed with the Regents a reexamination of user charges. Certain basic assumptions were made in the rethinking of charge policy: that serious needs should not be discouraged by high charges; that trivial use should be discouraged by the charges; that fees should allow for the expansion of the service and at the same time provide a control on growth; that charges should allow for equal access, so that certain communities are not effectively prohibited use; that it is necessary to disassociate the constantly increasing total costs of the system (although unit costs go down with increased volume) from the budgetary restraints of the Library, so as to have the growth pay for itself; and that the user community should be assisted in establishing a rational priority for the use of other services and reference tools.

Using FY 1974 data, a total cost of \$900,000 was calculated for the on-line services. This figure is in addition to the costs which NLM would have underwritten in any event, such as creating the data base, publications, and technical services. Of the 47,000 on-line hours, the user community was responsible for 41,000, NLM the remainder. The cost per hour for users, therefore, is about \$22, over and above what NLM would have spent for its own use in FY 1974. It is also possible, however, to charge only for the communication costs that take place between "the outside wall of the Library" and the user terminal. This calculation would result in a lower figure. Making the assumptions that NLM would be responsible for the start-up, incremental, and support costs of the system, and that user charges should be based on a strict recovery of the communication costs, the calculated figure for a per-hour charge for FY 1975 would be about \$8. Users have been notified that this new charge will go into effect in February, 1975.

Dr. Schoolman asked that the Board consider the policy inherent in these calculations; namely, that NLM will underwrite incremental costs of new equipment necessary to respond to higher demand and the costs of managing the system, and that only pure communication costs will be recovered from the user.

The Regents entered into a general discussion of user charges--including the possibility of having users pay for the incremental equipment costs, controlling the number of terminals in use, a "use per hour" maximum for the terminals, mandatory minimum charges to the ultimate user, priorities of access at the terminal (to separate more important from less important use), and higher charge rates for peak-time use. The Board unanimously approved a motion to authorize the NLM Director to adjust user charges for on-line service up to a level that would equal the total contract communications costs, with periodic reports to be made to the Board on the effects of such revised rates. The Library should increase its user fees if the present increase from \$6 to \$8 per hour does not reduce demands for service significantly.

## VIII. REPORT ON THE TOXICOLOGY INFORMATION PROGRAM

Dr. Henry A. Kissman, NLM Associate Director for Specialized Information Services, reviewed for the Regents recent progress in the Toxicology



Information Program (TIP). The advisory group for TIP, TIPCOM (Toxicology Information Program Committee), is a body set up under the National Research Council's Assembly of Life Sciences. The Assembly is reevaluating its advisory committees and, concurrently, NLM is considering creating a different structure for advising the Toxicology Information Program.

TOXLINE, the on-line toxicology information retrieval system, was brought in-house last April and placed on NLM's computer. It had previously been operated under a contract. At the same time, costs to the 136 TOXLINE subscribers were lowered to \$15 per connect hour. Dr. Kissman noted that almost 50 percent of the TOXLINE users are commercial institutions. The TOXLINE file size is presently 341,000 records, including both bibliographic citations and abstracts or index terms. CHEMLINE (formerly called TOXLINE Chemical Dictionary) contains 60,000 chemical compound records. Decisions must be made on how to segment the TOXLINE file to prevent its growing to unmanageable proportions; for example, it could be divided by placing 1970 and later material in one on-line file, and earlier records in another file, searchable off-line. The TOXLINE data base is being enriched with bibliographic records from certain specialty files (e.g., teratogenesis literature) as these become available. TIP is working toward the establishment of foreign TOXLINE agreements, complete with quid pro quo arrangements as we have for MEDLARS/MEDLINE.

In addition to the bibliographic retrieval system (TOXLINE), TIP has been working to create an on-line data retrieval system, the Toxicology Data Bank (TDB). The TDB will contain records of compounds which are hazardous and to which populations are exposed. Data, represented as numerical values or verbal descriptions, will be extracted from evaluated sources and put into an on-line search file. The records will be reviewed by groups of experts before being placed in this file. Data extraction from 35 selected sources is now in progress. Approximately 1,000 compound records will be built during this fiscal year.

