

DEPARTMENT OF HEALTH AND HUMAN SERVICES  
NATIONAL INSTITUTES OF HEALTH  
NATIONAL LIBRARY OF MEDICINE  
Bethesda, Maryland

A G E N D A

96th Meeting of the

BOARD OF REGENTS

9:00 a.m., Feb. 28-Mar. 1, 1991

Board Room  
Mezzanine of  
National Library of Medicine

MEETING OPEN: From 9:00 a.m. to 4:35 p.m. on February 28 and from 9:00 a.m. to adjournment on March 1.

MEETING CLOSED: From 4:35 p.m. to 5:10 p.m. on February 28 for the review of grant applications.

1. CALL TO ORDER AND INTRODUCTORY REMARKS Dr. Don E. Detmer
2. REMARKS FROM THE SURGEON GENERAL'S OFFICE Dr. Dushanka Kleinman
3. CONSIDERATION OF SEPTEMBER MINUTES TAB I Dr. Don E. Detmer  
(Agenda Book)
4. FUTURE MEETING DATES:

Spring Meeting: June 20-21, 1991 (Th-F)--CONFIRMED  
Fall Meeting: Sept. 26-27, 1991 (Th-F)--CONFIRMED  
Winter Meeting: Jan. 30-31, 1992 (Th-F)--PROPOSED

(Subcommittees meet, when necessary, the day before the full Board.)

PLEASE NOTE: American Library Assoc. Midwinter Meeting  
(Potential conflicts Jan. 25-30, San Antonio  
w/Jan./Feb. 1992 AAAS Annual Meeting, Feb. 7-12, Chicago  
meeting dates.)

2/20/91

5. REMARKS BY THE DIRECTOR, NLM TAB II Dr. Donald A.B. Lindberg  
Discussion Board Members  
COFFEE BREAK
6. TOXICOLOGY AND THE ENVIRONMENT: TAB III Dr. Elliot Siegel  
LONG-RANGE PLANNING Dr. Henry Kissman  
Dr. Don E. Detmer,  
Discussant  
Discussion Board Members
7. REPORT ON BOARD OF SCIENTIFIC COUNSELORS' TAB IV Mr. Gregory H. Hamm  
MEETING Dr. Ruth M. Davis,  
Discussant  
LUNCHEON CATERED IN CONFERENCE ROOM "B" 12:15- 1:00
8. REMARKS BY THE ACTING DIRECTOR, NIH Dr. Willian F. Raub
9. OUTREACH ACTIVITIES TAB V Dr. Elliot Siegel  
A. Projects in the Pacific Northwest Tab A Ms. Eve Ruff  
B. Loansome Doc Testing and Tab B Ms. Eve-Marie Lacroix  
Demonstration Ms. Beryl Glitz  
Ms. Rachael K. Anderson  
Dr. Lois E. DeBakey,  
Discussants  
C. Internet Access for Medlars Tab C Dr. Aaron B. Navarro  
Dr. Daniel R. Masys  
Dr. Robert E. Kahn,  
Discussant  
Discussion Board Members

COFFEE BREAK

- 10. INDEXING ACTIVITIES TAB VI Mr. Sheldon Kotzin  
Mr. Joseph H. Howard,  
Discussant
- Discussion Board Members

- 11. REPORT FROM EXTRAMURAL PROGRAMS TAB VII Dr. Milton Corn  
Extramural Programs  
Subcommittee,  
Discussants
- A. NIH Plan for Managing the Costs  
of Biomedical Research Tab A
- B. Budget and Funding Plans Tab B
- C. Review of Board Operating Procedures  
"Guidelines for Adjustments by Staff  
in Time or Amount of Grant Award" Tab C

Discussion Board Members

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MEETING CLOSED FOR THE REVIEW OF GRANT APPLICATIONS, FEBRUARY 28, 4:35 P.M.

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- 12. REVIEW OF GRANT APPLICATIONS (Application Workbook) Dr. Roger W. Dahlen
- (Conflict-of-interest instructions in front of workbook for your information  
and review.)

- RESEARCH TAB I
- A. Medical Informatics Tab A
- B. Biotechnology Tab B
- C. Library and Information Science Tab C

RESEARCH RESOURCE APPLICATION TAB II

- RESOURCE TAB III
- A. Information Systems Tab A
- B. Information Access Tab B
- C. IAIMS Tab C

SPECIAL SCIENTIFIC PROJECT APPLICATION TAB IV

- CONFERENCE APPLICATION TAB V
- PUBLICATION GRANT APPLICATIONS TAB VI
- SUMMARY LIST OF DISAPPROVED APPLICATIONS TAB VII
- INTERIM ACTIONS TAB VIII

R E C E S S \* \* \* \* \*

DINNER . . . . .BETHESDA NAVAL OFFICERS' CLUB  
 Cocktails . . . . . 6:30 p.m. Bethesda, Maryland  
 Dinner . . . . . 7:30 p.m. "PATIO ROOM"

SPEAKER: Dr. Steven C. Beering  
 President, Purdue University  
 and Member, Board of Regents

TITLE: "The Cave, The Wall, and The Millennium."

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R E C O N V E N E: FRIDAY, 9:00 A.M., BOARD ROOM

- 13. UNIFIED MEDICAL LANGUAGE SYSTEM'S TAB VIII Dr. Donald A.B. Lindberg  
 KNOWLEDGE SOURCES: Tools for Building Dr. Lawrence H. Cohn,  
 Better User Interfaces Dr. Alvy Ray Smith,  
 Discussants  
 Discussion Board Members

- 14. REPORT ON IMPAG MEETING TAB IX Dr. Richard K.C. Hsieh  
 Mr. Kent A. Smith  
 Discussion Board Members

COFFEE BREAK

- |     |   |              |   |
|-----|---|--------------|---|
| 15. | IMPROVING NLM'S INFORMATION SERVICES TO HOSPITALS | <u>TAB X</u> | Dr. Thomas E. Bryant<br>Mrs. Lois Ann Colaianni |
|     | Discussion  |              | Board Members                                   |
| 16. | APPOINTMENT OF THE NOMINATING COMMITTEE           |              | Dr. Don E. Detmer                               |
| 17. | F.D.R. SPEECH AND PHOTO VIDEODISC                 |              | Dr. Daniel R. Masys                             |
| 18. | OTHER BUSINESS                                    |              | Dr. Don E. Detmer                               |
| 19. | ADJOURNMENT                                       | 12:00        | Dr. Don E. Detmer                               |

**DEPARTMENT OF HEALTH AND HUMAN SERVICES**

**NATIONAL INSTITUTES OF HEALTH  
NATIONAL LIBRARY OF MEDICINE**

**BOARD OF REGENTS  
MINUTES OF THE 96TH MEETING  
FEBRUARY 28-MARCH 1, 1991**

**BOARD ROOM  
NATIONAL LIBRARY OF MEDICINE  
BETHESDA, MARYLAND**

**DEPARTMENT OF HEALTH AND HUMAN SERVICES  
PUBLIC HEALTH SERVICE**

**THE BOARD OF REGENTS OF THE NATIONAL LIBRARY OF MEDICINE**

**Minutes of Meeting  
February 28-March 1, 1991**

The Board of Regents of the National Library of Medicine was convened for its ninety-sixth meeting at 9:00 a.m. on Thursday, February 28, 1991, in the Board Room of the National Library of Medicine, Bethesda, Maryland. Dr. Don E. Detmer of the University of Virginia chaired the meeting. In accordance with P.L. 92-463 and the Determination of the Director, NIH, as announced in the Federal Register on February 1, 1991, the meeting was open to the public from 9:00 a.m. to 4:35 p.m. on February 28 and from 9:00 to 11:45 a.m. on March 1. The meeting was closed from 4:35 to 4:50 p.m. on February 28 for the review, discussion, and evaluation of grant applications. A Board roster is enclosed under Attachment A.

**Board members present were:**

Dr. Don E. Detmer, Chair  
Ms. Rachael K. Anderson  
Dr. Steven C. Beering  
Dr. Mary E. Clutter  
Dr. Lawrence H. Cohn  
Dr. Ruth M. Davis

Dr. Lawrence J. DeNardis  
Dr. Robert E. Kahn  
Dr. James W. Holsinger  
Mr. Joseph H. Howard  
Dr. Alvy Ray Smith

**Alternates to ex officio members present were:**

Ms. Wendy Carter, representing Dr. James W. Holsinger, Jr. (part of meeting)  
Dr. William R. Drucker, representing the Dean of the U.S.U.H.S.  
Col. Howard E. Fauver, representing Lt. Gen. Frank F. Ledford, Jr.  
Capt. David S. Kemp, representing Vice Admiral James A. Zimble.  
Col. Charles K. Maffet, representing Lt. Gen. Monte B. Miller.  
Capt. Kathleen A. McCormick, representing Dr. Antonia C. Novello.  
Dr. Richard E. Rowberg, representing Dr. James H. Billington.

**Unable to attend:**

Dr. Ronald E. Cape  
Dr. Jeanne Spurlock

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. 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, also constitutes and serves as the National Libraries Assistance Advisory Board.

**National Library of Medicine staff members attending this meeting included:**

Dr. Donald A. B. Lindberg, Director  
Mr. Kent A. Smith, Deputy Director  
Dr. Harold M. Schoolman, Deputy Director for Research and Education  
Dr. Jeanne Brand, Chief, International Programs Branch, EP  
Mr. Kenneth Carney, Executive Officer, OD  
Dr. Milton Corn, Acting Associate Director, EP  
Dr. George Cosmides, Deputy Associate Director, SIS  
Dr. Roger W. Dahlen, Chief, Biomedical Information Support Branch, EP  
Ms. Becky Lyon-Hartmann, Regional Medical Library Coordinator  
Dr. George F. Hazard, Chemical Information Services Section, SIS  
Dr. Richard Hsieh, Director, International Programs, OD  
Ms. Betsy Humphreys, Deputy Associate Director, LO  
Mr. Charles R. Kalina, Special Projects Officer, OD  
Dr. Lawrence C. Kingsland III, Chief, Computer Science Branch, LHNCBC  
Dr. Henry M. Kissman, Associate Director, SIS  
Mr. Sheldon Kotzin, Chief, Bibliographic Services Division, LO  
Dr. David J. Lipman, Director, National Center for Biotechnology Information  
Mr. James S. Main, Audiovisual Program Development Branch, LHNCBC  
Dr. Daniel R. Masys, Director, Lister Hill National Center for Biomedical Communications  
Mr. Robert B. Mehnert, Chief, Office of Inquiries and Publications Management, OD  
Mr. David Nash, EEO Officer  
Dr. Elliot R. Siegel, Assistant Director for Planning and Evaluation, OD  
Mr. Richard T. West, Chief, Office of Program Planning and Evaluation, EP

**Others present included:**

Dr. William F. Raub, Acting Director, NIH  
Dr. Dushanka A. Kleinman, Surgeon General's Office, PHS  
Dr. Thomas E. Bryant, President, Friends of the National Library of Medicine  
Dr. Lois E. DeBakey, Professor of Scientific Communications, Baylor College of Medicine, Consultant to Board of Regents  
Ms. Beryl Glitz, Associate Director, Louise Darling Biomedical Library, University of California, LA  
Mr. Gregory H. Hamm, Director, Molecular Biology Computing Laboratory, Waksman Institute, and Member, Board of Scientific Counselors, NLM  
Mr. Keith Krueger, Exec. Director, Friends of the National Library of Medicine  
Ms. Eve Ruff, Outreach Services Librarian, Pacific Northwest Regional Health Sciences Library Service



## **I. OPENING REMARKS**

Dr. Don E. Detmer, Chairman, welcomed the Regents to the ninety-sixth meeting of the Board of Regents of the National Library of Medicine. He introduced newly appointed Regents Dr. Lawrence J. DeNardis and Dr. Robert E. Kahn; Dr. Lois E. DeBakey, consultant to the Library, and guest, Mr. Gregory H. Hamm, member of the Board of Scientific Counselors, LHCNBC. Dr. Detmer noted with sadness the passing of John A. Gronvall, M.D., former Regent.

## **II. REMARKS FROM THE SURGEON GENERAL'S OFFICE**

Dr. Dushanka A. Kleiman, representing the Surgeon General's Office, described the Surgeon General's recent activities with regard to several "epidemics." Dr. Novello co-chairs the Panel on Women, Adolescents, and Children with HIV Infection and AIDS. A major report--a guide for local and state program administrators--is being completed on family-centered comprehensive care for children with HIV infection. There will also be a related symposium at the upcoming Seventh International AIDS Conference. Another epidemic--measles--has also been of wide concern. There were more than 90 deaths and 26,000 cases in 1990. Dr. Novello's office is moving toward a national coalition of volunteer organizations that will address this problem. She will emphasize the measles epidemic when she keynotes the American Academy of Pediatrics in March. Injury prevention is an escalating concern. The Surgeon General will be specifically addressing children's injuries at an upcoming Surgeon General's Workshop on Farm Safety. Risk factor reduction is another area of current concern--especially alcohol and tobacco as risk factors. The danger posed by fortified wines is one theme; another is adolescent misuse of alcohol. In May an interagency meeting on tobacco and health will focus on passive smoking. Finally, "special populations" are receiving much attention, especially children, minorities (particularly Hispanics), and those needing organ or tissue transplants. There will be a Surgeon General's Workshop in July that will deal with ways to promote organ donations. The Public Health Service is also responding to six national education goals set by the White House by working on the first, the "school-readiness goal," by improving the health of children before they enter school.

## **III. CONSIDERATION OF MINUTES OF PREVIOUS MEETING**

The Regents approved without change the minutes of the September 27-28, 1990, meeting.

## **IV. DATES OF FUTURE MEETINGS**

The Board will meet next on June 20-21, 1991. The fall meeting, on September 26-27, 1991, was confirmed. The meeting for next winter was set for January 30-31, 1992. (In the meantime, the fall dates were changed to October 23-24, 1991.)

## **V. REPORT OF THE NLM DIRECTOR**

Dr. Donald A. B. Lindberg reported on recent NLM budget appropriations, from \$85.6 million in FY 1990, to \$91.4 million in FY 1991. The President's budget for NLM in FY 1992 is \$100.6 million. Dr. Lindberg briefly discussed the budget in terms of the current emphasis on outreach. On personnel matters, the Director reported that NLM's ceiling for full-time permanent positions is now 550. Mr. John Anderson, Director of NLM's Office of Computer and Communications Systems, has left the Library for a position with BIOSIS. Dr. Aaron Navarro will be Acting Director of that Office.

Dr. Lindberg reported briefly on a number of legislative matters affecting the NLM. Several NLM programs--the grants program and the National Center for Biotechnology Information--require reauthorization by the Congress this year. The pending renewal of the Paperwork Reduction Act, reported on previously to the Board, is still of concern to the Library. Essentially, the bill in the House last year would have eliminated any agency control over the public use of its database. NLM is concerned that it would not be able to exercise quality control over MEDLINE and the other NLM databases that are leased to private information vendors. NLM will be following the action of the Congress this year with great interest.

Dr. Lindberg reported in some detail on the High Performance Computing and Communications (HPCC) initiative. He outlined especially how the high-speed network (NREN), dubbed the National Research and Education Network, is evolving. NLM's role in the HPCC involves software technology and algorithms (in biotechnology, for example), establishing gateways for the medical community to use the NREN, to push the development of the Unified Medical Language System and to continue grant support for the Integrated Academic Information Management Systems and for medical informatics fellowships and training. Dr. Lindberg, using slides, showed how high-capacity, high-speed networks would be utilized in various applications at health professional schools--from patient charts to high-resolution digital images. He emphasized the use of increased computing capability and high-speed networks in handling the extremely large volumes of data resulting from molecular biology research and from digitized medical images. [Note: Later in the meeting the Regents unanimously passed a resolution to be sent to the HHS Secretary urging his continued support for the NLM as the Department's lead agency in the area of High Performance Computing and Communications - see Attachment B.]

Dr. Lindberg reported on the recent development of "clinical alerts." These are instances when an NIH institute decides that the dramatic results of a clinical trial justify early release of the information to the practitioner community--even before it has been published in a journal. NIH held a meeting in January to discuss the circumstances when such a course is justified and to hear from journal editors about their concerns. At that meeting, Dr. Lindberg offered NLM's assistance in disseminating clinical alerts. This could be done by putting an abbreviated alert up on NLM's online MEDLARS network. Thus, the announcement would be quickly available to the more than 40,000 members of NLM's online network. Coincidentally, two days after that NIH meeting, the National Institute of Child Health and Human Development requested

NLM's assistance in distributing a clinical alert on pediatric AIDS. In addition to the Institute's press conference and direct mailing of the announcement, the NLM put up, within 24 hours, a 70-line announcement (the maximum length news note) on MEDLARS. Dr. Lindberg distributed a copy of a second clinical alert, on carotid endarterectomy, that was mounted on the system just yesterday (February 27). He noted that in addition to putting these clinical alerts online, longer versions of the announcements are faxed by NLM to the 135 "resource" libraries in the Regional Medical Library Network (primarily at medical schools) and mailed to all 3,300 Network member libraries. Because of time constraints, the first clinical alert was put up online, faxed, and mailed by NLM without first preparing the Network members; NLM will be working with them to encourage their redistribution of the information within their institutions. The Library also plans to make changes in its system that will make the announcements more visible on MEDLARS and easier to retrieve.

Dr. Lindberg concluded his presentation by reporting briefly on (1) NLM's plans to price its databases for contractors who then produce and sell CD-ROM products; (2) the joint resolution on permanent paper; and (3) NLM's agreement with the Agency for International Development concerning the development of a national library of medicine for Egypt.

## **VI. TOXICOLOGY AND THE ENVIRONMENT---LONG-RANGE PLANNING**

Dr. Elliot Siegel, Assistant Director for Planning and Evaluation, introduced the topic by briefly recounting the history of NLM's involvement with toxicological information. Over the last two decades or so, the Library has created a series of databases of toxicology and related information, frequently in concert with other Federal agencies that had regulatory responsibilities. This growth in toxicological databases has been unplanned, Dr. Siegel said. The Planning Panel to be convened at the behest of the Board of Regents will examine scientific and societal concerns and needs dictated by changes in the global environment. The Panel will seek to identify challenges and opportunities for the Library and plot a course of action. There is an ever-evolving variety of audiences and needs for this information, ranging from the scientist, to the city hall planner, to the community activist. He noted that the Library's 1986 Long-Range Plan has been an extremely useful tool for guiding the Library. Toxicology will be the third area to be examined as a follow-on to the original Plan. The first two were outreach and digital imaging.

Following these introductory remarks, Dr. Henry Kissman, NLM Associate Director for Specialized Information Services, gave the Board an overview of the present state of the toxicology services. There are two basic kinds of data files being offered--bibliographic (for example, TOXLINE) and factual (such as the Hazardous Substances Data Bank). Factual databases provide the user with facts or data, not just bibliographic sources. Some of these files are on the NLM main ELHILL system along with MEDLINE and the Library's other major databases. Most of the toxicology files, however, are now on a contractor-operated software and hardware facility known as TOXNET. An online survey of TOXNET users is planned to find out about the uses to which the information is put; the results of the survey will be available

to the Panel members. Currently, there is heavy usage by industry and by Federal regulatory agencies. One relatively new file, EPA's Toxic Chemical Release Inventory (TRI), is also intended to serve individual users and public interest groups. Over time, Dr. Kissman said, there has been a change in the kind of toxicological data NLM has provided: in the sixties, the emphasis was on adverse drug reactions and interactions. Gradually, the focus shifted to the long-term effects of chemicals and to environmental and occupational exposure effects. Dr. Kissman cited specifically several recent laws dealing with hazardous substances and the environment and their consequences for NLM's Toxicology Information Program. He briefly described a number of the interagency arrangements into which NLM has entered as a means of obtaining information to put online over the ELHILL and TOXNET networks. On the positive side, such arrangements lead to efficient use and sharing of government resources; on the negative side, NLM has become partially dependent on the resources of other agencies for developing and maintaining certain services. Finally, Dr. Kissman described several reports being prepared to help the Planning Panel in its deliberations: a history of the Toxicology Information Program and NLM's plans to integrate its chemical and toxicological files into a relational database.

Dr. Siegel then presented to the Board a draft of the charge that might be given to the Planning Panel. The charge includes identifying the needs of the various user communities for toxicological and environmental information, how well these needs are now being met, NLM's role, opportunities in this area NLM should capitalize on, and what resources NLM is likely to require to fulfill its role. The Planning Panel will probably meet three times. A list of candidate panel members is now being assembled.

Dr. Detmer said that the central question before the Board is, what are the boundaries of responsibilities and interests of the NLM. He asked the Regents how they wished to relate to the planning process. He also echoed Dr. Kissman's concern about the uncertainty of relying on the resources of other Federal agencies. Dr. Lindberg said that the Board should balance its involvement with the process--on the one hand helping to set the boundaries and keeping tabs on the planning process and, on the other, not becoming so closely involved with the process that the Board cannot receive and act on the final report in an objective manner. In the past, he said, all members of the Board were invited to all planning sessions; in practice, one member of the appropriate Board subcommittee attended. Dr. Lindberg added that the Library would appreciate any nominations to the Panel that the Board might have, especially candidates from the public sector and from the international community. Dr. Beering commented that, insofar as the NLM deals closely with Federal regulatory agencies in this area, it should be careful not to be perceived as having a role in the actual regulation of chemical substances.

## **VII. LHC BOARD OF SCIENTIFIC COUNSELORS**

Mr. Gregory Hamm, a member of the Lister Hill Center Board of Scientific Counselors (BOSC), reported to the Regents on the last several meetings (May and October 1990) of that Board. He said that at the May meeting the BOSC reviewed the Expert Systems Program,

including the AI/RHEUM project. The Board strongly recommended that AI/RHEUM be moved out into actual clinical use for evaluation. In a second project, the Board felt that the CTX (Criterion Table Expert System Shell) delivers impressive performance and it enthusiastically supported further development. The members suggested that CTX be ported to other platforms--that it should not be confined to the PC. AI/COAG, a hemostatic expert system, and COACH, an expert systems enhancement to Grateful Med, were also reviewed. The Board agreed with staff recommendations that the former be shifted to collaborators at Yale; the latter will benefit from work now being done for the Unified Medical Language System and thus will no doubt bear fruit that cannot be foreseen yet. The goal of another project, the Natural Language Systems program, is to combine syntactic analysis methods with structured domain knowledge in biomedicine to yield effective analyses of natural language queries. Although this is an extremely difficult undertaking, the progress so far has been impressive. The Board recommended that the project would benefit from a clearer definition of middle-term goals and from special attention to determining how to evaluate its effectiveness. At the Board's second meeting in October, two projects were reviewed. The first, the Computer-Assisted Curriculum Delivery System, has been very successful. The Board recommended that the impressive image database itself ought to be viewed as the primary product, along with a set of courseware tools developed for their use and perhaps sample applications. This would encourage faculty members to take the package and adapt it to their own needs. The final project reviewed by the BOSC was the new System for Automated Interlibrary Loan (SAIL), previously described to the Board of Regents. Mr. Hamm said that the system, as envisioned, is an impressive example of engineering discipline and shows promise of being a model collaboration between the Lister Hill Center and Library Operations. The BOSC was enthusiastic about the project's potential and they had suggestions about the document capture workstation and the resolution of the document images.

Following Mr. Hamm's presentation, Dr. Ruth Davis commented on two aspects: the role of the Lister Hill Center and the manner in which research projects are selected. She said that she feels that the LHC has a proper balance of projects between those that are "technology-push" and "user-pull." Technology-push is exemplified by the LHC's automated curricula and teaching projects; user-pull by the several LHC projects involving digital images. She suggested specifically that NLM would do well to "ride-the-bow" wave in imaging created by the entertainment industry. Where does the Lister Hill Center fit in the spectrum from research, to development, to product design, to testing (first friendly simulation, then "adversarial" acceptance testing of a product), and finally to market? Dr. Davis suggested that the LHC might want to formalize where it is in that spectrum with regard to each of its projects. The three major areas of LHC involvement represent a good mix of technology push and user pull: the imaging projects, the expert systems projects, and the electronic delivery of information.

## **VIII. REPORT OF THE NIH ACTING DIRECTOR**

Dr. William Raub, NIH Acting Director, briefed the Board on the state of the proposed NIH

budget for 1992. The request is for an increase of six percent, from approximately \$8.3 billion to \$8.7 billion. Since domestic spending in the aggregate is to be limited to a three percent growth in 1992, NIH will fare relatively well. NIH plans to increase by 8.8 percent the amount dedicated to research project grants. Selectively, components of NIH will be granted an increase greater than six percent; NLM is one of these. Dr. Raub is optimistic that the proposed budget will be well received in the Congress. He noted that NIH is trying to "rebalance" support for the NLM after a decades-long emphasis on research grants. In response to prompting from the Congress, NIH has prepared a long-term financial management plan that is now undergoing review. Dr. Raub briefly described the major components of the plan. He mentioned also the High Performance Computing and Communications initiative, in which NLM is the lead NIH (and HHS) agency. There is a modest increment in the NLM budget for this activity on behalf of all of NIH.

## **IX. OUTREACH ACTIVITIES**

Dr. Elliot Siegel, NLM Assistant Director for Planning and Evaluation, briefly introduced a three-part presentation to inform the Board about recent activities in the area of outreach. The first speaker, Ms. Eve Ruff, Outreach Services Librarian at the Region 6 (Pacific Northwest), described her work in bringing to health professionals in that area (which includes Alaska) the word about modern information retrieval--especially MEDLINE access via Grateful Med. Ms. Ruff described the "Transportable Electronic Library Enhancement Project" (TELE). The project's goal was to reduce the professional isolation felt by rural physicians by introducing them to online database searching. This would allow them to have the same access to the biomedical literature as their colleagues in populated centers. Ms. Ruff described how, since 1988, she has traveled extensively throughout the Region, demonstrating to a variety of health professionals how they can have access in their remote settings. She also offers consultation and follow-up services to them on all their microcomputing needs. The TELE project was funded through the Regional Medical Library as a special enhancement--originally as a two-year demonstration project. It is completing its third year, now as a full-time, continuing project. This coming May, it will become an integral and permanent part of the RML 6 program. Ms Ruff showed slides of the remote sites of her field trips and described how, over the last three years, she organized training sessions for more than 900 health professionals.

Ms. Eve Marie Lacroix, Chief of NLM's Public Services Division, introduced the topic of field-testing the Loansome Doc service that will soon be introduced within the RML Network. Loansome Doc will allow the Grateful Med user to enter an order into the DOCLINE system for a photocopy of any MEDLINE reference retrieved. She briefly described DOCLINE, NLM's interlibrary loan request and routing system for journal articles. Ms. Lacroix, assisted by Martha Fishel, then did a live demonstration of Loansome Doc for the Board, describing each step of the system from setting up the defaults, to retrieving references using Grateful Med, to placing an order for paper copies of selected articles. Articles may be sent by mail or fax to the requestor, or held for pick-up. Loansome Doc will be implemented, in Regions 6 and 7, beginning in May. By the end of the year, all Grateful Med users in the nation will have it

available to them.

Following this background information and demonstration, Ms. Beryl Glitz of the Region 7 RML (Pacific Southwest, headquartered at UCLA), described a three-month test of Loansome Doc with 59 (of about 650) Grateful Med users in Arizona, Nevada, Hawaii, and part of California. These users were each paired with a library. The participating 57 libraries received a total of 703 requests for individual articles via Loansome Doc. The requestors split almost evenly between requesting delivery by mail and having the articles held for pick-up. There were relatively few requests for delivery by fax. Ms. Glitz said that the health professionals were pleased with the service and that the librarians were relieved that they were not inundated with requests. The consensus was that the software was easy to use and the procedures well thought out.

After the presentations, Dr. Lois DeBakey emphasized the importance of making the system available also to Grateful Med Macintosh users and to allow requests for documents for references retrieved from other NLM databases, for example, AIDSLINE. In response to her questioning, Ms. Glitz said that fax copies were sometimes provided within two hours of a request, but more typically within 24 hours. Dr. DeBakey encouraged the Library to vigorously publicize the new service.

Board member Rachael Anderson shared Dr. DeBakey's enthusiasm for Loansome Doc. Ms. Anderson said that when the program was first talked about, there were many within the library community who felt that there would be an avalanche of requests; the testing has dispelled that notion and librarians should prepare for a moderate initial load. The TELE project described by Ms. Ruff and Loansome Doc are both examples of the great potential for outreach to remote health professionals.

The third outreach topic, Internet access for MEDLARS, was presented by Dr. Aaron Navarro, Acting Director of Office of Computer and Communications Systems, Dr. Daniel Masys, Director of the Lister Hill Center, and colleagues from the National Institute of Allergy and Infectious Diseases, who demonstrated the test Internet link. Dr. Navarro described briefly the current networking environment for NLM databases--primarily personal computers connected through national networks (TYMNET, TELENET) to the NLM host computers. MEDLARS operates under the NLM ELHILL software which, however, is not compatible with the Internet protocol. Changes have to be made both to ELHILL and to the Grateful Med software to allow access via the Internet.

At this point, Dr. Masys gave a brief overview of the national network known as the Internet. It evolved from an earlier network sponsored by the Department of Defense under the direction of Dr. Robert Kahn (a new member of the NLM Board of Regents). The Internet, now supported by the National Science Foundation, currently operates at a speed of 1.5 million bits per second and is being upgraded to 45 million bits per second. As of last fall, 92 percent of graduate program universities were connected to the Internet (the fastest growing segment of the network now is that of the undergraduate-only college). There are also industry users and

many users in foreign countries. The total number of Internet users is estimated to be three million. Usage, as measured in numbers of "packets" (a sort of electronic envelope containing up to about 1000 bytes), is climbing steeply. The Internet is headed towards becoming a National Research and Education Network (NREN), an electronic superhighway for research and education which will provide digital communications at speeds 1000 or more times faster than today's Internet. Once this high level is attained, NLM will face challenging issues of how to manage large volumes of digital information stored at many geographically dispersed sites. Dr. Masys presented several scenarios of how this might work, for example the National Digital Library System, envisioned by Drs. Cerf and Kahn of the Corporation for National Research Initiatives.

Dr. Navarro then briefly described work done to date on ELHILL and Grateful Med to make them compatible with the Internet. Mr. Donald Preuss of NIAID conducted for the Board a MEDLINE search using a test version of Grateful Med with access to the Internet. The target date for having the system up operationally on the Internet is June 1991.

Following the demonstration, Dr. Robert Kahn observed that simply getting away from all the modem interactions is a good idea. He described ongoing work that will allow greatly facilitated and expanded retrieval of information from multiple databases and allow increased local manipulation for the rearrangement and presentation of data. The biggest issue, however, is how to deal with information overload. If you are in control of your search (as with MEDLINE) it is not a big problem. But in the area of E-mail, the amount of information can be overwhelming. Dr. Kahn receives 200-300 messages a day. A method of dealing with this is needed. A challenge to the NLM is how to take systems under development within the Lister Hill Center and the National Center for Biotechnology Information and to integrate them into the Library's operational systems. The work of Dr. Navarro and Dr. Masys concerning Grateful Med and Internet is a good example of this. Because medicine is a structured discipline, has a focus, and encompasses both formal (controlled) and informal (uncontrolled) aspects of its information apparatus, the Library is well positioned to play a lead role in developing national information systems.

## **X. REPORT FROM EXTRAMURAL PROGRAMS**

Dr. Milton Corn, Acting Associate Director for Extramural Programs, reported on the "NIH Plan for Managing the Costs of Biomedical Research." Still in draft form, it has been mailed for comments to NIH Councils and Boards and was included in its entirety in the Board's agenda book. The report outlines a number of changes which could have profound consequences. Dr. Corn recounted the history that preceded this document: Many scientists perceive diminishing NIH funds for research grants while Congress, which has been appropriating increased sums each year, blames NIH for the lack of a clear plan to provide stability in the NIH funding levels. In effect, last August the Congress presented a financial management plan of its own to NIH with the implication that NIH would be expected to adopt the Congressional suggestion or create an acceptable alternate. Dr. Corn briefly outlined the



House and Senate plans: NIH should over the next four years move toward a stable research pool of 6,000 new and competing grants annually and a total of 24,000 grants. The average length of each grant should be four years. The total cost of a grant, including the indirect costs, should be considered in all stages of the grant review process. Downward negotiations should be eliminated. The initial review groups should make some judgement on inherent value of the research in assessing the appropriateness of proper indirect costs. The number of center grants to be funded by NIH were set arbitrarily at 640. Another important item was the House's objection to the approval system used by NIH. The House believes that a 95 percent approval rating is unrealistic and overgenerous.

The NIH response to the Congressional Committee plan was thoughtful. In summary: NIH will accept a four-year duration for the average grant; will use the Biomedical Research and Development Price Index for the end-of-the-year inflation index; will most likely drop the words "approval" or "disapproval" entirely and instead grade the applications, awarding only those with the best scores; will assign more money to training activities (the National Academy of Sciences estimates an approximate increase of 3.5 percent annually to be reasonable); is not in favor of an arbitrary cap on the number of center grants (proposes instead that the centers decision be needs-based); is not willing to let the indirect cost rates be part of the recommendations of the initial review groups (IRGs), believing that the IRGs' charge should remain confined to merit and basic budget questions. NIH raised the possibility that the Councils and Boards might consider indirect cost rates during the second stage of the review process.

To a question by Dr. Davis as to when the plan would be implemented, Dr. Lindberg replied that the NIH plan would be presented to the Congress when the NIH Director testifies before the House on the entire NIH appropriations' package.

Dr. Beering commented that he found the Congressional points described very thoughtful and the response by NIH appropriate and reasonable.

### Budget

On the Extramural Programs' budget and funding plans, Dr. Corn mentioned that for most of the categories NLM will be able to award the high-priority proposals this year, as was the case last year.

### Board Operating Procedures

As required annually, Dr. Corn presented for review the Board Operating Procedures, "Guidelines for Adjustments by Staff in Time or Amount of Grant Award." The Guidelines were reaffirmed unanimously.

**MEETING CLOSED FOR THE REVIEW OF GRANT APPLICATIONS  
FEBRUARY 28 - 4:35-4:50 P.M.**

**XI. REVIEW OF PENDING APPLICATIONS**

Before proceeding with the consideration of pending applications, Dr. Roger W. Dahlen, Chief, Biomedical Information Support Branch, EP, asked Board members to be aware of confidentiality and conflict-of-interest procedures included in the grant application workbook and reminded them to sign, at the conclusion of the grant applications review, the statement noting that they had not participated in the discussion of any application which presented a conflict of interest.

The Board reviewed 40 applications, requesting \$21,100,035 and recommended for approval 31 applications in the amount of \$13,807,297 for the total years requested. Nine applications in the amount of \$1,744,993 were disapproved. Grant applications recommended for approval by the Board are listed in the summary actions (Attachment E). Interim actions taken by the Extramural Programs staff since the September meeting were considered by the Board's Extramural Programs Subcommittee and noted and concurred with by the Board of Regents.

**MEETING OPEN -- MARCH 1 -- 9:00 A.M. TO ADJOURNMENT**

**XII. UNIFIED MEDICAL LANGUAGE SYSTEM'S KNOWLEDGE SOURCES**

Dr. Lindberg gave a report on progress being made on the Unified Medical Language System (UMLS), a project previously reported to the Board several times. He briefly recounted the purpose of the project--to overcome the problem of the lack of a standard vocabulary in biomedicine--and noted that present problems of information retrieval attributable to lack of standard nomenclature will be exacerbated as the future brings high-speed networks and immense image databases. Among today's various types of sources of knowledge are the biomedical literature, patient records, artificial intelligence expert systems, and factual databases. Users of these sources are health practitioners and biomedical scientists.

Using slides, Dr. Lindberg showed how the new UMLS Metathesaurus, a tool containing "raw knowledge" (with a browsing program), could be used to help locate various information dealing with AZT. The first version of the Metathesaurus has been distributed on CD-ROM to more than 100 information scientists and system builders in universities and private companies. Its content is based on the NLM's own Medical Subject Headings, selected Library of Congress Subject Headings, and a number of other sources. A second UMLS product will be the Semantic Network, a set of relationships among semantic types. A third part, the Information Sources Map, is the least developed component of the UMLS. It will be a file that "knows"

where information resides, its character, and the protocol for reaching the information. To summarize the current status of the UMLS: the first version of the Metathesaurus has been distributed and is available in several versions on CD-ROM, and the Semantic Network, still under development, will be a landmark in computational linguistics.

Dr. Robert Kahn, commenting on the presentation, said that the Unified Medical Language System is an awesome concept and one of the most ambitious projects ever in the dissemination of biomedical information. He said that NLM's successfully managing the interaction among various groups involved will be crucial to the UMLS achieving its goals. NLM will eventually have to shift UMLS applications from the present group of very sophisticated biomedical information scientists to the general medical community. When that time comes, the teaching and disseminating function will be extremely important. The Library should be preparing for that now.