The activities funded by TIP at the Oak Ridge National Laboratory in Oak Ridge, Tennessee, continue under an agreement with the Atomic Energy Commission. The largest of these activities is a query response service performed by the wholly NLM-supported Toxicology Information Response Center (TIRC). This group is now performing 30-35 full literature searches per month. It is proposed that the charging rate structure for these searches recover all direct costs; this would mean a charge of \$20 per hour for the literature searches. Two kinds of publications are sponsored by TIP's Oak Ridge operation: selected bibliographies and state-of-the-art reviews.

Dr. Kissman reported progress in the area of interaction with other Federal agencies responsible for toxicology activities. A DHEW Committee to Coordinate Toxicology and Related Programs was formed by the Assistant Secretary for Health in 1973; a Toxicology Information Subcommittee was later established. TIP has operational control over the subcommittee's activities. The subcommittee meets monthly, and has directed its efforts toward creating new computerized files, providing chemical file and literature support services to H agencies, and coordinating publication and data acquisition activities.

Dr. G. Burroughs Mider, discussant for Dr. Kissman's presentation, complimented Dr. Kissman and his staff for the order they have brought to the Library's

toxicology information activities. Dr. Mider expressed his concern about the Library's policy of performing services for Federal agencies on purely a cost-recovery basis. He believes that TIP should charge an additional amount to help finance the creation of augmented capabilities. Concerning one project proposed by the Interagency Toxicology Information Subcommittee, Dr. Mider cautioned TIP to consider carefully before getting involved with the Smithsonian Science Information Exchange data file of funded government projects--he feels that the projects listed in that file have resulted in relatively few published accounts of research performed. Dr. Hubbard commented that the whole area of toxicology/pharmacology represents a system of value judgments and is one in which it is difficult to discern or direct trends--"one man's toxicologic reaction is another man's therapeutic response." Dr. Mider responded that one hopeful aspect of the situation is that the Federal agencies and industry, combined, represent about 75 percent of the users, and that they have historically provided leadership in toxicological studies (as opposed to the academic world). Dr. Hubbard commented that he believes the coordinating work of the Library's Toxicology Information Program and the recent collaboration between NLM and NCI are two of the largest steps that have been made in a long time toward the rationalization of the U.S. biomedical information system.

#### IX. NLM PROGRAM TRIP TO INDIA AND THE MIDDLE EAST

Dr. Hubbard reported on the trip which he and Miss Corning made to India and the Middle East to investigate the possibility of further cooperative international programs involving NLM.

In India, Dr. Hubbard and Miss Corning held discussions about possible collaborative programs in biomedical communications, and they sought to become familiar with the plans of India's Department of Science and Technology to develop a national information system. A joint U.S.-India commission recently established includes as part of its apparatus a subcommittee on science and technology. The visitors found a widespread interest in developing biomedical information as a national resource in India, although there was no single agency responsible for bringing together the many components of a biomedical information system. The Indian Department of Science and Technology does have a national plan, but it is a coordination program which would embrace all of science. Although health communication is designated as a part of this system, there is no clear defined plan to develop it or to interrelate the health module with other parts of the overall system. It was Dr. Hubbard's opinion that there was a need for the users of health information to become more heavily involved in developing the communication system. The present Special Foreign Currency Programs of NLM in India should be kept at their present level with a careful review of translation activities. At the conclusion of the visit there was a meeting with Ambassador Moynihan. He offered to approach the Prime Minister in an attempt to get necessary top-level Indian support for a national biomedical information resource. The NLM team left with the Ambassador (at his request) a draft memorandum outlining the operational steps necessary for Indian action. In summary, the discussions were quite encouraging, but because of the complex nature of the Indian government, there is still a long way to go before major collaborative programs can come into being.

Following India, Dr. Hubbard and Miss Corning visited Lebanon, where the discussions with officials revolved around the role of the new Association of Medical Schools in the Middle East and the use of educational technology in medical schools. Many new medical schools are being established in that area and there is a need to consolidate library services for these schools. The American University in Beirut sees itself as having a service role to the entire region, but there is some question whether the countries involved have a similar perception of that university's role. The Agency for International Development has funded a large science center, with a hospital and library, at the American University. The library probably has the largest collection in the Middle East. The World Health Organization's regional office also has an interest in playing a major coordinating role in this area, but has no well-defined plan for doing so. NLM can be helpful to the Association of Medical Schools in the Middle East in the area of self-instructional materials. Because of the large number of students and the lack of in-country faculty, such materials are urgently needed.

When Dr. Hubbard and Miss Corning visited Cairo, they followed closely a visit by the Assistant Secretary for Health, Dr. Edwards, and a group investigating possible joint medical cooperation between Egypt and the U.S. That group had, in fact, discussed the importance of improved medical communication and the potential role of NLM in this connection. Because health education is the province of the education ministry, and medical services the province of the health ministry, there is a problem in determining the locus of responsibility for cooperative projects. There do seem to be real opportunities for cooperation, however.

There is a willingness on the part of the Egyptians to form a working group to meet with appropriate NLM working groups to devise a plan for regionalized medical library services in that country. The plan will be reviewed in six to nine months.

The NLM team also visited the U.S. Naval Medical Research Unit in Egypt, the only U.S. enterprise in that country that was allowed to continue unaffected through all the ups and downs of U.S.-Egyptian relations. It has what is probably the best medical library in Egypt, although its outreach is limited. Dr. Hubbard suggested the possibility of that library providing increased photocopy service to medical libraries in the Cairo area which are in a cooperative program.

Dr. Hubbard summarized the trip by saying that there are bureaucratic problems in India, but that the next step is fairly clear; in Beirut there was a "willingness and an infant organization that had promise;" in Egypt there is a state of readiness and what could turn out to be an implementation plan.

Captain Cox was optimistic about the chances of enhancing the capability of the Naval Medical Research Unit to provide photocopy services to libraries and physicians in the Cairo area. There is precedent for such action in the operations of a similar unit in London. Dr. Hubbard responded that this could be an important lever in getting the Egyptians to implement regionalized library services. Miss Corning commented that there is a trend toward bilateral arrangements which have their origin at the political level, stimulated by the negotiations of Secretary Kissinger in setting up binational commissions. This political impetus is evident in India and Egypt. It was due to the efforts of Dr. Hubbard, she

said, that in our discussions we avoided being embroiled in political considerations and kept the discourse at the scientific and professional level. She also added that officials in these countries were encouraged to contact the World Health Organization to receive MEDLARS information services from that organization, consistent with the NLM/WHO bilateral MEDLARS agreement under which WHO would provide services to developing countries.

#### X. REPORT ON THE LISTER HILL CENTER

Dr. Robert M. Bird, Director of NLM's Lister Hill National Center for Biomedical Communications, recounted for the Board the evolutionary development of the mission of the Lister Hill Center. A recent restatement of the Center's mission calls for the use of communication technology to promote the better utilization of health care resources, to improve the quality of health care records, to facilitate a more equitable distribution of educational resources, and to sustain and update professional competence. The Center is currently organized into three branches: Computer Technology Branch, Communications Engineering Branch, and Educational Technology Branch. There are 16 full-time employees in the Center, with an authorized ceiling of 30. There are recruiting actions for eight professionals.

Dr. Bird briefly described the current Lister Hill Center projects for the Regents. The Computer-Aided Instruction (CAI) Network now numbers some 60 institutions tied together in a national network that allows them to access a variety of computer-aided instructional programs. The New Hampshire/Vermont Medical Interactive Television Network, centered at the Dartmouth Medical School, ties together a number of institutions in that area for purposes of health education and medical consultation. The question of whether such a network can become self-sustaining is now receiving close attention. Another project in the area of health education of the public is centered at the Mount Sinai School of Medicine. This effort is attempting to improve the health of older people in a public housing project by bringing two-way cable television into their apartments, providing communication with the medical staff at Mount Sinai. One of the more exciting projects the Center is engaged in, is the health care delivery and health education experiments in Alaska and the Pacific Northwest using NASA's ATS-1 and ATS-6 communications satellites. Dr. Bird presented a slide which outlined the funding of these projects from inception to the present time.

In discussing future directions for the Lister Hill Center, Dr. Bird emphasized the need for a systematic approach to selecting projects that are directed toward the Center's mission. As one such approach, he presented an analysis of a communication pattern for medical knowledge starting with the research laboratory, through oral presentation, journal publication, general text, and finally entering "conventional wisdom." After analyzing this process, Dr. Bird asked the question: Can we (or should we) alter the elapsed time? In answering this kind of question, the Lister Hill Center can bring its mission more sharply into focus.