### **XIII. REPORT ON THE 1990 IMPAG MEETING**

Dr. Richard Hsieh, NLM Assistant Director for International Programs, reported on the International MEDLARS Policy Advisory Group (IMPAG) meeting held last fall at the NLM. Seventeen Centers were represented, including the newest in Taiwan. The primary purposes of the Centers is to provide access to NLM's MEDLARS databases to health professionals. Using slides, Dr. Hsieh showed how the different Centers have access--some online to NLM, some through their own computer centers, some both ways--and the levels of their usage. In return for access, the Centers support about eight percent of all MEDLARS indexing. The visitors received presentations about NLM's new outreach initiative, NLM's policies concerning MEDLINE on CD-ROM, the High Performance Computing and Communications project, literature selection procedures, and pricing issues affecting the databases. A number of topics suggested by the partners themselves were thoroughly discussed, such as the impact of CD-ROM, user friendly interfaces, serving remote users, future networking plans, full-text microform, and the impact of the 1992 European Economic Community. They also received special demonstrations and presentations from NLM staff in the Lister Hill Center, the National Center for Biotechnology Information, and other areas. Two of the foreign visitors--France and PAHO--demonstrated their systems. The topic of greatest concern was that of the impact of CD-ROM on the online services provided by the MEDLARS Centers.

Following Dr. Hsieh's report, NLM Deputy Director, Mr. Kent Smith, emphasized the intellectual collaborative nature of the partnership between the Centers and NLM. The partners help NLM not only with indexing and acquisition services but also in joint research projects. Flat rate pricing, as for subsets, is increasingly popular in the U.S., and the NLM is looking into the possibility of extending it as an option to its foreign partners. NLM expects to receive some proposals soon. Mr. Smith reported that the United Kingdom MEDLARS Center is planning to provide MEDLINE access at a flat rate via Grateful Med to academic centers in that country. As to journal selection, Mr. Smith said that NLM was interested in receiving advice from authoritative professional bodies in other countries to help the Library in journal selection.

Finally, NLM asked the foreign centers to see if they could identify sources of assistance for NLM's new responsibilities in health services research.

#### **XIV. IMPROVING NLM'S INFORMATION SERVICES TO HOSPITALS**

Mrs. Lois Ann Colaianni, NLM Associate Director for Library Operations, noted that not only do NLM's databases contain much information that may be applied in clinical care, but the second most heavily used NLM database (after MEDLINE) is the Health Planning and Administration database. About one-third of the searching hours on NLM's computers (or 1.5 million searches) can be attributed to users associated with hospitals. These facts were recognized by the Long-Range Planning Panel on Outreach and were taken into account in the Panel's recommendations, one of which is that NLM should strengthen hospitals' access to national biomedical information resources. In an effort to find out about how hospital administrators view the libraries in their institutions, the NLM co-sponsored (with the Friends of the NLM, the American Hospital Association, and the Medical Library Association) a conference of hospital administrators and health care executives. The purpose of the conference was to ask a wide range of hospital officials how the NLM could improve its information services to them and their users. Mrs. Colaianni briefly described the presentation by the Honorable Paul Rogers at a reception the evening before. The next morning, before the group began their discussions, there were presentations by Dr. Lindberg, Ms. Carole M. Gilbert (director of a hospital medical library and chair of the hospital library section of the Medical Library Association), and Dr. William McClatchey, a physician in private practice. Also as an aid to their discussions, Dr. Lindberg presented to the group three listings of NLM activities germane to the subject: present (exhibiting, Grateful Med training and demonstrations, grant activities, publicity, etc.); intermediate future (work-related health care technology and research and the UMLS); and the longer-term future (NIH clinical trials, artificial intelligence systems, and High Performance Computing and Communications). A report of the conference will soon be available.

Dr. Thomas E. Bryant, President of the Friends of the NLM, said that this conference, especially because of its relation to outreach was the kind the Friends were eager to sponsor. He briefly summed up the pragmatic advice given to the Library by those attending the conference: (1) Marketing, with different modes for targeting urban and rural areas, is the key to getting the word about Grateful Med and MEDLINE; (2) hospital staff concerned with quality assurance and utilization review are excellent targets for information about NLM's information services; (3) NLM should have an extensive program of exhibiting at professional meetings of those groups; (4) target the largest 20 hospital chains as a way of leveraging efforts; (5) NLM should make extensive use of the Regional Medical Library and Area Health Education Centers network as partners; (6) technical groups associated with professional societies might be good groups to approach; (7) articles documenting the cost-effectiveness of information services should be published; (8) NLM should make special efforts to reach small facilities providing medical care that are too small to have libraries; and (9) continuing medical education credit for searching and search training should be promoted.

Dr. Lindberg said that NLM has traditionally served especially well the biomedical scientist community. The Library has never claimed to serve equally well the practicing community--especially as represented by the hospitals. The Library is aware that it needs to do more in this area. There is no one action NLM should take--it is many modest actions taken in parallel that will make a difference.

**XV. APPOINTMENT OF NOMINATING COMMITTEE**

Dr. Detmer appointed a committee to nominate a Board chairman for 1991-1992: Col. Fauver (Chair), Dr. McCormick, and Mr. Howard.

**XVI. FDR VIDEOTAPE**

Dr. Masys introduced and showed to the Board a videorecording produced by staff of the Lister Hill Center that put together still photographs of President Franklin D. Roosevelt dedicating the NIH on October 31, 1940, and a voice recording of his speech at the ceremony. Copies of the videotape were given to Board members.

**XVII. ADJOURNMENT**

The meeting was adjourned at 11:45 a.m. on Friday, March 1.

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Subcommittee Meetings on Wednesday, February 27:

Extramural programs Subcommittee--1:30 to 3:00 p.m.  
(Attachment C)

Planning Subcommittee--3:00 to 4:00 p.m.  
(Attachment D)

Full Board Meeting on Thursday and Friday  
February 28-March 1

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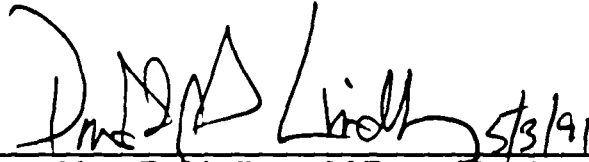
**ACTIONS TAKEN BY THE BOARD OF REGENTS**

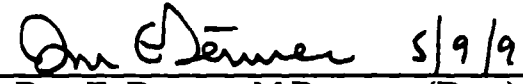
1. The Board passed a resolution to be sent to the HHS Secretary urging his continued support for NLM as the Department's lead agency in the area of High Performance Computing and Communications (Attachment B).

2. The Board concurred with recommendations of the Extramural Programs Subcommittee. Grant applications for approval are listed in the summary actions (Attachment E).

.....

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

  
Donald A. B. Lindberg, M.D. (Date) 5/3/91  
Executive Secretary

  
Don E. Detmer, M.D. (Date) 5/9/91  
Chairman

## BOARD OF REGENTS OF THE NATIONAL LIBRARY OF MEDICINE

## CHAIRMAN

**DETMER, Don E., M.D.** (8/3/91)  
 Vice President for Health Sciences  
 University of Virginia  
 Box 179, Medical Center  
 Charlottesville, VA 22908 804-924-2444  
FAX 804-924-9967

<p><b>ANDERSON, Rachael K.</b> (8/3/94)            Director            Health Sciences Center Library            University of Arizona            1501 N. Campbell Ave.            Tucson, AZ 85724  <u>602-626-6121</u>  <u>FAX 602-626-2831</u></p>	<p><b>DeNARDIS, Lawrence J., Ph.D.</b> (8/3/94)            President            Connecticut Public Expenditure Council            21 Lewis Street            Hartford, CT 06103  <u>203-527-8177</u>  <u>FAX 203-246-9790</u></p>
<p><b>BEERING, Steven C., M.D.</b> (8/3/91)            President            Purdue University            West Lafayette, IN 47907  <u>317-494-9708</u>  <u>FAX 317-494-7875</u></p>	<p><b>KAHN, Robert E., Ph.D.</b> (8/3/94)            President            Corporation for National            Research Initiatives            1895 Preston White Drive            Suite 100            Reston, VA 22091  <u>703-620-8990</u>  <u>FAX 703-620-0913</u></p>
<p><b>CAPE, Ronald E., Ph.D.</b> (8/3/92)            Chairman            Cetus Corporation            1400 Fifty-Third Street            Emeryville, CA 94608  <u>415-420-3300</u>  <u>FAX 415-421-4102</u></p>	<p><b>SMITH, Alvy Ray, Ph.D.</b> (8/3/92)            Executive Vice President            Pixar            1001 W. Cutting Boulevard            Richmond, CA 94804  <u>415-236-4000</u>  <u>FAX 415-236-0388</u></p>
<p><b>COHN, Lawrence H., M.D.</b> (8/3/93)            Chief of Cardiac Surgery            Department of Surgery            Brigham and Women's Hospital            75 Francis Street            Boston, MA 02115  <u>617-734-8183</u>  <u>FAX 617-732-6559</u></p>	<p><b>SPURLOCK, Jeanne, M.D.</b> (8/3/93)            Deputy Medical Director, and            Director, Department of Minority            National Affairs            American Psychiatric Association            1400 K Street, N.W.            Washington, DC 20005  <u>202-682-6093</u>  <u>FAX 202-682-6114</u></p>
<p><b>DAVIS, Ruth M., Ph.D.</b> (8/3/92)            President            The Pymatuning Group, Inc.            Suite 707            2000 N. 15th Street            Arlington, VA 22201  <u>703-243-3993</u>  <u>FAX 703-527-7048</u></p>	

**EX OFFICIO MEMBERS****Primary****Alternate**

**BILLINGTON, James H., D. Phil.**  
 Librarian of Congress  
 Library of Congress  
 10 First Street, S.E.  
 Washington, DC 20540

202-707-5205

**ROWBERG, Richard E., Ph.D.**  
 Chief  
 Science Policy Research Division  
 Congressional Research Service  
 Library of Congress  
 10 First Street, S.E.  
 Washington, DC 20540

202-707-7040  
FAX 202-707-7000

**CLUTTER, Mary E., Ph.D.**  
 Asst. Director for Biological,  
 Behavioral, and Social Sciences  
 National Science Foundation  
 1800 G Street, N.W., Room 506  
 Washington, DC 20550

202-357-9854  
FAX 202-357-7059

**BROWNSTEIN, Charles N., Ph.D.**  
 Director, Directorate for Computer and  
 Information Science & Engineering  
 National Science Foundation  
 1800 G Street, N.W.  
 Washington, DC 20550

202-357-7936

**HOLSINGER, James W., Jr., M.D.**  
 Chief Medical Director  
 Veterans Health Services  
 and Research Admin. (10)  
 Dept. of Veterans Affairs  
 810 Vermont Avenue, N.W.  
 Washington, DC 20420

202-233-2596  
FAX 202-233-4953

**CARTER, Wendy, M.L.S.**  
 Chief, Public Services Section  
 Dept. of Veterans Affairs  
 810 Vermont Avenue, N.W. (143 B4)  
 Washington, DC 20420

202-233-5910  
FAX 202-233-3554

**HOWARD, Joseph H.**  
 Director, National Agricultural Library  
 U.S. Department of Agriculture  
 10301 Baltimore Boulevard  
 Beltsville, MD 20705

301-344-4248  
FAX 301-344-5472

**LEDFORD, Frank F., Jr., Lt. Gen., MC, USA**  
 The Surgeon General  
 Department of the Army  
 5111 Leesburg Pike  
 Falls Church, VA 22041-3258

703-756-0000

**FAUVER, Howard E., Jr., Col., MC, USA**  
 Chief  
 Graduate Medical Education Branch  
 U.S. Army Health Professional Support  
 Agency (SGPS-EDM)  
 5109 Leesburg Pike  
 Falls Church, VA 22041-3258

703-756-8036  
FAX 703-756-0243



**NOVELLO, Antonia C., M.D., M.P.H.**  
Surgeon General, PHS  
200 Independence Avenue, S.W.  
Washington, DC 20201  
202-245-6467  
FAX 202-245-2810

**McCORMICK, Kathleen A., R.N., Ph.D.**  
Research Nurse Director  
Laboratory of Behavioral Sciences  
National Institute on Aging, NIH  
Gerontology Research Center  
4940 Eastern Avenue  
Baltimore, MD 21224  
301-550-1791  
FAX 301-550-1704

**MILLER, Monte B., Lt. Gen., USAF, MC**  
Surgeon General  
Department of the Air Force  
Bolling Air Force Base  
Washington, DC 20332-6188  
202-767-4343

**MAFFET, Charles K., Col., USAF, MC**  
Deputy Director, Professional Affairs and  
Quality Assurance (SGP)  
Bolling Air Force Base  
Washington, DC 20332-6188  
202-767-1849  
FAX 202-404-8089

Dean, Uniformed Services University  
of the Health Sciences  
F. Edward Hebert School of Medicine  
4301 Jones Bridge Road  
Bethesda, MD 20814-4799  
301-295-3013  
FAX 301-295-3627

**ZIMBLE, James A., Vice Adm., MC, USN**  
Surgeon General  
Office of the Chief of Naval  
Operations (OP-093)  
Department of the Navy  
Washington, DC 20350-2000  
202-697-0587

**KEMP, David G., Capt., MC, USN**  
Commanding Officer, Naval Health  
Sciences, Education and Training Command  
Department of the Navy  
Bethesda, MD 20814-5022  
301-295-0293  
FAX 301-295-2374

**EXECUTIVE SECRETARY**

**LINDBERG, Donald A. B., M.D.**  
Director  
National Library of Medicine  
Bethesda, MD 20894 301-496-6221

# BOARD OF REGENTS OF NATIONAL LIBRARY OF MEDICINE

8600 ROCKVILLE PIKE • BETHESDA, MARYLAND • 20894

ATTACHMENT "B"

March 1, 1991

The Honorable Louis W. Sullivan, M.D.  
Secretary of Health and Human Services  
Hubert H. Humphrey Building  
Room 615F  
200 Independence Avenue, S.W.  
Washington, D.C. 20201

Dear Mr. Secretary:

Don E. Demer, M.D.  
Chairman

I have the honor to convey to you, as Chairman, a resolution passed by the Board of Regents of the National Library of Medicine (NLM) at our February 28 - March 1, 1991 meeting.

Rachael K. Anderson  
Steven C. Beering, M.D.  
Ronald E. Cape, Ph.D.  
Lawrence H. Cohn, M.D.  
Ruth M. Davis, Ph.D.  
Lawrence J. DeNardis, Ph.D.  
Robert E. Kahn, Ph.D.  
Alvy Ray Smith, Ph.D.  
Jeanne Spurlock, M.D.

Pursuant to Public Law 84-941, the National Library of Medicine Act, the Board is charged with the duty of advising, consulting with, and making recommendations to you on important matters affecting the operations of the National Library of Medicine.

**Ex Officio Members**

James H. Billington, D. Phil.  
Mary E. Cutler, Ph.D.  
James W. Holinger, Jr., M.D.  
Joseph H. Howard  
Frank F. Ledford, Jr., Lt. Gen., MC, USA  
Antonia C. Novello, M.D., M.P.H.  
Monte B. Miller, Lt. Gen., USAF, MC  
Dean, Uniformed Services  
University of the Health Sciences  
James A. Ziroble, Vice Adm., MC, USN

This resolution is asking you, as Secretary, to support further increases in resources for the NLM in pursuit of its objectives under the nation's High Performance Computing and Communications Program (HPCC).

The focal point for this important Presidential initiative within the Department of Health and Human Services is the National Institutes of Health and, specifically, the National Library of Medicine. The Board fully supports this leadership role for the NLM in the HPCC. The NLM has a long and productive history of innovation in the use of computers and computer networks, and is superbly qualified to meet the program's Grand Challenges in biomedicine.

The Board gratefully acknowledges the endorsement received thus far. We are pleased that the Board's belief in this extremely important project is shared by the National Institutes of Health, the

Public Health Service, and the Department. We urge that this endorsement continue and, in fact, escalate, so that the demands of this remarkable initiative are met, and the health needs of the nation are served.

On behalf of the Board, I wish to convey our best wishes, and offer any support that we may provide to you in carrying forward the important progress of the Department.

A handwritten signature in black ink, appearing to read "Don E. Detmer". The signature is written in a cursive, flowing style.

Don E. Detmer, M.D.

Attachment  
NLM Board of Regents Resolution

**RESOLUTION  
ADOPTED BY THE  
BOARD OF REGENTS OF THE NATIONAL LIBRARY OF MEDICINE  
March 1, 1991**

**WHEREAS**, the President's Office of Science and Technology Policy (OSTP), through the Federal Coordinating Council for Science, Engineering, and Technology (FCCSET) has proposed a multi-agency High Performance Computing and Communications Program (HPCC) to strengthen the nation's research computing enterprise; and

**WHEREAS**, high performance computers and high-speed computer networks are key technologies for the future of biomedical science and its applications; and

**WHEREAS**, Grand Challenges in biomedicine, such as the analysis of the human genome, prediction of biological structure and function from genetic code, and rational drug design, will require new and faster computers, advanced software, a national research and education computer network, and expanded training of scientists in the use of computer-based tools; and

**WHEREAS**, the National Library of Medicine's research and development programs that address these Grand Challenges include ongoing and planned HPCC application efforts in molecular biology computing, creation and transmission of digital electronic images, the linking of academic health centers via computer networks, the creation of advanced methods to retrieve information from life sciences databases, and training in biomedical computer sciences; and

**WHEREAS**, within the Department of Health and Human Services, the focal point for the HPCC Program is the National Institutes of Health and, specifically, the National Library of Medicine.

**BE IT RESOLVED** that the Board of Regents takes this means to express its strong support for the National Library of Medicine's representation of the biomedical community's needs in the development of these critical information technologies, and its leadership in the design of creative applications geared to the accomplishment of the Grand Challenges in biomedicine.

**FURTHER BE IT RESOLVED** that the Board gratefully acknowledges the support of the Acting Director, NIH, the Assistant Secretary for Health, and the Secretary of the Department of Health and Human Services in their endorsement of a funding increase for the Library in pursuit of its HPCC program objectives.

**FURTHER BE IT RESOLVED** that the Department of Health and Human Services should, in the interest of the Nation's public health, support further increases in resources to the National Library of Medicine for this important Presidential initiative.

**BOARD OF REGENTS**

**EXTRAMURAL PROGRAMS SUBCOMMITTEE MEETING**

**February 27, 1991**

**1:30 to 3:00 p.m.**

**A T T E N D E E S**

**Subcommittee Members Present:**

Dr. Steven C. Beering, Chair  
Ms. Rachael K. Anderson  
Col. Charles K. Maffet

**Subcommittee Members Absent:**

Dr. Lawrence H. Cohn

**NLM Staff Present:**

Mrs. Ruth E. Bortz, Grants Management Specialist, EP  
Mr. Arthur J. Broering, Deputy Associate Director, EP  
Mr. Brian Campbell, Administrative Officer, EP  
Mr. Peter A. Clepper, Program Officer, EP  
Mrs. Karin K. Colton, Committee Management Assistant, EP  
Dr. Milton Corn, Acting Associate Director, EP  
Dr. Roger W. Dahlen, Chief, Biomedical Information Support Branch, EP  
Ms. Andrea Epstein, Grants Assistant, EP  
Mrs. Frances E. Johnson, Program Officer, EP  
Ms. Ellen Meltzer, Grants Management Specialist, EP  
Mr. Richard T. West, Chief, Office of Program Planning and Evaluation, EP

**BOARD OF REGENTS  
PLANNING SUBCOMMITTEE MEETING**

**February 27, 1991**

**3:00 to 4:00 p.m.**

**Subcommittee Members Present:**

Dr. Mary E. Clutter  
Col. Howard Fauver  
Dr. Lois E. DeBakey (Consultant)

**Subcommittee Members Absent:**

Dr. Don E. Detmer  
Dr. Robert E. Kahn

**NLM Staff Present:**

Dr. Donald A. B. Lindberg  
Dr. Elliot Siegel

The Planning Subcommittee met at 3:00 p.m. on Wednesday, February 27, 1991. Dr. Siegel presented an overview of current plans for convening a long-range planning panel of the subject of toxicology and the environment, as requested by the Board at its last meeting. Included was a background statement detailing the history of NLM's role in the dissemination of information in this area, the changing nature of this role in the face of increasingly numerous collaborations with other government agencies having a regulatory and informational role, and the varied audiences to be served. A draft panel charge was also discussed and approved.

Dr. Lindberg noted current efforts by staff to recruit a panel chair who would possess the desired expertise and stature. Suitable candidates were discussed along with the names of potential panel members.

Dr. Clutter informed the Subcommittee of related activities underway by the FCCSET Committee on Life Sciences and Health. Of particular interest is the likely formation of a working group on Environmental Health that will report to the Subcommittee on Environmental Biology, which she chairs.

The meeting was adjourned at 4:00 p.m.

APPLICATIONS APPROVED BY COUNCIL  
 (ARRANGED NUMERICALLY BY PROGRAM)  
 PROG. CLASS: COUNCIL DATE: JAN./FEB. 1991  
 INSTITUTE/DIVISION: NATIONAL LIBRARY OF MEDICINE

APPLICATION NUMBER	PROJECT TITLE	AMOUNTS RECOMMENDED
3 G07 LM05146-01S1	ENHANCED INFORMATION ACCESS FOR RURAL NORTH IDAHO	01S1 16,755
1 G07 LM05201-01A1	S. CENTRAL HEALTH INFO. NETWORK INFORMATION ACCESS GRANT	01A1 99,010
1 G07 LM05204-01A1	NORTHEAST MISSOURI AHEC INFORMATION ACCESS CONSORTIUM	01A1 360,000
1 G07 LM05274-01	AUTOMATING HOSPITAL LIBRARY WITH MEDLINE EQUIPMENT	01 12,000
1 G07 LM05295-01	DUBOIS COMPUTER NETWORK	01 8,007
1 G07 LM05298-01	RESOURCES FOR HLTH INFO LOCAL AREA SHARING SYS REHI LASS	01 120,000

APPLICATIONS APPROVED BY COUNCIL  
 (ARRANGED NUMERICALLY BY PROGRAM)  
 COUNCIL DATE: JAN./FEB. 1991  
 INSTITUTE/DIVISION: NATIONAL LIBRARY OF MEDICINE

APPLICATION NUMBER	PROJECT TITLE	AMOUNTS RECOMMENDED
1 G08 LM05261-01	UNIVERSITY OF PITTSBURGH IAIMS PHASE II	01 538,809 02 585,856 03 594,633
1 G08 LM05286-01	INTERACTIVE MEDICAL INFORMATION SYSTEM IN NEW MEXICO	01 179,780 02 173,194 03 94,560
1 G08 LM05290-01	INFORMATION TECHNOLOGY CONNECTIVITY AND TRAINING	01 79,440 02 106,409
1 G08 LM05292-01	HEALTH CARE INFORMATION ACCESS CONSORTIUM MODEL	01 150,000 02 150,000 03 112,500
1 G08 LM05294-01	HEALTH LIBRARY AND INFORMATION SERVICES DATABASE PROJECT	01 149,378 02 149,938 03 148,631
1 G08 LM05297-01	SUPPORT FOR OFFSITE SEARCHING	01 128,306 02 24,150



APPLICATIONS APPROVED BY COUNCIL  
(ARRANGED NUMERICALLY BY PROGRAM)  
COUNCIL DATE: JAN./FEB. 1991  
INSTITUTE/DIVISION: NATIONAL LIBRARY OF MEDICINE  
PROG. CLASS:

APPLICATION NUMBER	PROJECT TITLE	AMOUNTS RECOMMENDED
1 P41 LM05305-01	CENTER FOR ADVANCED MEDICAL INFORMATICS AT STANFORD	01 1,126,887 02 1,065,963 03 775,017 04 766,816 05 759,891

APPLICATIONS APPROVED BY COUNCIL  
 (ARRANGED NUMERICALLY BY PROGRAM)  
 INSTITUTE/DIVISION: NATIONAL LIBRARY OF MEDICINE  
 COUNCIL DATE: JAN./FEB. 1991

APPLICATION NUMBER	PROJECT TITLE	AMOUNTS RECOMMENDED
1 R01 LM05196-01A1	QUANTITATIVE CLASSIFICATION OF PROTEIN SEQUENCES	01A1 79,703 02 71,757 03 75,752
1 R01 LM05202-01A1	IMPACT OF AN EXPERT SYSTEM ON THE PRACTICE OF MEDICINE	01A1 280,211 02 292,262
1 R01 LM05279-01	DUALS SECONDARY REVIEW: DK THE COMMERCIALIZATION OF VITAMINS 1920S TO 1980S	01 23,435
1 R01 LM05281-01	DUALS SECONDARY REVIEW: HS INTERCOUNTRY ADOPTION: A MEDICAL GUIDE	01 25,000
1 R01 LM05285-01	A BIOLOGICAL KNOWLEDGE-BASE MANAGEMENT SYSTEM	01 189,588 02 184,724 03 173,671
1 R01 LM05287-01	DEVELOPMENT OF FACTS ABOUT NURSING	01 24,699
1 R01 LM05289-01	INFORMATION EXCHANGE IN CLINICAL SETTINGS	01 119,422 02 115,782 03 121,860
1 R01 LM05296-01	A CLINICAL GENETICIST'S WORKSTATION	01 291,709 02 287,083 03 296,184

APPLICATIONS APPROVED BY COUNCIL  
(ARRANGED NUMERICALLY BY PROGRAM)  
COUNCIL DATE: JAN./FEB. 1991  
INSTITUTE/DIVISION: NATIONAL LIBRARY OF MEDICINE  
PROG. CLASS:

APPLICATION NUMBER	PROJECT TITLE	AMOUNTS RECOMMENDED
1 R01 LM05299-01	EXPLANATION IN THE CLINICAL SETTING	01 298,407 02 364,230 03 363,004

APPLICATION NUMBER	PROJECT TITLE	AMOUNTS RECOMMENDED
1 R29 LM05254-01	EXPLOITING THE UNIFIED MEDICAL LANGUAGE SYSTEM	01 71,533 02 64,300 03 67,678 04 71,259 05 75,055
1 R29 LM05278-01	QUALITATIVE ANALYSIS OF METABOLIC PATHWAYS	01 61,495 02 65,145 03 69,015 04 73,120 05 77,465
1 R29 LM05284-01	INTELLIGENT REAL-TIME INFORMATION SYNTHESIS FOR MONITORS	01 47,126 02 63,590 03 74,710 04 79,567 05 84,739
1 R29 LM05300-01	DUALS SECONDARY REVIEW: CA OPTIMIZATION OF DCT TYPE IMAGE COMPRESSION	01 58,806 02 68,034 03 68,474 04 76,238 05 78,440
1 R29 LM05302-01	KNOWLEDGE-BASED MEDICAL INFORMATION RETRIEVER/INTERFACE	01 68,924 02 61,421 03 65,691 04 70,258 05 75,136
1 R29 LM05306-01	DUALS SECONDARY REVIEW: HG AUTOMATED DNA SEQUENCE ANALYSIS USING NEURAL NETWORKS	01 67,465 02 66,523 03 69,185

APPLICATIONS APPROVED BY COUNCIL  
(ARRANGED NUMERICALLY BY PROGRAM)  
INSTITUTE/DIVISION: NATIONAL LIBRARY OF MEDICINE  
COUNCIL DATE: JAN./FEB. 1991

APPLICATION NUMBER	PROJECT TITLE	AMOUNTS RECOMMENDED
1 R29 LM05307-01		01 65,868
		02 69,450
		03 67,073
		04 71,098
		05 73,596

SAPHIRE: A CONCEPT-BASED APPROACH TO INFO RETRIEVAL

APPLICATIONS APPROVED BY COUNCIL - DUAL REVIEW  
 (ARRANGED NUMERICALLY)

COUNCIL DATE: JAN./FEB. 1991

INSTITUTE/DIVISION: NATIONAL LIBRARY OF MEDICINE

APPLICATION NUMBER	PROJECT TITLE	AMOUNTS RECOMMENDED
2 R01 CA44060-04A1	DUALS SECONDARY REVIEW: LM NEW VISUALIZATIONS FOR MEDICAL IMAGE WORKSTATION	04A1 284,976 05 302,260 06 291,851
1 R01 HS06766-01	DUALS SECONDARY REVIEW: LM EFFECT OF DECISION SUPPORT SYSTEMS ON CLINICAL REASONING	01 279,823 02 289,121 03 292,405

APPLICATIONS APPROVED BY COUNCIL - DUAL REVIEW  
(ARRANGED NUMERICALLY)  
COUNCIL DATE: JAN./FEB. 1991  
INSTITUTE/DIVISION: NATIONAL LIBRARY OF MEDICINE  
PROG CLASS:

APPLICATION NUMBER	PROJECT TITLE	AMOUNTS RECOMMENDED
1 R13 HG00436-01	DUALS SECONDARY REVIEW: LM WORKSHOP ON THE GENOME OF E COLI	01 41,000

DEPARTMENT OF HEALTH AND HUMAN SERVICES  
NATIONAL INSTITUTES OF HEALTH  
NATIONAL LIBRARY OF MEDICINE  
Bethesda, Maryland

A G E N D A

97th Meeting of the

BOARD OF REGENTS

9:00 a.m., June 20-21, 1991

Board Room  
Mezzanine of  
National Library of Medicine

MEETING OPEN: 9:00 a.m. to 3:30 p.m. on June 20 and from 9:00 a.m. to approx.  
12:00 p.m. on June 21.  
MEETING CLOSED: 3:30 p.m. to 4:00 p.m. on June 20 for the review of grant  
applications.

1. CALL TO ORDER AND INTRODUCTORY REMARKS Dr. Don E. Detmer
2. REMARKS FROM THE SURGEON GENERAL'S OFFICE Dr. Rice C. Leach
3. CONSIDERATION OF FEBRUARY/MARCH MINUTES TAB I Dr. Don E. Detmer  
(Agenda Book)
4. FUTURE MEETING DATES Dr. Don E. Detmer

Fall Meeting: Oct. 23-24, 1991 (W-Th)--CONFIRMED  
Winter Meeting: Jan. 30-31, 1992 (Th-F)--CONFIRMED  
Spring Meeting: May 28-29 OR June 4-5, 1992 (Th-F)--PROPOSED

(Subcommittees meet, when necessary, the day before the full Board.)

PLEASE NOTE: Medical Library Association Annual  
(Potential conflicts w/ Meeting, 5/15-21/92, Washington, DC  
May/June 1992 meeting AMIA Annual Meeting, 6/7-9/92,  
dates.) Portland, OR

6/19/91





COFFEE BREAK

12. REPORT FROM EXTRAMURAL PROGRAMS TAB VI Dr. Milton Corn  
EP Subcommittee,  
Discussants
- a. Budget and Funding Plans Tab A
  - b. Results of Training RFA
  - c. Changes in Information Access and IAIMS Grant Criteria
  - d. Outcome on NIH Plan for Managing Costs of Biomedical Research
- Discussion Board Members
- 

MEETING CLOSED FOR THE REVIEW OF GRANT APPLICATIONS, JUNE 20, 3:30 P.M.

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13. REVIEW OF GRANT APPLICATIONS Application Workbook Dr. Roger W. Dahlen  
(Conflict-of-interest instructions in front of workbook for your information and review.)
- RESEARCH TAB I
- A. Medical Informatics Tab A
  - B. Biotechnology Tab B
  - C. Library and Information Science Tab C
- RESOURCE TAB II
- A. Information Systems Tab A
  - B. Information Access Tab B
  - C. IAIMS Tab C
- SMALL BUSINESS INITIATIVE TAB III
- PUBLICATION GRANT APPLICATIONS TAB IV
- SUMMARY LIST OF DISAPPROVED APPLICATIONS TAB V
- INTERIM ACTIONS TAB VI

- 14. Friends' Patron Recognition Ceremony 4:00- 5:15  
and Address by Dr. Bernadine Healy  
(Lister Hill Center Auditorium)

R E C E S S \* \* \* \* \*

FRIENDS' RECEPTION IN THE LOBBY OF THE LISTER HILL CENTER . . . 5:15-6:30 p.m.

DINNER . . . . . 7:00 p.m. Bethesda Naval Officers' Club  
Bethesda, Maryland  
"BRIDGE ROOM"

SPEAKER: Dr. Don E. Detmer, Vice President for Health Sciences,  
University of Virginia, and Chairman, Board of Regents

TITLE: "From the Ivory Tower to the Unisearchity."

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R E C O N V E N E: Friday, 9:00 a.m., Board Room

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- 15. REMARKS BY THE ASSISTANT SECRETARY FOR HEALTH Dr. James O. Mason

- 16. NLM'S ONLINE CHEMICAL FILES TAB VIII Dr. George Hazard  
Dr. Ronald E. Cape,  
Discussant

Discussion Board Members

- 17. REMARKS BY THE DIRECTOR, NIH Dr. Bernadine Healy

COFFEE BREAK

- 18. DESCRIPTION AND DEMONSTRATION OF TAB VII Dr. David J. Lipman  
NCBI CD-ROM--ENTREZ: GENINFO Dr. Ruth M. Davis and  
Dr. Robert E. Kahn,  
Discussants

Discussion Board Members

- |     |   |              |                      |
|-----|---|--------------|----------------------|
| 19. | REPORT ON BOARD OF SCIENTIFIC COUNSELORS, NCBI                        | <u>TAB X</u> | Dr. David J. Lipman  |
| 20. | REPORT OF THE NOMINATING COMMITTEE                                    |              | Dr. Howard E. Fauver |
| 21. | SMITHSONIAN WORLD--"FROM INFORMATION TO WISDOM"--A VIDEO PRESENTATION |              | Mr. Robert Mehnert   |
| 22. | ADJOURNMENT   | 12:30        | Dr. Don E. Detmer    |

**DEPARTMENT OF HEALTH AND HUMAN SERVICES**

**NATIONAL INSTITUTES OF HEALTH**

**NATIONAL LIBRARY OF MEDICINE**

**BOARD OF REGENTS**

**MINUTES OF THE 97TH MEETING**

**JUNE 20-21, 1991**

**BOARD ROOM**

**NATIONAL LIBRARY OF MEDICINE**

**BETHESDA, MARYLAND**

**DEPARTMENT OF HEALTH AND HUMAN SERVICES  
PUBLIC HEALTH SERVICE**

**THE BOARD OF REGENTS OF THE NATIONAL LIBRARY OF MEDICINE**

**Minutes of Meeting  
June 20-21, 1991**

The Board of Regents of the National Library of Medicine was convened for its ninety-seventh meeting at 9:00 a.m. on Thursday, June 20, 1991, in the Board Room of the National Library of Medicine, Bethesda, Maryland. Dr. Don E. Detmer of the University of Virginia chaired the meeting. In accordance with P.L. 92-463 and the Determination of the Director, NIH, as announced in the Federal Register on June 3, 1991, the meeting was open to the public from 9:00 a.m. to 3:15 p.m. on June 20 and from 9:00 to 11:30 a.m. on June 21. The meeting was closed from 3:15 to 3:45 p.m. on June 20 for the review, discussion, and evaluation of grant applications. A Board roster is enclosed under Attachment A.

**Board members present were:**

Dr. Don E. Detmer, Chair	Dr. Robert E. Kahn
Ms. Rachael K. Anderson	Mr. Joseph H. Howard (6/20)
Dr. Ronald E. Cape (6/20)	Dr. Alvy Ray Smith
Dr. Ruth M. Davis (6/21)	Dr. Jeanne Spurlock
Dr. Lawrence J. DeNardis	

**Alternates to ex officio members present were:**

Ms. Wendy Carter, representing Dr. James W. Holsinger, Jr.  
Dr. William R. Drucker, representing the Dean of the U.S.U.H.S.  
Col. Howard E. Fauver, representing Lt. Gen. Frank F. Ledford, Jr.  
Capt. Bart Hogan, representing Vice Admiral James A. Zimble.  
Col. Charles K. Maffet, representing Lt. Gen. Monte B. Miller.  
Capt. Kathleen A. McCormick, representing Dr. Antonia C. Novello.

**Unable to attend:**

Dr. Steven C. Beering  
Dr. Lawrence J. Cohn  
Dr. Mary E. Clutter  
Dr. Richard E. Rowberg

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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. 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, also constitutes and serves as the National Libraries Assistance Advisory Board.