## XI. REPORT ON THE COMPUTER-ASSISTED DIAGNOSIS AND TREATMENT WORKSHOP

Dr. Ethel Weinberg reported on the previous day's (December 4) workshop to discuss the proposal of Dr. Angelo M. May for a national system of computer-aided diagnosis and treatment information. The workshop was held as a result of a recommendation made at last June's Board meeting. Chaired by Dr. Schoolman, the workshop was attended by officials of the Health Resources Administration, Health Services Administration, experts from outside the government, and several staff members of the Lister Hill Center. The program proposed by Dr. May would provide practicing physicians with brief descriptions of the most current and authoritative information on treatment of a variety of diseases, made available on a 24-hour basis via a nationwide telecommunication system. The system would include succinct summaries on procedures, treatments, drug limitations, and other facets pertinent to medical care.

As reported by Dr. Weinberg, there were presentations by Dr. Donald A. B. Lindberg, Information Science Group, University of Missouri, and Dr. John N. Nelson, PROMIS Laboratory, Department of Medicine, University of Vermont, about more limited systems already in use. Dr. Norman W. Weissman of the Bureau of Health Services Research, HRA, said that the Bureau has money for research in this area, but not for development. Mr. Marmaduke D. McCloud of HSA expressed the concern that a government agency developing guidelines for treatment would "mandate" that treatment and put the government in the position of "calling the shots." Mr. Charles M. Goldstein of the Lister Hill Center told the workshop that the technology needed for such an information system is now available.

Dr. Weinberg summarized several points made in the discussions that followed these presentations: (1) Increased availability to physicians of "current and best" thinking on treatment would be desirable and a computer-based system would be more easily accessed and updated than other modes; (2) Help to physicians in differential diagnosis would be useful; (3) It would be difficult, but possible, to develop authoritative statements on diagnosis and treatment; (4) It is difficult to determine user acceptance of such a system; (5) There is a lack of leadership in this area--possible candidates for a leading role are NLM, AMA, HRA, HSA, PSRO, FDA, and commercial concerns.

The workshop, according to Dr. Weinberg, came to no consensus. The recommendations varied from NLM taking no action in this matter, all the way to NLM taking on responsibility for developing such a program immediately. Dr. Cummings' view, said Dr. Weinberg, was that the Library could assist as a "convener" of groups interested in such a program--that NLM could help in compiling bibliographies and in the area of computer technology--but that the Library should not be involved in preparing the data base or in the practice of medicine. Dr. Weinberg suggested two possibilities: (1) that the Regents might wish to communicate the need they see in this area with the appropriate Federal officials and request that the government take action, (2) that NLM convene a meeting of appropriate groups to map strategy for proceeding in this area. This means the Library would assume an active leadership role.

Following Dr. Weinberg's presentation, Captain Cox voiced his fear that some practitioners would abdicate responsibility for diagnosis and treatment to the machine. No "cookbook formula or authoritative pronouncement," he said, would be applicable to individual cases with sufficient frequency to warrant the risk.

In elaborating on his proposal, Dr. May said there is a need for something more than MEDLINE. A system is needed that is available to all practitioners --not just those with easy access to a MEDLINE terminal located in a medical school or major hospital. Telephone-based access, 24 hours a day, to competent medical knowledge (giving alternative modes of treatment and the most modern thinking on a subject) would be a great boon to the practicing physician. If a computer-based system with remote terminal access were too expensive, it would be possible to use WATS lines for simple telephone dial access to recorded information.

The Chairman wound up the discussion by declaring that the workshop session had been provocative and that Dr. May's proposed system has objectives that are unexceptionable. Dr. Hubbard added that at this time the Library's stance might be one of standing ready to provide the documentary resources for other groups to synthesize.

Following the call to order, the second day's session began with slides which Dr. Joseph F. Volker showed in connection with his remarks of the previous evening when, as the Regents' after-dinner speaker, he spoke on "Pasteur in Alabama." Among the slides were views of the Lawrence Reynolds Library, which presently houses a fine collection of historical writings in medicine and dentistry, and the Lister Hill Library, to which the Reynolds collection is soon to be transferred.

## XII. REPORT OF THE ASSOCIATE DIRECTOR FOR EXTRAMURAL PROGRAMS

As required at the first meeting of each fiscal year, Dr. Ernest M. Allen, NLM Associate Director for Extramural Programs, brought to the Regents' attention the Board's operating procedures, "Guidelines for Adjustments by Staff in Time or Amount of Grant Award," which were reaffirmed without revision.