**National Library of Medicine staff members attending this meeting included:**

Dr. Donald A. B. Lindberg, Director  
Mr. Kent A. Smith, Deputy Director  
Dr. Harold M. Schoolman, Deputy Director for Research and Education  
Dr. Dennis Benson, Chief, Information Resource Branch, NCBI  
Mr. Kenneth Carney, Executive Officer, OD  
Dr. Milton Corn, Acting Associate Director, EP  
Dr. Michael Ackerman, Educational Technology Branch, LHNCBC  
Dr. George Cosmides, Deputy Associate Director, SIS  
Dr. Roger W. Dahlen, Chief, Biomedical Information Support Branch, EP  
Ms. Becky Lyon-Hartmann, Regional Medical Library Coordinator, LO  
Dr. George F. Hazard, Chemical Information Services Section, SIS  
Dr. Earl Henderson, Deputy Director, LHNCBC  
Ms. Betsy Humphreys, Deputy Associate Director, LO  
Mr. Charles R. Kalina, Special Projects Officer, OD  
Dr. Henry M. Kissman, Associate Director, SIS  
Mr. Sheldon Kotzin, Chief, Bibliographic Services Division, LO  
Dr. David J. Lipman, Director, National Center for Biotechnology Information  
Dr. Daniel R. Masys, Director, Lister Hill National Center for Biomedical  
Communications  
Mr. Robert B. Mehnert, Chief, Office of Inquiries and Publications  
Management, OD  
Mr. David Nash, EEO Officer  
Dr. Aaron Navarro, Deputy Director for Development, OCCS  
Dr. Elliot R. Siegel, Assistant Director for Planning and Evaluation, OD  
Dr. Melvin Spann, Biomedical Information Services Branch, SIS  
Mr. Richard T. West, Chief, Office of Program Planning and Evaluation, EP  
Mr. Theodore Youwer, Chief, Officer of Administrative Management Services

**Others present included:**

Dr. James O. Mason, Asst. Secretary for Health  
Dr. Rice C. Leach, Chief of Staff to the Surgeon General, PHS  
Dr. Lois E. DeBakey, Professor of Scientific Communications, Baylor College  
of Medicine, Consultant to Board of Regents  
Dr. John Faughnan, Asst. Prof., Dept. of Family Medicine, Michigan State  
University, Escabana, MI  
Dr. T. Posner Lowe, Neuroscientist, Washington, D.C.  
Ms. Anne Montgomery, Reporter, FDC Reports, Bethesda, MD

## **I. OPENING REMARKS**

Dr. Don E. Detmer, Chairman, welcomed the Regents and guests to the ninety-seventh meeting of the Board of Regents of the National Library of Medicine. He introduced Dr. Hogan, representing the US Navy, and consultant Dr. Lois DeBakey.

## **II. REMARKS FROM THE SURGEON GENERAL'S OFFICE**

Dr. Rice C. Leach, representing the Surgeon General, reported on a number of current activities of that office. Youth and alcohol is a high priority; recent estimates provide a disturbing glimpse of the incidence of drinking among teenagers. Dr. Leach cited several of the statistics. The Surgeon General has been working with wineries and breweries to curtail promotion to underage audiences. A second Surgeon General's report on AIDS will come out in December. Also in December will be a conference on "Healthy Children Ready to Learn." This is a White House initiative in which the Surgeon General will be working closely with the Department of Education. The Surgeon General recently held the tenth conference on agricultural safety and health (the ninth was 50 years ago). Agriculture is the nation's most dangerous occupation. Emphasis areas at the conference were to build coalitions, disseminate scientific information, increase awareness of the issue by the public at large, and to encourage action to prevent injuries. As one result of the Conference, a Surgeon General's report will be published. Dr. Leach briefly described the support role of Public Health Service officers in Desert Shield and Desert Storm.

## **III. CONSIDERATION OF MINUTES OF PREVIOUS MEETING**

The Regents approved without change the minutes of the February 28-March 1, 1991, meeting.

## **IV. DATES OF FUTURE MEETINGS**

The Board will meet next on October 23-24, 1991. The winter meeting, on January 30-31, 1992, was confirmed. The meeting for next spring was set for May 28-29, 1992. (Note: Next Spring's will be Board's the 100th meeting.)

## **V. REPORT FROM THE NLM DIRECTOR**

Donald A. B. Lindberg, M.D. reported that the President's proposed 1992 budget for the NLM (\$100.5 million) is very encouraging. This would be 10 percent over the FY 1991



appropriation (NIH overall would receive a six percent increase). What the Congressional appropriations action will be is unknown at this point. The President's budget would sustain NLM's outreach initiative at a level of \$6.2 million; the budget for AIDS information would be doubled, up to \$1 million; the High Performance Computing and Communications initiative would also receive some of the increase. Dr. Lindberg brought to the attention of the Regents the recent tragic death in an airplane crash of Dr. Nicholas Davies, former Regent and Chairman of the Board. The Board passed a Resolution recognizing Dr. Davies' outstanding contributions (Attachment B).

On legislative matters, the Director noted that two of the Library's programs--the Medical Library Assistance Act and the National Center for Biotechnology Information--require reauthorization by the Congress this year. These programs are not controversial and NLM does not anticipate a problem, unless they get caught up with bills that do contain controversial provisions (for example, concerning fetal tissue transplant research). Other bills important to the NLM are those reauthorizing the Paperwork Reduction Act and the High Performance Computing and Communications Act of 1991. The latter initiative was the subject of a March 1, 1991, letter from the Board of Regents to the HHS Secretary. On April 30, the Secretary replied concurring with the Board's position of support for the High Performance Computing and Communications program and saying that he will keep the importance of this initiative in mind when developing the 1993 budget. Dr. Lindberg said this support of the Board and the Secretary will be very helpful to the Library.

New contracts have been signed with the eight Regional Medical Libraries, the Director said. He noted that there are two major changes in the network: an eighth region has been created for New England (headquarters: University of Connecticut Health Center in Farmington), and the Houston Academy of Medicine/Texas Medical Center Library was selected to serve the south central area (region 5). Dr. Lindberg noted that the name of the network has been changed to the National Network of Libraries of Medicine (NN/LM). The Director then recounted NLM's involvement with private vendors in the preparation of compact disks containing MEDLINE. There are now about 10 such products on the market and they are increasingly popular. Because such CD-ROM systems are more and more being networked within institutions, NLM last year proposed to change the way in which it charges for leasing data to private vendors who wish to market CD-ROM products. In response to concerns expressed by the users about the proposed changes, the Library then reworked the pricing structure; the new policy met with general approval at last month's Medical Library Association meeting in San Francisco. The details of the pricing policy were included in the Regents' briefing book. Finally, Dr. Lindberg reported briefly on the recent meeting of the directors of training programs supported by NLM grants. The scope of the program is being broadened to include other health professionals in addition to physicians. Some 30 letters-of-intent have been received by NLM for the latest round of institutional training grants.

## **VI. NLM LONG-RANGE PLANNING INITIATIVE--UPDATE**

Before describing NLM planning activities, Dr. Elliot Siegel, NLM Assistant Director for Planning and Evaluation, noted that the new NIH Director has begun an ambitious long-range planning activity for the NIH. The planning will be conducted primarily by staff of the NIH and its various components; target date for the completed plan is February 1992. NLM has a lead role in developing the part of the plan concerning biomedical information and communication. The Board of Regents will be involved in reviewing and commenting on those portions of the plan. Turning to NLM's planning, Dr. Siegel said that the first planning session of the panel on toxicology has been set for October 2-3, 1991 (changed to October 31-November 1). Dr. Edward N. Brandt (former Regent), and Dr. Gilbert S. Omenn, have agreed to serve as panel co-chairs. The panel will be asked to look 20 years into the future and try to determine what should be NLM's role in serving the information needs of those concerned with toxicology and the environment. Dr. Siegel briefly described current staff work to gather information in preparation for the first meeting. Related to this planning effort is the ongoing investigation into whether NLM's TOXNET should be converted to a relational database system that would give it expanded capabilities; a panel of experts is meeting at NLM this week to consider the question. In addition to toxicology, two other areas are slated to be the subject of Long-Range Planning Panels in 1992, he said. These are Training Medical Librarians and International Programs.

Following Dr. Siegel's presentation, the Chairman discussed the role of the Board in the planning process. He said that any Regent was welcome to attend the Long-Range Planning Panel's meetings. After discussion, the Board agreed that its Planning Subcommittee will track the Panel's progress. The Panel's report, which will be submitted to the Regents, becomes an official report of the Board on acceptance. As to the future topics for long-range planning, Ms. Rachael Anderson commented that medical librarians are eager for NLM to take steps to help alleviate the shortage of--and upgrade the skills of--trained medical librarians. The proposed planning panel in this area is very welcome. She noted that the Medical Library Association has under way a study on medical librarian training. Dr. Lindberg commented that NLM will await that study's report before beginning its own long-range planning activity. Finally, Dr. Detmer commented that, with the political changes sweeping Europe and other parts of the world, the timing was right for NLM to engage in long-range planning related to its international commitments and responsibilities.

## **VII. INDEXING ACTIVITIES**

Mr. Sheldon Kotzin, Chief of the Bibliographic Services Division, described NLM's journal indexing process, which has been the backbone of bibliographic services since John Shaw Billings began the Index Medicus in 1879. Today it forms the heart not only of that monthly publication, but of the online database, MEDLINE. In 1990, almost 400,000 articles were

indexed from some 3,600 journals published around the world. Subject indexing involves scanning each article for essential information and describing its contents by assigning several subject headings from a vocabulary called MeSH (Medical Subject Headings). There are some 50 staff in the Indexing Section, almost all with advanced degrees in biomedical subjects or foreign languages. In addition, there are three firms under contract to NLM to do indexing. Six of the international MEDLARS Centers also perform indexing for NLM. Although only 12 percent of the initial indexing last year was done by NLM staff, all indexed citations are carefully reviewed by NLM experts before the information is released into the database. Mr. Kotzin characterized the nature of the 3600 journals being indexed by language and country of origin. Also, he briefly described the role of the Literature Selection Technical Review Committee in choosing journals to be indexed. Although the number of journals indexed grows somewhat slowly (about 100 a year), there have been more dramatic increases in the number of articles per issue, the number of author-written abstracts (which are entered into MEDLINE), the number of multi-authored articles, and the number of headings assigned by indexers to each article (now an average of 12). MEDLINE today has more than 6.5 million references dating back to 1966. Mr. Kotzin described the computer software that assists the indexers in their work. Highest priority articles are entered into the database within two months of publication date. He also described how NLM indexers link retractions and notices of errata back to the original citation. NLM recently commissioned a study to see how well the indexing was being done by comparing the headings assigned by NLM indexers with those identified by outside subject experts. Although some differences in emphases were noted and several suggestions for improvement resulted, the two groups compared quite favorably. Mr. Kotzin described the special collaborative effort between the Indexing Section and the National Center for Biotechnology Information to index information on nucleotide and amino acid sequences. Commenting on trends, he said that, although it is not now feasible to receive indexing and other information from the publishers in machine-readable form, they were investigating the possibility of scanners for inputting the descriptive data abstracts. Also, in the future it may be possible to develop even more machine-assisted indexing. "Flexi-place"--having indexers do much of their work at home is now being experimented with by four employees in the Indexing Section.

Mr. Joseph Howard, commenting on the presentation, said that indexing and cataloging are low-visibility but extremely important activities. They are truly the backbone of all information systems, including NLM's. Although the indexing done at NLM is unrivalled in the world, the Library must continue to be vigilant to see that it is not allowed to deteriorate from lack of attention and resources. He was glad to see NLM's indexing activities being discussed by the Board.

## VIII. PAPER PRESERVATION

Mr. Charles Kalina, NLM Special Projects Officer, reported on progress in the "permanent paper initiative," NLM's program to encourage the publication of medical materials on acid-free ("permanent") paper. This initiative has been previously reported several times to the Board. As a result of a Board of Regents' hearing on the use of permanent paper in early 1987, NLM established a Permanent Paper Task Force, with representation from editors, publishers, librarians, paper manufacturers and distributors, printers, and researchers. The Task Force strategy was to increase the general awareness of permanent paper as one response to the problem of deteriorating biomedical publications printed on acid-based paper. From the handful of Index Medicus titles that were published on acid-free paper when the Task Force began its work, the number has increased to about 35 percent, a significant gain, Mr. Kalina said. The titles that are on acid-free paper and carry a notice to that effect in the journal are identified as acid-free in the Index Medicus. NLM will continue with its permanent paper campaign. On October 25, 1991, following the next Board of Regents meeting, a special hearing will be held at NLM to report publicly on the progress and to honor those who have been most active in the campaign.

Following Mr. Kalina's presentation, Dr. Lois DeBakey, who was a co-chair of the Permanent Paper Task Force, commented that in 1987 there was only a luke-warm reception to the idea of medical publication on acid-free paper. Some questioned the very idea of the desirability of preserving the materials, arguing that electronic media would soon render them obsolete. Others thought the costs would be prohibitive. Nevertheless, the results of the campaign have vindicated its organizers, she said, and it has succeeded beyond our expectations. She said that the entire project demonstrates the leadership and foresight of NLM in an important area that was virtually being ignored by all.

## IX. AWARDS

Dr. Donald A. B. Lindberg, presented the 1991 Frank B. Rogers Award to Carolyn B. Tilley, Head of the MEDLARS Management Section of the Bibliographic Services Division. She was cited for her work in extending the availability of NLM's online services to librarians and health professionals throughout the nation.

Dr. Lindberg presented the 1991 NLM Director's Award to two NLM staff: Ms. Peri Schuyler, Head of the Medical Subject Headings Section, for her outstanding work to increase the utility of NLM's medical subject headings (MeSH) and for her support of the Unified Medical Language System; and Mr. Nelson C. Johnson, Head of the Serials Unit in the Collection Access Section, Public Services Division, for his exceptional skill in supervising the NLM's constantly expanding interlibrary loan service.

## **X. UPDATE ON OUTREACH ACTIVITIES**

Dr. Elliot Siegel, NLM Assistant Director for Planning and Evaluation, reported on recent NLM activities in working with individuals and local institutions to extend access to medical information. At the last meeting of the Board, the Regents heard from Eve Ruff, an outreach librarian in region 6 (Pacific Northwest). Since the last meeting, NLM has awarded new multi-year contracts to the regional medical libraries that places increased emphasis on outreach activities. In addition, another new outreach funding mechanism is the awarding of \$25,000 contracts to institutions and individuals to engage in specific outreach activities in their local areas. Dr. Siegel introduced to the Board one such awardee, John Faughnan, M.D., a family physician who practices in the upper peninsula of Michigan.

Using slides, Dr. Faughnan described his project to introduce MEDLINE searching via Grateful Med to health professionals in his remote rural area of Michigan. Forty of the 129 physicians in the area were included in the study (roughly 60 percent in primary care). The goal was to introduce these rural physicians and other health care providers to bibliographic database access. He described briefly how he did a needs assessment and then set up the pilot project. One problem is that the M.D. views Grateful Med as no more than a tool to be used in practice; it is sometimes difficult to persuade them of the importance of this kind of information to their daily practice. Also, although the Grateful Med requires a personal computer and incurs a cost (albeit small) for each search done, it produces no direct revenue to the doctor's practice. Although bibliographic searching can be a tool for keeping up with the literature ("surveillance"), Dr. Faughnan emphasized to the clinicians its role in problem-solving ("pursuit"). He discussed the different skills that had to be imparted to the physician/students before they could successfully use Grateful Med. The initial demonstrations were given in the well-attended noon hour CME (Committee Medical Education) setting, after doing considerable advertising and announcing in advance. After seeing the demonstrations, evening sessions were held for those who were really interested. Dr. Faughnan described the results in terms of how many of the students rated the sessions good or excellent. Although they rated the sessions highly, a relatively low proportion--60 percent--rated the value of the service to the patient as above average. The criterion for success in the project was to have 20 percent of physicians exposed to Grateful Med to have used the system at least once in the preceding two months at the one-year follow up. It appears that the goal will be reachable (the project is not yet a year old). Among the problems noted, Dr. Faughnan said that the poor quality of the local telephone lines resulted in an inordinate number of disconnects from the system.

Following Dr. Faughnan's presentation, Mr. Robert Mehnert, Public Information Officer, described the Library's plan to create a contractor-operated Outreach Services Center. Such a center would engage in outreach activities aimed at various audiences of health professionals--by writing articles, preparing news items for journals and newsletters read by

health professionals, and working closely with members of the National Network of Libraries of Medicine and with the Friends of the National Library of Medicine to create opportunities for outreach. An important task of the Center would be to prepare for publication a 12-page NLM Information Research Digest, a quarterly newsletter containing descriptions of the many research projects being conducted by the NLM and supported through grants and contracts around the country. Mr. Mehnert said that NLM hopes to make an award early in the next fiscal year. After a learning curve of several months, during which the contractor's staff would become familiar with NLM products and services, NLM hopes that productive work would begin in February 1992.

Following the presentations, Ms. Rachael Anderson commented that information outreach services, such as that described by Dr. Faughnan, are greatly needed. In response to her question as to whether the cost of a search was a major factor in restraining use, Dr. Faughnan said no, that users were pleased at the modest cost. He reiterated, however, that bibliographic searching is not a revenue-generating procedure. As to the Outreach Services Center, Ms. Anderson said that it will be very important for the Center to establish close and continuing relations with hospital and other librarians in the NN/LM. Dr. Lois DeBakey noted that the Center should be helpful in reaching underserved health professionals. Finally, Dr. Ronald Cape said that the Library must be sure not just to "preach to the converted," that it should make special efforts to reach those who seem to be resistant to the Library's message.

## **XI. REPORT FROM EXTRAMURAL PROGRAMS**

Dr. Milton Corn, Acting Associate Director for Extramural Programs, reported on the FY 1991 funding plans for Extramural Programs. There remain competing funds of \$1,562 million for all programs. Information Access and Fellowship Training grant funds will not be used up and will be allocated to meritorious applications in other categories.

Dr. Corn then discussed the "Shannon Awards," an imaginative administrative action by Dr. Healy, the new Director of NIH, who has for her discretionary use in FY 1991 \$30 million, funds never previously available to an NIH Director. Her intention is to do something for applicants who just missed the cut-off line. Those selected for the Shannon Award will be given \$100,000 over a two-year period, divided into \$80,000 for direct costs and \$20,000 for indirect costs. The actual budget requested by the investigator is not considered, nor do the \$20,000 indirect costs have anything to do with the indirect cost rate the institution has negotiated with the Federal Government. Each NIH institute will prepare a list of candidates who fit the criterion and will submit its recommendations by July 15 to Dr. Healy. The awards will be made on August 15.

Regarding the Request for Applications (RFA) for the Medical Informatics Research

Training Grant Program, Dr. Corn added a few remarks to what Dr. Lindberg had touched on earlier. The current seven training grants will terminate on June 30, 1992. They are now in their fifth and last year of funding. In response to the RFA, thirty letters-of-intent were received. NLM anticipates receiving about 25 applications. A special study group will review the applications. (A number of the applicants are member of the Biomedical Library Review Committee.) Extramural Programs plans to bring the applications to the October Board meeting.