Dr. Allen related to the Regents the essential features of the latest extension of the medical library assistance legislation, the "Health Services Research, Health Statistics, and Medical Libraries Act of 1974," signed into law on July 23, 1974: (1) the continuation of training grant authority, separate and apart from the NIH training grant authority; (2) the deletion of the construction grant authority; and (3) the merging of all NLM grant appropriation items into one, with program allocation prerogatives reserved to the Director.

He drew attention also to amendments to the 1966 "Freedom of Information Act." Under the revision, an unawarded grant application, together with related documents, is considered confidential and need not be released. When an award has been made, however, the application, as well as all subsequent reports and applications are available to the public. Summary sheets and project site visit reports will continue to be held in confidence. Any proposed refusal to provide grant application information must be approved at the Department level before disclosure.

The following items contained in the DRG Administrative Report were singled out for mention: (a) The National Research Service Act was signed on July 12, 1974, establishing a new three-year program of research training while continuing to honor commitments made under the old, or phased-out, NIH training programs.

The stipend starts at \$10,000 (old program stipends will conform) and ranges up to \$13,200, based on experience, with annual increments. Travel is authorized, but a clear need must be demonstrated before approval can be granted. Authorized predoctoral training will be implemented at NIH primarily through training grants; fellowships will be few. Despite frequent challenge, the payback provision has been retained with service alternatives offered. (b) On the protection of human subjects, Dr. Allen commented that he had encountered many negative reactions to the burdensome feature which requires that applications be reviewed by the local institution prior to submission, representing a substantial expenditure of time on applications of which 50-60 percent will not be approved. (c) Regarding the National Cancer Act Amendments of 1974, Dr. Allen observed with interest, in the light of the recent strong attack on the peer review system, that the official language requires that grant applications be reviewed "according to the current system and by peer groups now performing such review." (d) The President's Biomedical Research Panel has been assigned to review and assess NIH and NIMH research programs. Similar assays in the past have returned favorable reports. (e) Concerning inventions and patents, two suits are now pending in Federal court, seeking to invalidate DHEW institutional agreements.

Dr. Allen reported that 150 institutions have expressed interest in NLM's new program to train health scientists in computer technology. At present, the scope of the program provides for only a small number of grants, each of which will be limited to five or six trainees.

Dr. Allen announced that at the next meeting he expects to present results of the Improvement Grant Program evaluation and EP's recommendations for the program's future. He closed his remarks with an expression of appreciation to the Extramural Programs Subcommittee for sustained thoroughness, with particular thanks to Dr. Faye G. Abdellah and Dr. Ethel Weinberg, a recent Subcommittee appointee, who although unable to attend the December 4th session, provided cogent and helpful comments.

Mr. Arthur J. Broering, NLM Deputy Associate Director for Extramural Programs, referring to the elimination of the construction grant authority, conveyed the advice of NIH's general counsel that there be a corollary revocation by the Regents since, as a statutory function, they had initially recommended implementation of the construction grant program. Hearing no contrary view, the Chairman directed Mr. Broering to report to the NIH general counsel that the Board advises the rescission of the implementing regulations.

### XIII. RML STATUS REPORT

Recently named project officer for the ten Regional Medical Libraries (RML's), Mr. Broering announced that although a comprehensive review of the RML's will be presented to the Regents at the March or June 1975 meeting, he wished to report current developments: (1) Program Officers of EP's Division of Biomedical Information Support will henceforth be more closely involved with RML activities, making themselves available to assist in RML planning efforts and to assure that grant applications relate to a regional framework. (2) To

promote more effective regional planning, the Library has offered RML directors an opportunity to compete for supplemental funds for developing a regional model. Five have responded favorably. Despite limited funds, one or two awards are expected to be made within the next few months.

Although some attention has been given to anticipated information needs in general terms, Mr. Broering considers it essential that NLM work more closely with the emerging national health programs, e.g., the AHEC's and the PSRO's (Area Health Education Centers and Professional Standards Review Organizations) to assess their needs. He expects the Library's contract with the Association of Hospital Medical Educators to make an appreciable contribution.

MEETING CLOSED FOR REVIEW OF GRANT APPLICATIONS

#### XIV. GRANT APPLICATIONS: RESEARCH, RESOURCE, AND SPECIAL SCIENTIFIC PROJECTS

Dr. Roger W. Dahlen, Chief, Division of Biomedical Information Support, EP, called the Regents' attention to new grant application review criteria which have been developed for the benefit of both the initial review group and the applicant. He also mentioned that with the loss of authority to use the resource project grant application forms, a decision has been made to use the traditional NIH research application for NLM's resource project grant program, with adjustments to be made as necessary. He announced that Dr. Alvin E. Lewis, now Professor of Pathology at the University of California, Davis, in Sacramento, is the new chairman of the Biomedical Library Review Committee.

Before proceeding with the consideration of pending applications, Dr. Dahlen informed the Board of confidentiality and conflict-of-interest procedures. At the conclusion of the meeting, all appointed Regents signed a statement signifying that they had not participated in the discussion of any applications where conflicts of interest might occur.

Grant applications recommended for approval by the Board are included in the attached summary (Attachment "B"). Interim actions taken by EP Staff since the last meeting in June 1974 were noted.

#### XV. GRANT APPLICATIONS: PUBLICATION GRANT PROGRAM

Dr. Jeanne L. Brand, Chief, International Programs Division, EP, called to the Board's attention a staff summary analysis of 103 NLM publication projects funded from FY 1966 to FY 1974, and the resulting 121 publications of which the 28 titles in the Board Room exhibit were representative.

With a view to improving an already successful program, Dr. Brand presented for the Regents' consideration new guidelines for the Publication Grant Program, describing the kinds of projects eligible for support, spelling out the restrictions and priorities that apply, and providing more detailed instructions for applicants. It is the intent, Dr. Brand said, to continue to encourage publication projects dealing with the improvement of health-care delivery, with emerging trends in health research and practice, and with the history of medicine.



Some priority will be given to small-size grants and to grants requiring only publication subvention. The present procedure will be continued whereby a study section will evaluate applications for scientific merit and assign priorities on this basis; applications requiring special action will then be submitted to the Extramural Programs Subcommittee. The Board recommended approval of the new guidelines without change.

Dr. Brand proceeded with the presentation to the Board of pending publication grant applications.

#### XVI. OTHER BUSINESS

Learning that Mrs. Claire S. Marwick has accepted a new position at NLM which will broaden her experience in administration, the Board expressed regret that she would no longer look after the many needs of the members and wished her a satisfying future career. The following statement was approved for incorporation both in the minutes of the Board and in her official personnel file:

As Committee Management Officer, Claire S. Marwick has served the Board of Regents for approximately three years in a truly exemplary manner, at all times attentive to the needs of the members. The Board reluctantly accepts her decision to broaden her experience in a different type of work, to be accomplished in a position in the contract area of the National Library of Medicine.

Since this is her last meeting with the Board, the minutes of this meeting will express our enthusiastic thanks for her outstanding performance and for her numerous courtesies to individual Regents.

Brig. Gen. George E. Reynolds, who has been serving as permanent alternate for ex officio member Lt. Gen. Robert A. Patterson, announced that since he is about to undertake a new assignment, this would probably be his last meeting also. The Chairman expressed the Board's regret and wished him well in his new undertaking.

#### XVII. ADJOURNMENT

The meeting was adjourned at 12:15 p.m., on Friday, December 6, 1974, by Dr. Joseph F. Volker who took the chair for the last few minutes at Dr. Hubbard's request.

\* \* \* \* \*

Wednesday, December 4, 1974, 2:00 p.m. to 5:00 p.m. (EP Subcommittee)<sup>1/</sup>  
Thursday, December 5, 1974, 9:00 a.m. to 5:00 p.m.  
Friday, December 6, 1974, 9:00 a.m. to 12:15 p.m.


1/ List of attendees in Attachment "C"