Dr. Corn announced that NLM is rethinking and reevaluating its Information Access and IAIMS programs. Information Access grants, established just two years ago, were a direct outcome of the DeBakey Outreach Report on "Improving Health Professionals' Access to Information," which called for a large effort to improve and facilitate access to the national networks by small and medium libraries. Under the Information Access Grant these types of libraries were permitted to apply for a grant at NLM for up to \$12,000 for a single institution for a plan which would help their library to reach out to the community. Although some interesting applications have been received, the program has not been entirely successful. The information access funds requested by small and medium libraries have tended to be relatively unadorned requests for equipment.

On IAIMS, Dr. Corn commented that the program has worked well. It was initially conceived as a ten-year program in three phases. (Two programs are now in their eighth year.) NLM believes it would be worthwhile to see if IAIMS should be continued as is or modified in accordance with our experience over the last ten years.

Capt. Kathleen McCormick, Ms. Anderson and Ms. Carter agreed with the reasons for reevaluation of the Information Access and IAIMS criteria. They emphasized that it was important not to take away the only avenue these small hospitals and libraries have to get access funds and the only opportunity they have to participate. Dr. Lindberg assured them that it was not NLM's intention to abandon these small libraries. However, NLM would like to see the money used in a more constructive way.

In conclusion, Dr. Corn referred to the NIH response to the Congressional mandate that NIH change its financial management in the funding of grants. NIH has submitted its plan to Congress. Dr. Corn outlined the basic points of the NIH plan:

- The average length of a grant will be four years.
- The increase in average costs of new grants each year will be tied to the inflation index for scientific work.
- The indirect cost rate, which is negotiable for the first year of a new award, will be continued throughout the remainder

of the grant; i.e., it will not be adjusted each year, even if the institution has a readjusted rate.

- The concept of "approving" a grant is abolished. When a grant is reviewed by the initial review group (IRG), the group will have three options:

1. Deferral.
2. Not worthy of further consideration.
3. Assignment of a priority score.

In addition, the Congress had requested that the IRGs consider indirect costs in determining the value of the project. The NIH resisted this request. However, NIH has conceded, that NIH should look at the indirect and direct costs of the grant and has decided to make this a responsibility of the councils/boards. The mechanics have not been worked out, Dr. Corn said, but will be in place by the next Board meeting.

Before closing for the grant review part of the meeting, Dr. Detmer announced that Vice Admiral Zimble has retired as Surgeon General of the Navy and will assume the duties of President of the Uniformed Services University for the Health Sciences.

**MEETING CLOSED FOR THE REVIEW OF GRANT APPLICATIONS  
JUNE 20, 3:15p.m.**

**XII. REVIEW OF PENDING APPLICATIONS**

Before preceding with the consideration of pending applications, Dr. Roger W. Dahlen, Chief, Biomedical Information Support Branch, EP, asked Board members to be award of confidentiality and conflict-of-interest procedures included in the grant applications workbook and reminded them to sign, at the conclusion of the grant applications review, the statement noting that they had not participated in the discussion of any application which presented a conflict of interest.

The Board reviewed 73 applications, requesting \$13,831,920 and recommended for approval 52 applications in the amount of \$11,896,929 for the total years requested. 21 applications in the amount of \$1,934,991 were disapproved. Grant applications recommended for approval by the board are listed in the summary actions (Attachment D). Interim actions taken by the Extramural Programs staff since the February/March meeting were considered by the Board's Extramural Programs Subcommittee and noted and concurred with by the Board of Regents.



## MEETING OPEN -- JUNE 21 -- 9:00 A.M. TO ADJOURNMENT

### XIII. REPORT OF THE ASSISTANT SECRETARY FOR HEALTH

Dr. James O. Mason, HHS Assistant Secretary for Health, thanked Dr. Detmer for his leadership of the Board of Regents over the last year, and expressed his appreciation to all of the members for their work on the Board. He said that the Secretary recently announced a proposed major reorganization of the Alcohol, Drug Abuse, and Mental Health Administration (ADAMHA). Under the proposal, the three institutes of that agency (National Institute on Alcohol Abuse and Alcoholism, National Institute of Drug Abuse, and National Institute of Mental Health) would be transferred individually to the NIH. The ADAMHA would then focus on treatment and prevention services. Dr. Mason noted that Dr. Jarret Clinton, has been appointed to head the Agency for Health Care Policy and Research; NLM and the AHCPR are cooperating to establish the new Office of Health Services Research Information. He also reported on several items related to the Federal Coordinating Committee for Science, Engineering, and Technology: "Cross-cut" activities are being established that involve more than one Federal department or agency (e.g., science education is being promoted by several departments, including HHS); High Performance Computing and Communications, reported to the Board previously, is another cross-cutting activity. The NLM has received a modest increase in budget for its role related to the HPCC. This role involves making MEDLINE widely available (including on the INTERNET), ensuring that the health institutions are prepared to make full use of the National Research and Education Network as it develops over the next few years, continuing to develop the Unified Medical Language System and the Integrated Academic Information Management Systems, and continuing its work in medical informatics. The newest cross-cut activity involves the Biotechnology Research Subcommittee of the FCCSET Committee on Life Sciences and Health.

### XIV. NLM'S ONLINE CHEMICAL FILES

Dr. George Hazard of the Division of Specialized Information Services recounted the development of NLM's online chemical files--CHEMLINE and ChemID. The earlier, CHEMLINE, was begun in 1974 as an online dictionary of information about chemicals, useful in searching TOXLINE (Toxicology Information Online) and the other bibliographic NLM files. The primary source of CHEMLINE data was the Chemical Abstracts Service. Today there are more than a million CHEMLINE records. Using slides, Dr. Hazard showed what is contained in a typical CHEMLINE record and how usage of the database grew over the years until 1980, when Chemical Abstracts Service (CAS) mounted its own chemical information database and simultaneously increased the royalty fees NLM was required to pay for use of CAS data. From \$15 per connect hour, rates rose to more than \$100 per hour. NLM modified the CHEMLINE

content, using less CAS data and more data from other sources. This temporarily stabilized usage. Once again, however, increasing royalty payments required the NLM to take action to maintain usage. The result was the creation in 1990 of ChemID (chemical identification), a file that contained no data from the Chemical Abstracts Service and that was charged for at regular MEDLINE rates. Although ChemID contains 183,000 records, many less than CHEMLINE, the ChemID records are a good core set of biomedical and toxicological data. Dr. Hazard described the source lists of chemical records for ChemID, and he displayed sample records and discussed how they can be used. This included data from SUPERLIST, a new capability in ChemID which points to important regulatory or scientific lists.

#### **XV. REPORT ON BOARD OF SCIENTIFIC COUNSELORS, NCBI**

Dr. David Lipman, Director of the National Center for Biotechnology Information, reported on the April 5, 1991, meeting of the Board of Scientific Counselors. In addition to reviewing several NCBI projects, the Board formally reviewed the work of two senior scientists. The projects presented were the collaborative effort (with Library Operations) to build a sequence database from the journals covered by MEDLINE, plans for NCBI taking over the operation of GenBank, currently run by the National Institute of General Medical Sciences, and a demonstration of the new CD-ROM that the Regents will see later in this meeting. The project presentations and reviews of the senior scientists went well, Dr. Lipman said. The Counselors, however, did recommend that the NCBI develop a newsletter to keep the biomedical community aware of developments within the Center. Work has begun on the newsletter, he added.

#### **XVI. BIOTECHNOLOGY CD-ROM--ENTREZ: GENINFO**

Dr. Lipman said that although there are a number of computerized information resources in the field of molecular biology, they are not being utilized to their maximum potential. One reason for this is that access is not often convenient to the scientist. Another is that the systems themselves are not intuitive and easy to use. Dr. Lipman then proceeded to describe and demonstrate a new retrieval system known as ENTREZ, developed at the National Center for Biotechnology Information. Using a CD-ROM containing selected DNA sequences, protein sequences, and MEDLINE records in which the sequences were published, Dr. Lipman demonstrated how ENTREZ provides a new approach for gaining access to this information. The key feature of ENTREZ is its pre-computed tables of document and sequence similarity, so that the user can ask for "all the papers (or sequences) that are like this one." He said that the same approach, using text similarity, could be used in MEDLINE--to be able to ask for abstracts similar to one that is known to be relevant.

Following Dr. Lipman's presentation, Dr. Ruth Davis commented that ENTREZ exemplifies the best kind of technology application. It is important that the program be continued so that

its benefits can be used ultimately to improve the public's health. It is a quantum jump beyond bibliographic searching. Dr. Lipman and his staff have taken advantage of the latest technology that exists and have not tried to "invent the wheel." Pre-storing the "neighborings" and the various connectors is labor-intensive and could only be done centrally by an institution like the NCBI. The important next steps are to get ENTREZ out into the community and then to ensure that it is maintained. Dr. Robert Kahn asked whether some read/write medium (rather than ROM) could be used so that users could add their own entries or annotations. Dr. Lipman said the ability to store and annotate parts of the database, for example on a hard disk, was being looked into. The foundation is being laid for what Dr. Kahn suggests. In response to a question from Dr. Kahn about the utility of graphics in the database, Dr. Lipman said that they have not yet concentrated on entering protein structures graphically, although this might be desirable. Dr. Lipman noted that the database is updated frequently and a new CD-ROM will come out every two months. Ms. Wendy Carter and Ms. Rachael Anderson both made the point that although the major users of the new product will be scientists, medical librarians should be involved too. Librarians should be kept informed via presentations at meetings and publication in the NLM News.

## **XVII. EXPRESSION OF APPRECIATION**

Col. Howard Fauver moved that the Board of Regents express its appreciation to the Potomac Unit of the Herb Society of America for its continuing and dedicated service in maintaining the herb garden on the grounds of the National Library of Medicine. The resolution was seconded and passed unanimously. (Attachment C)

## **XVIII. ELECTION OF CHAIRMAN**

The committee to nominate a chairman for the Board of Regents for 1991-92 nominated Dr. Ruth M. Davis. The nomination was seconded and the Board unanimously elected Dr. Davis.

## **XIX. VIDEO PRESENTATION AND PC DEMO**

The last item on the agenda was the presentation by Mr. Mehnert of a video clip from the PBS Smithsonian World program, "From Information to Wisdom." The portion shown featured Dr. Edward Feigenbaum, former Regent. Following the video, Mr. Mehnert demonstrated PC software called Medical Computing Resource Guide, a floppy disk that contains descriptions of journals, books, software, networks, audiovisuals and other items of interest to computing physicians. Copies of the disk were made available to interested Regents.

**XX. ADJOURNMENT**

The meeting was adjourned at 11:45 a.m. on Friday, June 21.

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Subcommittee Meetings on Wednesday, June 19:

Extramural Programs Subcommittee--2:00 to 3:30 p.m.  
(Attachment E)

Planning Subcommittee--4:00 to 5:00 p.m.  
(Attachment D)

Full Board Meeting on Thursday and Friday  
June 20-21, 1991

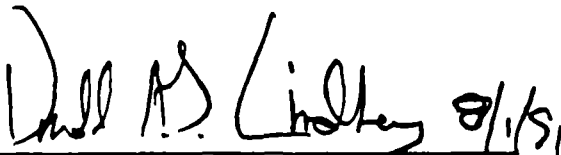
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**ACTIONS TAKEN BY THE BOARD OF REGENTS**

1. The Board passed a resolution in memory of Dr. Nicholas E. Davies and requested that it be sent to his widow (Attachment B).
2. The Board passed a resolution expressing its appreciation to the Potomac Unit of the Herb Society of America for its continuing service in maintaining the Herb Garden on the grounds of the National Library of Medicine (Attachment C).
3. The Board unanimously elected Dr. Ruth M. Davis Chairman for the coming year.
4. The Board concurred with recommendations of the Extramural Programs Subcommittee. Grant applications for approval are listed in the summary actions (Attachment F).

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

 8/1/91

Donald A. B. Lindberg, M.D. (Date)  
Executive Secretary

 8/16/91

Don E. Detmer, M.D. (Date)  
Chairman

## BOARD OF REGENTS OF THE NATIONAL LIBRARY OF MEDICINE

## CHAIRMAN

**DETMER, Don E., M.D.** (8/3/91)  
 Vice President for Health Sciences  
 University of Virginia  
 Box 179, Medical Center  
 Charlottesville, VA 22908 804-924-2444  
FAX 804-924-9967

<p><b>ANDERSON, Rachael K.</b> (8/3/94)            Director            Health Sciences Center Library            University of Arizona            1501 N. Campbell Ave.            Tucson, AZ 85724</p>	<p><u>602-626-6121</u>  <u>FAX 602-626-2831</u></p>	<p><b>DeNARDIS, Lawrence J., Ph.D.</b> (8/3/94)            President-designate            University of New Haven            300 Orange Ave.            West Haven, CT 06516</p>	<p><u>203-932-7000</u>  <u>FAX 203-937-0756</u></p>
<p><b>BEERING, Steven C., M.D.</b> (8/3/91)            President            Purdue University            West Lafayette, IN 47907</p>	<p><u>317-494-9708</u>  <u>FAX 317-494-7875</u></p>	<p><b>KAHN, Robert E., Ph.D.</b> (8/3/94)            President            Corporation for National            Research Initiatives            1895 Preston White Drive            Suite 100            Reston, VA 22091</p>	<p><u>703-620-8990</u>  <u>FAX 703-620-0913</u></p>
<p><b>CAPE, Ronald E., Ph.D.</b> (8/3/92)            Chairman            Cetus Corporation            1400 Fifty-Third Street            Emeryville, CA 94608</p>	<p><u>415-420-3300</u>  <u>FAX 415-420-4102</u></p>	<p><b>SMITH, Alvy Ray, Ph.D.</b> (8/3/92)            Executive Vice President            Altamira Software Co.            1001 W. Cutting Boulevard            Richmond, CA 94804</p>	<p><u>415-236-4000</u>  <u>FAX 415-236-0388</u></p>
<p><b>COHN, Lawrence H., M.D.</b> (8/3/93)            Chief of Cardiac Surgery            Department of Surgery            Brigham and Women's Hospital            75 Francis Street            Boston, MA 02115</p>	<p><u>617-734-8183</u>  <u>FAX 617-732-6559</u></p>	<p><b>SPURLOCK, Jeanne, M.D.</b> (8/3/93)            Deputy Medical Director, and            Director, Department of Minority            National Affairs            American Psychiatric Association            1400 K Street, N.W.            Washington, DC 20005</p>	<p><u>202-682-6093</u>  <u>FAX 202-682-6114</u></p>
<p><b>DAVIS, Ruth M., Ph.D.</b> (8/3/92)            President            The Pymatuning Group, Inc.            Suite 707            2000 N. 15th Street            Arlington, VA 22201</p>	<p><u>703-243-3993</u>  <u>FAX 703-527-7048</u></p>		

**EX OFFICIO MEMBERS****Primary****Alternate**

**BILLINGTON, James H., D. Phil.**  
 Librarian of Congress  
 Library of Congress  
 10 First Street, S.E.  
 Washington, DC 20540 202-707-5205

**ROWBERG, Richard E., Ph.D.**  
 Chief  
 Science Policy Research Division  
 Congressional Research Service  
 Library of Congress  
 10 First Street, S.E.  
 Washington, DC 20540 202-707-7040  
FAX 202-707-7000

**CLUTTER, Mary E., Ph.D.**  
 Asst. Director for Biological,  
 Behavioral, and Social Sciences  
 National Science Foundation  
 1800 G Street, N.W., Room 506  
 Washington, DC 20550 202-357-9854  
FAX 202-357-7059

**BROWNSTEIN, Charles N., Ph.D.**  
 Director, Directorate for Computer and  
 Information Science & Engineering  
 National Science Foundation  
 1800 G Street, N.W.  
 Washington, DC 20550 202-357-7936

**HOLSINGER, James W., Jr., M.D.**  
 Chief Medical Director  
 Veterans Health Services  
 and Research Admin. (10)  
 Dept. of Veterans Affairs  
 810 Vermont Avenue, N.W.  
 Washington, DC 20420 202-535-7010  
FAX 202-535-7630

**CARTER, Wendy, M.L.S.**  
 Chief, Public Services Section  
 Dept. of Veterans Affairs  
 810 Vermont Avenue, N.W. (142D)  
 Washington, DC 20420 202-535-7095  
FAX 202-535-7539

**HOWARD, Joseph H.**  
 Director, National Agricultural Library  
 U.S. Department of Agriculture  
 10301 Baltimore Boulevard  
 Beltsville, MD 20705 301-344-4248  
FAX 301-344-5472

**LEDFORD, Frank F., Jr., Lt. Gen., MC, USA**  
 The Surgeon General  
 Department of the Army  
 5111 Leesburg Pike  
 Falls Church, VA 22041-3258 703-756-0000

**FAUVER, Howard E., Jr., Col., MC, USA**  
 Chief  
 Graduate Medical Education Branch  
 U.S. Army Health Professional Support  
 Agency (SGPS-EDM)  
 5109 Leesburg Pike  
 Falls Church, VA 22041-3258 703-756-8036  
FAX 703-756-0243

**NOVELLO, Antonia C., M.D., M.P.H.**  
Surgeon General, PHS  
200 Independence Avenue, S.W.  
Washington, DC 20201  
202-245-6467  
FAX 202-245-2810

**McCORMICK, Kathleen A., R.N., Ph.D.**  
Director, Office of the Forum  
for Quality and Effectiveness  
in Health Care  
Parklawn Bldg., Room 18A-46  
5600 Fishers Lane  
Rockville, MD 20857  
301-227-6671  
FAX 301-227-6679

**MILLER, Monte B., Lt. Gen., USAF, MC**  
Surgeon General  
Department of the Air Force  
Bolling Air Force Base  
Washington, DC 20332-6188  
202-767-4343

**MAFFET, Charles K., Col., USAF, MC**  
Deputy Director, Professional Affairs and  
Quality Assurance (SGP)  
Bolling Air Force Base  
Washington, DC 20332-6188  
202-767-1849  
FAX 202-404-8089

Dean, Uniformed Services University  
of the Health Sciences  
F. Edward Hebert School of Medicine  
4301 Jones Bridge Road  
Bethesda, MD 20814-4799  
301-295-3013  
FAX 301-295-3627

**ZIMBLE, James A., Vice Adm., MC, USN**  
Surgeon General  
Office of the Chief of Naval  
Operations (OP-093)  
Department of the Navy  
Washington, DC 20350-2000  
202-697-0587

**KEMP, David G., Capt., MC, USN**  
Commanding Officer, Naval Health  
Sciences, Education and Training Command  
Department of the Navy  
Bethesda, MD 20814-5022  
301-295-0293  
FAX 301-295-2374

**EXECUTIVE SECRETARY**

**LINDBERG, Donald A. B., M.D.**  
Director  
National Library of Medicine  
Bethesda, MD 20894 301-496-6221

DEPARTMENT OF HEALTH &amp; HUMAN SERVICES

Public Health Service

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National Institutes of Health  
National Library of Medicine  
Bethesda MD 20894

June 20, 1991

Mrs. Garland H. Davies  
495 Westover Drive, N.W.  
Atlanta, Georgia 30309

Dear Mrs. Davies:

As Chairman of the Board of Regents of the National Library of Medicine, it is both my sorrow and my privilege to send to you the attached official statement from the Regents, expressing the Board's high regard for Nick and its sincere sympathy for you and your children.