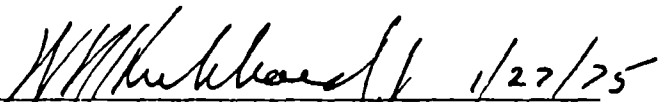
ACTIONS TAKEN BY THE BOARD OF REGENTS

1. The Board recommended that because of its legislative requirements for archival and historical preservation, as well as the heavy use made of its materials, the Library should have authority to require the fulfillment of appropriate specifications for the binding of its materials. This should not be subject to alteration by the specifications submitted by DHEW or another agency which does not have the same statutory requirements.
2. The Board recommended that the NLM Director be authorized to adjust charges to users of the Library's on-line services up to a level that would equal the total contract communications costs, with periodic reports to be made to the Board on the effects of such revised rates. The Library should increase its user fees if the present increase from \$6.00 to \$8.00 per hour does not reduce demands for service significantly.
3. In view of the elimination of construction grant authority from the latest revision of the medical library assistance legislation, the Board recommended rescission of regulations which the Board had established initially to implement the construction grant authority.
4. The Board recommended adoption without change of the new Publication Grant Program Guidelines.
5. The Board concurred with recommendations of the Extramural Programs Subcommittee on Research, Resource, and Publication grant applications and one Special Scientific Program application, with two exceptions in which modifications were made.
6. The Board expressed regret that Brig. Gen. George E. Reynolds would no longer be attending Board meetings as permanent alternate for Lt. Gen. Robert A. Patterson and wished him well in his new endeavors.
7. The Board expressed appreciation to Claire S. Marwick for her outstanding contribution to the Board in her capacity as Committee Management Officer.

\* \* \* \* \*

I hereby certify that, to the best of my knowledge, the foregoing minutes and attachments are accurate and complete.

  
Martin M. Cummings, M.D. (Date) 1/23/75  
Executive Secretary

  
W. N. Hubbard, Jr., M.D. (Date) 1/27/75  
Chairman

Robert B. Mehnert  
Chief  
Office of Inquiries and  
Publications Management

BOARD OF REGENTS OF THE NATIONAL LIBRARY OF MEDICINEHAIRMAN

URBARD, W. N., Jr., M.D. (76)  
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National Science Foundation  
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Chief Medical Director  
The Veterans Administration  
Washington, D.C. 20420  
Alt: Dr. Bill M. Domm

CUSTIS, Donald L., Vice Adm., MC, USN  
Surgeon General  
Department of the Navy  
Washington, D.C. 20372  
Alt: Capt. J. William Cox

FHRLICH, S. Paul, Jr., M.D.  
Acting Surgeon General  
U.S. Public Health Service  
Rockville, Maryland 20852  
Alt: Dr. Faye G. Abdellah

MUMFORD, L. Quincy, LL.D.  
The Librarian of Congress  
10 First Street, S.E.  
Washington, D. C. 20540

PATTERSON, Robert A., Lt. Gen., USAF, MC  
Surgeon General  
Department of the Air Force  
Forrestal Building  
Washington, D.C. 20314  
Alt: Brig. Gen. George E. Reynolds

TAYLOR, Richard R., Lt. Gen., MC, USA  
The Surgeon General  
Department of the Army  
Washington, D.C. 20314  
Alt: Col. Mims C. Aultman

11/5/74

ATTACHMENT "B"

APPLICATIONS RECOMMENDED FOR APPROVAL BY COUNCIL  
(Arranged numerically by program)

COUNCIL DATE: November 1974

INSTITUTE/DIVISION:	NATIONAL LIBRARY OF MEDICINE		
APPLICATION NUMBER	SHORT TITLE		AMOUNTS RECOMMENDED
2 R01 LM01785-03	SYNTHESIS OF LITERATURE ON MOSQUITOES	03	17,680
		04	17,730
2 R01 LM01842-03	PREPARATION OF BIOGRAPHY OF WALTER BRADFORD CANNON	03	16,375
		04	17,381
1 R01 LM02355-01	DIAGNOSIS AND TREATMENT OF ASYLUM INMATES 1824-1860	01	41,392
		02	64,778
		03	10,247
1 R01 LM02420-01	PUBLICATION OF ANATOMICAL NOMENCLATURE OF BIRDS	01	13,003
		02	20,721
1 R01 LM02429-01	EXPERT VIEWS ON CHILD REARING, 1900-1950	01	15,086
		02	16,849
1 R01 LM02435-01	ANATOMY AND PHYSIOLOGY IN 17th CENTURY ENGLAND	01	13,089
		02	7,929
1 R01 LM02442-01	PHYSICIANS AND PUBLIC HEALTH IN RUSSIA, 1856-1906	01	16,560
		02	17,960
1 R01 LM02456-01	INFORMATION NEEDS OF PRACTICING PHYSICIANS	01	74,055
		02	61,912
		03	43,869

APPLICATIONS RECOMMENDED FOR APPROVAL BY COUNCIL - DUAL REVIEW 1/  
(Arranged numerically by program)

INSTITUTE/DIVISION: NATIONAL LIBRARY OF MEDICINE

COUNCIL DATE: NOVEMBER 1974  
AMOUNTS

APPLICATION NUMBER	SHORT TITLE	RECOMMENDED
2 RO1 HL10948-09	DUAL: LM	09 12,649
		10 13,194
EARLY HISTORY OF THE CONCEPT OF HEART FAILURE		11 13,765
		12 14,365
1 RO1 MH25968-01	DUAL: LM	01 5,825
MENTAL HEALTH ISSUES OF LIVING OVERSEAS		02 3,978

1/ Approval recommendations are not final but are the basis upon which subsequent BID determinations and negotiations will determine final awards.

APPLICATIONS RECOMMENDED FOR APPROVAL BY COUNCIL 1/  
(Arranged numerically by program)

COUNCIL DATE: NOVEMBER 1974

INSTITUTE/DIVISION; NATIONAL LIBRARY OF MEDICINE

APPLICATION NUMBER	SHORT TITLE	AMOUNTS RECOMMENDED
1 R01 LM02457-01		01 30,955
		02 31,606
1 R01 LM02460-01	A NEW APPROACH TO ORGANIZING BIOMEDICAL KNOWLEDGE	01 91,847
	MEDICAL LIBRARY MINICOMPUTER SYSTEM	02 76,458

1/ Approval recommendations are not final but are the basis upon which subsequent BID determinations and negotiations will determine final awards.

APPLICATIONS RECOMMENDED FOR APPROVAL BY COUNCIL  
(Arranged numerically by program)

INSTITUTE/DIVISION: NATIONAL LIBRARY OF MEDICINE

COUNCIL DATE: NOVEMBER 1974

APPLICATION NUMBER	SHORT TITLE	AMOUNTS RECOMMENDED
1 K10 LM00001-01	THE SPECTRUM OF HEPATOTOXICITY	01 52,630

1/ Approval recommendations are not final but are the basis upon which subsequent BID determinations and negotiations will determine final awards.

APPLICATIONS RECOMMENDED FOR APPROVAL BY COUNCIL  
(Arranged numerically by program)

COUNCIL DATE: November 1974

INSTITUTE/DIVISION:	NATIONAL LIBRARY OF MEDICINE	APPLICATION NUMBER	SHORT TITLE	AMOUNTS ,RECOMMENDED
2	G08	LM01258-04	HOSPITAL LIBRARY DEVELOPMENT SERVICES	04 11,656
3	G08	LM01507-03S1	MEDICAL LIBRARY RESOURCE PROJECT SUPPORT	03S1 58,231
1	G08	LM01738-01A1	ESTABLISHMENT OF AV CENTER IN NURSING SCHOOL (LIBRARY)	01A1 29,250 02 20,500 03 20,900
1	G08	LM02433-01	LIBRARY RECLASSIFICATION AND OUTREACH PROGRAM	01 33,403 02 2,350
1	G08	LM02445-01	BIOMEDICAL JOURNAL SELECTION MODEL	01 23,253 02 26,111
1	G08	LM02446-01	CHILDRENS HOSPITAL MED CTR AV LEARNING (RESOURCE ROOM)	01 3,338
1	G08	LM02448-01	IMPLEMENTATION OF UCLA ON-LINE SERIALS ( CONTROL SYSTEM)	01- 39,429 02 10,539

1/ Approval recommendations are not final but are the basis upon which subsequent BID determinations and negotiations will determine final awards.



B O A R D O F R E G E N T S

Extramural Programs Subcommittee Meeting

December 4, 1974

A T T E N D E E S

Subcommittee Members present:

Dr. Susan Y. Crawford  
Mrs. Bernice M. Hetzner  
Dr. Joseph F. Volker

Subcommittee members absent:

Dr. Faye G. Abdellah  
Dr. Ethel Weinberg

NLM staff present:

Dr. Ernest M. Allen, Associate Director for Extramural Programs  
Mr. Arthur J. Broering, Deputy Associate Director for Extramural Programs  
Mrs. Frances H. Howard, Special Assistant to the Associate Director, EP  
Dr. Jeanne L. Brand, Chief, International Programs Division, EP  
Dr. Roger W. Dahlen, Chief, Division of Biomedical Information Support, EP  
Mrs. Helen S. Bennison  
Mrs. Ruth E. Bortz  
Mrs. Karin K. Colton  
Mrs. Doris J. Doran  
Miss Maureen J. Malone  
Mrs. Claire S. Marwick  
Mrs. Kathleen Nichols  
Mrs. Marguerite L. Pusey  
Mr. Richard T. West  
Mr. Randall Worthington  
Dr. Galina Zarechnak