Please accept my own personal condolences as well.

Sincerely yours,



Don E. Detmer, M.D.  
Chairman, Board of Regents  
National Library of Medicine

Enclosure



**RESOLUTION OF THE BOARD OF REGENTS OF THE  
NATIONAL LIBRARY OF MEDICINE**

The Board of Regents, National Library of Medicine, commemorates in its meeting today, June 20, 1991, the outstanding contributions of its former member and chairman, Nicholas E. Davies.

The Board pays tribute to this long-time friend of the Library, who was also a devoted personal friend to many of us now serving on the Board. His term as chairman (1980-1981) was a period in which, under his excellent leadership, the Board passed a number of resolutions important to the Library's history. We will always be grateful for his humor, vision, and practicality as he strove to bring the advances of medicine closer to those who could best use this information to improve the quality of healthcare in the Nation.

The Board expresses its heartfelt condolences to Nick's wife, Garland, and to their children. We hope that, in their sorrow, they will take consolation in the lasting contributions Nick made to the Library and to the entire biomedical community--both of which he loved and served so generously.



## DEPARTMENT OF HEALTH &amp; HUMAN SERVICES

Public Health Service

National Institutes of Health  
National Library of Medicine  
Bethesda MD 20894

July 18, 1991

Mrs. Bernice Pivarnik  
Chairman  
Potomac Unit of the  
Herb Society of America  
8611 Regor Lane  
Annandale, Virginia 22003

Dear Mrs. Pivarnik:

It is with great pleasure that I send to you a Resolution passed by the Board of Regents of the National Library of Medicine on the dedicated work your Society has been doing to preserve the herb garden in front of our Library. The garden was observed by one of our Board members during our June Board meeting, while strolling along its pathway, and he delighted the Board Chairman with his tale of discovery. A brochure about the herb garden is being prepared by Ms. Patricia Kenny, and we look forward to its eventual publication.

The Regents wanted you and especially Mrs. Schramm to know their appreciation for your continuing care of this lovely garden.

Yours truly,

Donald A. B. Lindberg, M.D.  
Director

Enclosure

cc: Mrs. Ann Schramm  
Curator of the National  
Library of Medicine  
Herb Garden

Ms. Patricia Kenny

**RESOLUTION OF THE BOARD OF REGENTS OF THE  
NATIONAL LIBRARY OF MEDICINE**

**June 21, 1991**

**The Board of Regents, its Chairman, Dr. Don E. Detmer, and the Director of the National Library of Medicine, Dr. Donald A. B. Lindberg, express their appreciation to the Potomac Unit of the Herb Society of America for its continuing and dedicated service in maintaining the herb garden on the grounds of the National Library of Medicine.**

**BOARD OF REGENTS  
PLANNING SUBCOMMITTEE MEETING**

**June 19, 1991  
4:00 p.m. to 5:00 p.m.**

**Subcommittee Members Present:**

Col. Howard Fauver  
Dr. Lois DeBakey (consultant)

**Subcommittee Members Absent:**

Dr. Don E. Detmer  
Dr. Robert E. Kahn  
Dr. Mary E. Clutter

**NLM Staff Present:**

Mr. Kent Smith  
Dr. Elliot Siegel  
Ms. Susan Buyer  
Dr. Henry Kissman  
Dr. James Ferguson  
Mr. Robert Mehnert

The subcommittee met to prepare for two agenda items for the full Board meeting on the following day: an Update on Outreach Activities, and the NLM Long-Range Planning Initiative.

For the Outreach presentation, Mr. Mehnert summarized the current status of the Outreach Services Center to be performed under contract for NLM. Dr. Siegel briefly described the presentation which would be made to the Board by Dr. John Faughnan, a family practitioner from Escanaba, Michigan, on his project to introduce GRATEFUL MED to rural physicians.

Dr. Siegel then summarized what he would tell the Board on the Long-Range Plan: Dr. Edward Brandt and Dr. Gilbert Omenn have accepted co-chairmanship of the Toxicology Planning Panel; the list of possible panel members is being refined with the co-chairs, and the first meeting will be in the fall of 1991. He also noted the status of two other planning panels on the training of medical librarians and NLM's international programs. Lastly, Dr. Siegel informed the Subcommittee about the NIH strategic planning activities, and of the need for NLM to be a part of that process.

The meeting adjourned at 5:00 p.m.

**BOARD OF REGENTS**  
**EXTRAMURAL PROGRAMS SUBCOMMITTEE MEETING**

**June 19, 1991**

**2:00 to 3:30 p.m.**

**A T T E N D E E S**

**Subcommittee Members Present:**

Ms. Rachael K. Anderson  
Col. Charles K. Maffet

**Subcommittee Members Absent:**

Dr. Steven C. Beering  
Capt. Kathleen McCormick

**NLM Staff Present:**

Mrs. Ruth E. Bortz, Grants Management Specialist, EP  
Mr. Brian Campbell, Administrative Officer, EP  
Mr. Peter A. Clepper, Program Officer, EP  
Mrs. Karin K. Colton, Committee Management Assistant, EP  
Dr. Milton Corn, Acting Associate Director, EP  
Dr. Roger W. Dahlen, Chief, Biomedical Information Support Branch, EP  
Ms. Andrea Epstein, Grants Assistant, EP  
Ms. Ellen Meltzer, Grants Management Specialist, EP  
Mr. Richard T. West, Chief, Office of Program Planning and Evaluation, EP

APPLICATIONS APPROVED BY COUNCIL  
 (ARRANGED NUMERICALLY BY PROGRAM)  
 PROG. CLASS: NATIONAL LIBRARY OF MEDICINE

COUNCIL DATE: MAY 1991

APPLICATION NUMBER	PROJECT TITLE	AMOUNTS RECOMMENDED
1 G07 LM05238-01A1	NEVADA HEALTH SCIENCE INFORMATION ACCESS PROGRAM	01A1 165,087
1 G07 LM05256-01A1	INFRASTRUCTURE FOR A SHARED INTEGRATED LIBRARY SYSTEM	01A1 11,965
1 G07 LM05262-01A1	ENHANCED INFORMATION ACCESS FOR END-USERS	01A1 215,955
1 G07 LM05283-01	INFORMATION ACCESS FOR INCREASING HEALTH CARE	01 12,000
1 G07 LM05312-01	J.C. BLAIR MEMORIAL HOSPITAL LIBRARY COMPUTER SYSTEM	01 8,075
1 G07 LM05316-01	CD ROM IN A MULTI-TYPE CONSORTIUM: THE CHI EXPERIENCE	01 86,480
1 G07 LM05319-01	VILLA ACCESS GRANT	01 7,845
1 G07 LM05321-01	INFORMATION LITERACY THRU INFORMATION ACCESS	01 12,000

APPLICATIONS APPROVED BY COUNCIL  
(ARRANGED NUMERICALLY BY PROGRAM)  
PROG. CLASS:

COUNCIL DATE: MAY 1991

INSTITUTE/DIVISION: NATIONAL LIBRARY OF MEDICINE

APPLICATION NUMBER	PROJECT TITLE	AMOUNTS RECOMMENDED
1 G07 LM05337-01	IMPROVING CONSORTIUM LINKAGE VIA TECHNOLOGICAL PARITY	01 164,169
1 G07 LM05338-01	HOSPITAL LIBRARY AUTOMATION	01 11,315
1 G07 LM05341-01	LIBRARY BUSINESS INFORMATION SERVICE	01 10,494

APPLICATIONS APPROVED BY COUNCIL  
 (ARRANGED NUMERICALLY BY PROGRAM)  
 PROG. CLASS:

COUNCIL DATE: MAY 1991

INSTITUTE/DIVISION: NATIONAL LIBRARY OF MEDICINE

APPLICATION NUMBER	PROJECT TITLE	AMOUNTS RECOMMENDED
1 G08 LM05325-01	COMP MEDICAL LIBRARY ONLINE INFORMATION SYSTEM	01 70,150 02 25,592
1 G08 LM05329-01	IAIMS MODEL DEVELOPMENT - PHASE II	01 203,752 02 197,702 03 199,763
1 G08 LM05331-01	LOCAL AND WIDE AREA PUBLIC ACCESS MEDLINE NETWORK	01 149,755



APPLICATIONS APPROVED BY COUNCIL  
 (ARRANGED NUMERICALLY BY PROGRAM)  
 PROG. CLASS:

COUNCIL DATE: MAY 1991

INSTITUTE/DIVISION: NATIONAL LIBRARY OF MEDICINE

APPLICATION NUMBER	PROJECT TITLE	AMOUNTS RECOMMENDED
1 R01 LM04685-01A2	SCIENTIFIC AND SOCIAL ORIGINS OF ANESTHESIA BEFORE 1846	01A2 9,700 02 3,400
2 R01 LM04864-04	PHYSICIAN-COMPUTER INTERACTION USING GRAPHICS AND SPEECH	04 192,138 05 200,935 06 220,493
2 R01 LM04896-04	DUALS SECONDARY REVIEW: HG CLONED DNA BY CHROMOSOME LOCATION	04 60,064 05 62,598 06 67,491 07 70,351 08 74,283
2 R01 LM04957-04	REPRESENTATION IN MOLECULAR BIOLOGY	04 161,649 05 202,653 06 217,099 07 230,095 08 244,043
2 R01 LM04965-03	COMPUTER REPRESENTATION/REDUCTION OF CHROMOSOME MAP DATA	03 177,439 04 166,525 05 176,156 06 186,365 07 197,187
2 R01 LM04969-04	DUALS SECONDARY REVIEW: GM COMPARISON OF PROTEIN SEQUENCES AND STRUCTURES	04 88,529 05 82,336 06 88,870 07 91,324
2 R01 LM04971-04	FUNCTIONAL MOTIFS IN BIOLOGICAL SEQUENCES	04 139,760 05 144,508 06 150,613

APPLICATIONS APPROVED BY COUNCIL  
(ARRANGED NUMERICALLY BY PROGRAM)

MAY 1991

COUNCIL DATE:

INSTITUTE/DIVISION: NATIONAL LIBRARY OF MEDICINE

APPLICATION NUMBER	PROJECT TITLE	AMOUNTS RECOMMENDED
1 R01 LM05181-01A1	NATURE, BENEFITS & RISKS IN END-USER SEARCH OF MEDLINE	01A1 161,101 02 130,162
1 R01 LM05263-01A1	COMPUTATIONAL APPROACHES TO PROTEIN STRUCTURE PREDICTION	01A1 100,285 02 115,114 03 150,518
1 R01 LM05269-01A1	DIGITAL SIGNAL PROCESSING METHODS FOR BIOSEQUENCE SEARCH	01A1 110,430 02 104,392
1 R01 LM05272-01	THE TISSOT/ZIMMERMANN CORRESPONDENCE	01 25,000 02 14,000
1 R01 LM05276-01A1	ANALYZING BIOLOGICAL SEQUENCES WITH MACHINE LEARNING	01A1 174,188 02 162,182 03 172,186
1 R01 LM05310-01	THE BLACK HOSPITAL MOVEMENT 1920-1945	01 14,842
1 R01 LM05311-01	STOCHASTIC TREES AND STOCHASTIC FACTORING	01 48,566 02 50,997
1 R01 LM05314-01	DUALS SECONDARY REVIEW: HL SOCRATIC DIALOGUE IN BLOOD-BANK TUTORING SYSTEMS	01 86,799 02 91,992 03 98,244

APPLICATIONS APPROVED BY COUNCIL  
 (ARRANGED NUMERICALLY BY PROGRAM)  
 PROG. CLASS:

COUNCIL DATE: MAY 1991

INSTITUTE/DIVISION: NATIONAL LIBRARY OF MEDICINE

APPLICATION NUMBER	PROJECT TITLE	AMOUNTS RECOMMENDED
1 R01 LM05320-01	HISTORY AND CULTURE OF HUMAN NUTRITION	01 25,000
1 R01 LM05323-01	DEVELOPMENT OF A SEMANTIC PARSER FOR MEDICAL TEXT	01 158,698 02 167,933 03 179,362 04 188,056
1 R01 LM05326-01	AMERICAN MEDICAL RESEARCH & ANTIVIVISECTION 1900-1990	01 16,987 02 13,876
1 R01 LM05330-01	THE LIFE AND TIMES OF MARIE ZAKRZEMSKA (1829-1909)	01 24,900 02 13,514 03 15,702
1 R01 LM05333-01	AN INTELLIGENT COMPUTER CONSULTANT FOR CRITICAL CARE	01 171,939 02 181,963 03 192,007 04 202,463 05 213,609
1 R01 LM05334-01	DOING PHYSIC: SOUTHERN DOCTORS & THEIR WORK, 1800-1880	01 24,953 02 25,000
1 R01 LM05339-01	A HISTORY OF THE PREMATURE INFANT NURSERY IN THE UNITED	01 25,000 02 25,000 03 25,000
1 R01 LM05340-01	DEVELOPMENTAL DISABILITIES ISSUES	01 19,700 02 20,488 03 21,508

APPLICATIONS APPROVED BY COUNCIL  
 (ARRANGED NUMERICALLY BY PROGRAM)  
 PROG. CLASS: NATIONAL LIBRARY OF MEDICINE

COUNCIL DATE: MAY 1991

APPLICATION NUMBER	PROJECT TITLE	AMOUNTS RECOMMENDED
1 R29 LM05194-01A1	AUTOMATED CONCEPTUAL LINKAGE BETWEEN MEDICAL DATABASES	01A1 75,968
		02 68,104
		03 68,531
		04 68,664
		05 68,474

APPLICATIONS APPROVED BY COUNCIL  
(ARRANGED NUMERICALLY BY PROGRAM)

COUNCIL DATE: MAY 1991

INSTITUTE/DIVISION: NATIONAL LIBRARY OF MEDICINE

APPLICATION NUMBER	PROJECT TITLE	AMOUNTS RECOMMENDED
1 R43 LM05343-01	PROBABILITY AND STATISTICS FUNCTIONS FOR MLAB	37,840
1 R43 LM05345-01	PILOT SITE STUDY OF A JOURNAL ARTICLE MANGEMENT SYSTEM	40,104
1 R43 LM05347-01	MACHINE READING OF GRAPHICS USING NEURAL NETWORKS	42,659
1 R43 LM05349-01	COMPUTER-BASED SYSTEM TO DETERMINE FUNCTIONAL CAPACITY	49,776
1 R43 LM05353-01	NEURAL NET AND CELLULAR AUTOMATA EXTENSIONS TO MLAB	38,560
1 R43 LM05354-01	DUALS SECONDARY REVIEW: FD COMPUTERIZED RISK ASSESSMENT SYSTEM FOR MEDICAL DEVICES	43,314
1 R43 LM05355-01	MACHINE-GENERATED CONTEXTS FOR INFORMATION RETRIEVAL	49,957
1 R43 LM05356-01	DUALS SECONDARY REVIEW: HG A WORKSTATION FOR RAPID GENOME ANALYSIS	29,238

APPLICATIONS APPROVED BY COUNCIL  
(ARRANGED NUMERICALLY BY PROGRAM)  
PROG. CLASS:

COUNCIL DATE: MAY 1991

INSTITUTE/DIVISION: NATIONAL LIBRARY OF MEDICINE

APPLICATION NUMBER	PROJECT TITLE	AMOUNTS RECOMMENDED
2 R44 LM05161-02A1	DUALS SECONDARY REVIEW: CA USING COMPUTER ANIMATION IN HEALTH EDUCATION VIDEOS	02A1 274,410 03 224,500

APPLICATIONS APPROVED BY COUNCIL - DUAL REVIEW  
(ARRANGED NUMERICALLY)

COUNCIL DATE: MAY 1991

INSTITUTE/DIVISION: NATIONAL LIBRARY OF MEDICINE

APPLICATION NUMBER	PROJECT TITLE	AMOUNTS RECOMMENDED
2 R01 GM41484-04A2	DUALS SECONDARY REVIEW: LM STABILITY OF NATIVE AND ALTERED PROTEINS	04A2 69,491 05 65,554 06 70,973
1 R01 HD26427-01A1	DUALS SECONDARY REVIEW: LM DEVELOPMENT OF A COMPUTERIZED PRENATAL CARE SYSTEM	01A1 223,085 02 249,062 03 193,295
1 R01 HG00203-01A1	DUALS SECONDARY REVIEW: LM DATABASE AND COMPUTER TOOLS FOR GENOME MAPPING	01A1 303,861 02 206,632 03 224,890
1 R01 HG00553-01	DUALS SECONDARY REVIEW: LM THE HISTORY OF THE GENETICS OF BLOOD GROUPS 1900 1950	01 29,461 02 58,367

DEPARTMENT OF HEALTH AND HUMAN SERVICES  
NATIONAL INSTITUTES OF HEALTH  
NATIONAL LIBRARY OF MEDICINE  
Bethesda, Maryland

A G E N D A

98th Meeting of the

BOARD OF REGENTS

9:00 a.m., October 23-24, 1991

Board Room  
Mezzanine of  
National Library of Medicine

MEETING OPEN: 9:00 a.m. to 4:45 p.m. on October 23 and from 9:00 a.m. to adjournment on October 24.  
MEETING CLOSED: 4:45 p.m. to 5:15 p.m. on October 23 for the review of grant applications.

1. CALL TO ORDER AND INTRODUCTORY REMARKS Dr. Ruth M. Davis
2. REMARKS BY THE ASSISTANT SECRETARY FOR HEALTH Dr. James O. Mason
3. REMARKS FROM THE SURGEON GENERAL'S OFFICE Dr. Rice C. Leach
4. CONSIDERATION OF JUNE MINUTES TAB I Dr. Ruth M. Davis  
(Agenda Book)
5. FUTURE MEETING DATES Dr. Ruth M. Davis

Winter Meeting: Jan. 30-31, 1992 (Th-F)--CONFIRMED  
Spring Meeting: May 28-29, 1992 (Th-F)--CONFIRMED  
Fall Meeting: Oct. 1-2, 1992 (Th-F)--PROPOSED

(Subcommittees meet, when necessary, the day before the full Board.)  
(On October 22, the Extramural Programs Subcommittee from 2:00 - 3:30.)

COFFEE BREAK

6. REMARKS BY THE DIRECTOR, NIH Dr. Bernadine Healy

9/30/91



**Agenda, Board of Regents' Meeting, October 23-24, 1991**

**2**

7. REMARKS BY THE DIRECTOR, NLM                    TAB II  
Discussion  
Dr. Donald A.B. Lindberg  
Board Members
8. UPDATE ON OUTREACH ACTIVITIES                TAB III  
a. Massachusetts End-User Outreach Project                    TAB A  
b. Report on Historically Black Colleges and Universities Toxicology Panel Meeting                    TAB B  
Discussion  
Dr. Elliot Siegel  
Ms. Elaine Alligood  
Dr. Melvin Spann  
Ms. Rachael K. Anderson,  
Dr. Jeanne Spurlock,  
Discussants  
Board Members
- LUNCHEON CATERED IN CONFERENCE ROOM "B"                    12:20- 1:15
9. VIRTUAL NOTEBOOK SYSTEM                    TAB IV  
Discussion  
Dr. G. Anthony Gorry  
Dr. Robert E. Kahn,  
Discussant  
Board Members
10. UPDATE ON VISIBLE HUMAN PROJECT                TAB V  
a. Presentation of Project by University of Colorado  
Discussion  
Dr. Daniel R. Masys  
Dr. Victor M. Spitzer  
Dr. David G. Whitlock  
Dr. Alvy Ray Smith,  
Discussant  
Board Members
- COFFEE BREAK
11. BOARD REVIEW OF NIH STRATEGIC PLAN  
Board Members

12. REPORT FROM EXTRAMURAL PROGRAMS TAB VI Dr. Milton Corn  
EP Subcommittee,  
Discussants
- a. Budget and Funding Plans Tab A
  - b. Status of Information Access and System Resource Grant Program
  - c. Status of Training Fellowships
  - d. IAIMS
- Discussion Board Members

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MEETING CLOSED FOR THE REVIEW OF GRANT APPLICATIONS, OCTOBER 23, 4:45 P.M.

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13. REVIEW OF GRANT APPLICATIONS (Application Workbook) Dr. Roger W. Dahlen  
(Conflict-of-interest instructions in front of workbook for your information and review.)
- RESEARCH TAB I
- A. Medical Informatics Tab A
  - B. Biotechnology Tab B
  - C. Library and Information Science Tab C
- RESOURCE TAB II
- A. Information Systems Tab A
  - B. Information Access Tab B
- PUBLICATION GRANT APPLICATIONS TAB III
- TRAINING GRANT APPLICATIONS TAB IV
- SUMMARY LIST OF DISAPPROVED APPLICATIONS TAB V
- INTERIM ACTIONS TAB VI

R E C E S S \* \* \* \* \*

DINNER . . . . . BETHESDA NAVAL OFFICERS' CLUB
Cocktails . . . . . 6:30 p.m. Bethesda, Maryland
Dinner . . . . . 7:30 p.m. "BRIDGE ROOM"

SPEAKER: Dr. Robert A. Whitney, Jr.
Director, National Center for Research Resources, NIH

TITLE: "Conservation and Production of Non-Human Primates for
Biomedical Research."

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R E C O N V E N E: THURSDAY, 9:00 A.M., BOARD ROOM

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- 14. REPORT ON ADVISORY PANEL ON RELATIONAL DATABASE SYSTEM FOR TOXICOLOGY
Discussion
15. STATUS REPORT AND DEMONSTRATION OF COACH
Discussion
COFFEE BREAK
16. LOANSOME DOC SAILS FORWARD
Discussion
17. INTERACTIVE VISUALIZATION - A VIDEO REVIEW

**DEPARTMENT OF HEALTH AND HUMAN SERVICES**

**NATIONAL INSTITUTES OF HEALTH  
NATIONAL LIBRARY OF MEDICINE**

**BOARD OF REGENTS  
MINUTES OF THE 98TH MEETING  
OCTOBER 23-24, 1991**

**BOARD ROOM  
NATIONAL LIBRARY OF MEDICINE  
BETHESDA, MARYLAND**

**DEPARTMENT OF HEALTH AND HUMAN SERVICES  
PUBLIC HEALTH SERVICE**

**THE BOARD OF REGENTS OF THE NATIONAL LIBRARY OF MEDICINE**

**Minutes of Meeting 1/2/  
October 23-24, 1991**

The Board of Regents of the National Library of Medicine was convened for its ninety-eighth meeting at 9:00 a.m. on Wednesday, October 23, 1991, in the Board Room of the National Library of Medicine, Bethesda, Maryland. Dr. Ruth M. Davis, President of The Pymatuning Group, chaired the meeting. In accordance with P.L. 92-463 and the Determination of the Director, NIH, as announced in the Federal Register on September 16, 1991, the meeting was open to the public from 9:00 a.m. to 4:55 p.m. on October 23 and from 9:00 to 11:50 a.m. on October 24. The meeting was closed from 4:55 to 5:20 p.m. on October 23 for the review, discussion, and evaluation of grant applications. A Board roster is enclosed under Attachment A.

**Board members present were:**

Dr. Ruth M. Davis, Chair	Dr. Robert E. Kahn
Ms. Beverly E. Allen	Mr. Joseph H. Howard
Ms. Rachael K. Anderson	Dr. Alvy Ray Smith
Dr. Mary E. Clutter (10/23)	Dr. Jeanne Spurlock
Dr. Lawrence H. Cohn (10/24)	Dr. H. Kenneth Walker

**Alternates to ex officio members present were:**

Ms. Wendy Carter, representing Dr. James W. Holsinger, Jr.  
Dr. James A. Zimble, President, Uniformed Services University of the Health Sciences  
Col. Howard E. Fauver, representing Lt. Gen. Frank F. Ledford, Jr.  
Capt. David G. Kemp, representing Vice Adm. Donald F. Hagen.  
Capt. Kathleen A. McCormick, representing Dr. Antonia C. Novello.  
Col. Jacqueline Morgan, representing Lt. Gen. Alexander M. Sloan.

**Unable to attend:**

Dr. Ronald E. Cape  
Dr. Lawrence J. DeNardis  
Dr. Richard E. Rowberg

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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. Only when an application is under individual discussion will the Board member absent himself/herself. This procedure does not apply to "en bloc" actions.

**2/** The Board of Regents, when considering the extramural programs of NLM, also constitutes and serves as the National Libraries Assistance Advisory Board.

**National Library of Medicine staff members attending this meeting included:**

Dr. Donald A. B. Lindberg, Director  
Dr. Harold M. Schoolman, Deputy Director for Research and Education  
Mr. Kenneth Carney, Executive Officer, OD  
Ms. Lois Ann Colaianni, Associate Director, LO  
Dr. Milton Corn, Acting Associate Director, EP  
Dr. Michael Ackerman, Educational Technology Branch, LHNCBC  
Dr. Roger W. Dahlen, Chief, Biomedical Information Support Branch, EP  
Ms. Becky Lyon-Hartmann, Regional Medical Library Coordinator, LO  
Dr. George F. Hazard, Chemical Information Services Section, SIS  
Dr. Earl Henderson, Deputy Director, LHNCBC  
Dr. Richard K. C. Hsieh, Director for International Programs  
Ms. Betsy Humphreys, Deputy Associate Director, LO  
Mr. Charles R. Kalina, Special Projects Officer, OD  
Dr. Lawrence C. Kingsland III, Chief, Computer Science Branch, LHNCBC  
Dr. Henry M. Kissman, Associate Director, SIS  
Dr. David J. Lipman, Director, National Center for Biotechnology Information  
Mr. James S. Main, Chief, Audiovisual Program Development Branch, LHNCBC  
Dr. Daniel R. Masys, Director, Lister Hill National Center for Biomedical Communications  
Mr. Robert B. Mehnert, Chief, Office of Inquiries and Publications Management, OD  
Mr. David Nash, EEO Officer  
Dr. Elliot R. Siegel, Assistant Director for Planning and Evaluation, OD  
Dr. Sidney Siegel, Chief, Office of Hazardous Substances Information, SIS  
Dr. Melvin Spann, Biomedical Information Services Branch, SIS  
Mr. Bruno M. Vasta, Chief, Biomedical Files Implementation Branch, SIS  
Dr. Charles A. Walker, Special Expert, OD  
Mr. Richard T. West, Chief, Office of Program Planning and Evaluation, EP

**Others present included:**

Dr. James O. Mason, Asst. Secretary for Health  
Dr. Rice C. Leach, Chief of Staff to the Surgeon General, PHS  
Dr. Carl Kupfer, Actg. Deputy Dir. for Intramural Research, NIH, and Dir., National Eye Institute, NIH  
Dr. G. Anthony Gorry, V.P. for Info. Technology, Baylor College of Medicine, Houston  
Dr. Victor M. Spitzer, Asst. Prof., Univ. of Colorado, Denver, CO  
Dr. David G. Whitlock, Professor, Univ. of Colorado, Denver, CO  
Dr. Gio Wiederhold, Chairman, Computer Science Dept., Stanford, CA  
Ms. Elaine Alligood, Asst. Librarian for Access Services, Countway Library of Medicine, Boston, MA

## **I. OPENING REMARKS**

**Dr. Ruth M. Davis, Chair, welcomed the Regents and guests to the ninety-eighth meeting of the Board of Regents of the National Library of Medicine. She introduced new Regents Ms. Beverly E. Allen, Dr. H. Kenneth Walker, and Col. Jacqueline Morgan, USAF, and consultants and guests Ms. Elaine Alligood, Dr. G. Anthony Gorry, Dr. Victor M. Spitzer and Dr. David G. Whitlock.**

## **II. REMARKS FROM THE ASSISTANT SECRETARY FOR HEALTH**

**Dr. James O. Mason, HHS Assistant Secretary for Health, congratulated the Board and the Library for its success in the campaign to persuade medical publishers to use permanent paper. He commented about NLM's current long-range planning activity in the area of toxicology and the environment, noting that the PHS has four agencies concerned with this subject--the NIH, FDA, Centers for Disease Control, and the Agency for Toxic Substances and Disease Registry. Dr. Mason chairs a PHS committee called the Coordinating Committee for Environmental Health Research Programs that includes the four agencies and the EPA. He said that NLM's toxicology-related databases and information services are essential to the work of this committee, and he is glad to hear that the Library is taking a look at future needs in this area. He reiterated his support for NLM's involvement in High Performance Computing and Communications (HPCC). Although the NLM 1991 budget for HPCC was only \$3 million, he is hopeful for an increase for 1992. Dr. Mason noted that two press releases issued by the Library in the past two weeks--one on a biotechnology-related subject (Kallmann's Syndrome) and one on the "Visible Human"--have a direct relation to the potential for High Performance Computing and Communications. Finally, the Assistant Secretary added his support to the concept of the "community services workstation," which will be described and demonstrated later in this meeting by Dr. G. Anthony Gorry. This project is at the cutting edge of technology and offers a unique tool for health and human services providers. He hopes that NLM will continue its leadership role in developing and disseminating this kind of useful and user-friendly technology.**

**In response to a question from Dr. Davis, Dr. Mason said that the role and importance of the NLM is not fully appreciated by the Congress and the Administration. He said the Library must be forthright in proclaiming the value of its services to biomedicine--not only what it has done, but what it is capable of doing. One example of this is NLM's role in the area of the practice guidelines being developed by the Agency for Health Care Policy and Research. Setting these guidelines is absolutely dependent on the NLM for setting the foundation of the knowledge base of what is known. Another example is in the High Performance Computing and Communications; the value of this undertaking must be sold to a skeptical biomedical research community.**

### **III. REMARKS FROM THE SURGEON GENERAL'S OFFICE**

**Dr. Rice C. Leach, representing the Surgeon General, said that Dr. Novello's current emphasis is on women's and children's issues. These issues include women's diseases (osteoporosis, carcinoma of female organs, urinary tract problems), the need to include more women in large clinical studies, contraception, family violence, and AIDS and women. As to children, one of her most successful initiatives is in the area of underage drinking, the "healthy children ready-to-learn" national initiative, immunization, and AIDS and children.**

### **IV. CONSIDERATION OF MINUTES OF PREVIOUS MEETING**

**The Regents approved without change the minutes of the June 20-21, 1991, meeting.**

### **V. DATES OF FUTURE MEETINGS**

**The Board will meet next on January 30-31, 1992. The spring meeting, on May 28-29, 1992, was confirmed. The meeting next fall was set for October 1-2, 1992.**

### **VI. REMARKS FROM THE NIH DIRECTOR'S OFFICE**

**Dr. Carl Kupfer, Acting NIH Deputy Director for Intramural Research and Director of the National Eye Institute (NEI), reported about the NIH strategic planning exercise now under way. The U.S.'s "market share" of medical research, whether measured by the number of investigators, patents, or percent of GNP going into biomedical research, has declined over the past decade. Because of competition with HHS health entitlement programs, there is very limited flexibility in funding medical research. Strategic planning will help determine the match between the needs for improving the public's health versus the opportunities that present themselves in research. Regardless of the priorities and categories arrived at as a result of planning, Dr. Kupfer emphasized that the first priority will always be to fund the very best research possible. He described the NIH strategic planning process and listed the categorical panels. The plan will be released for comment in February 1992. Dr. Kupfer confirmed Dr. Lindberg's observation that the NIH strategic planning process was different from that engaged in earlier by the NEI and the NLM; whereas those organizations relied heavily on input from the communities they serve, the NIH planning is initially being done largely by NIH staff, with outside comment and subsequent modification to be done later. The Board of Regents will be asked to review a draft of the NIH plan at its next meeting.**



## **VII. REPORT FROM THE NLM DIRECTOR**

**Dr. Donald A. B. Lindberg** briefly reported on the state of the NLM budget. In FY 1991, NLM's appropriation was \$91.4 million. The President's 1992 budget contains \$100.5 million for the NLM. Although the Congress has not yet passed a 1992 appropriations bill, it is possible that it will be less than a "current services" level with respect to Library Operations. The Director next introduced several new staff members to the Board: **Dr. Charles A. Walker**, Special Expert; **Ms. Marjorie Cahn**, head of the new NLM Office of Health Services Research Information; and **Mr. Victor Cid**, Special Expert. In the area of legislation, **Dr. Lindberg** briefly described several pending bills of interest to NLM: reauthorizations for the Medical Library Assistance Act, the National Center for Biotechnology Information, and the Paperwork Reduction Act. The Long-Range Planning Panel on Toxicology and the Environment, established under the auspices of the Board of Regents, is beginning its work. The Director described the composition of the Panel and said that Board members are welcome to attend the Panel's three meetings. [Regent Beverly Allen is the Board's official liaison to the Panel.] Finally, **Dr. Lindberg** mentioned that the second Unified Medical Language System (UMLS) CD-ROM disk has been issued and is now being tested around the country.

## **VIII. UPDATE ON OUTREACH ACTIVITIES**

**Dr. Elliot R. Siegel**, NLM Assistant Director for Planning and Evaluation, introduced two outreach-related topics. The first was a project, conducted by **Ms. Elaine Alligood**, a librarian at the Countway Library of Medicine at Harvard, to train health-science librarians in Massachusetts to reach out to end users and introduce them to Grateful Med. The second, by **Dr. Melvin Spann** of NLM's Division of Specialized Information Services, is to train the faculty and students of Historically Black Colleges and Universities in the use of the Library's toxicological information resources.

**Ms. Alligood**, using slides, said that her project had four goals: to create a flexible outreach model for teaching Grateful Med; to identify physicians affiliated and unaffiliated with library services; to train 20 "librarian trainers"; and to measure and document the outcomes. She described how she identified more than 40 health science librarians who taught 513 physicians in the 71 training programs that were sponsored under the project. In three months, 197 copies of Grateful Med were sold in the program. The trainers and trainees alike rated the program as successful: 68% of the trainers rated it as excellent, 32% as good; 75% of the trainees rated it excellent, 21% good. **Ms. Alligood** reported on the training materials that were produced and how the sessions were run. She described how she successfully overcame objections from some librarians who had reservations about physicians being able to conduct high-quality searches using Grateful Med. Advance

mailings and PR by the trainers were very important in drawing physicians into the training sessions.

Following Ms. Alligood's presentation, Regent Rachael K. Anderson encouraged her to make these successful training models and training materials widely available for other librarians to use in their outreach efforts. Ms. Alligood commented that NLM had in fact selected their documentation as one of three models that will be distributed to others receiving NLM outreach grants and contracts.

Dr. Melvin Spann described a new NLM initiative aimed at strengthening the capacity of Historically Black Colleges and Universities (HBCUs) to train medical and other health professionals in the use of toxicological, environmental, occupational, and hazardous wastes information resources developed at NLM. Citing several reports, articles, and books, Dr. Spann said that it is unfortunately true that race is a major factor in determining sites where there are pollution and hazardous waste problems. There are 117 HBCUs; NLM has identified nine with high-visibility health care programs that train most of the minority health care professionals in the United States--schools of medicine, dentistry, pharmacy, and veterinary science. A Toxicology Information Outreach Panel, composed of representatives of these schools and several governmental agencies, is advising NLM on the project. There are several goals: (1) to increase awareness on the part of this community of the NLM toxicological files; (2) to provide instruction in the use of the databases; (3) to enhance use of the databases in addressing the health-related problems within these communities; and (4) to use the HBCUs as outreach agents to distribute the benefits of having access to this wealth of information to faculty members, students, and the communities they will serve. Also, NLM hopes to learn from this experience how it can improve its services to optimize their utility for these populations. The HBCUs will receive workstations on a long-term loan from NLM (within the next month), the necessary software and programs they will need to have access to NLM's databases, and free access for one year to conduct the training. They will also receive NLM-sponsored "train-the-trainer" training conducted at the Oak Ridge Associated University facilities in Tennessee. Dr. Spann described the steps taken so far to arrange the program, including discussions and demonstrations to minority health organizations and associations. He and a colleague, Ms. Miriam Perkins, using a workstation of the kind that will be provided to the HBCUs, demonstrated to the Board a variety of the software that will be provided, including the toxicology files multimedia demonstration program.

Following the presentations, Dr. Jeanne Spurlock commented that it would be useful to have such training sessions at society and association meetings for minority health professionals. They might be integrated with NLM's exhibit at the National Medical Association, for example, and perhaps also at the Student National Medical Association and the Association of American Indian Physicians. Dr. Spann said that NLM had in fact approached the first two organizations she mentioned, and other organizations serving minority health

professionals were being approached. In response to questions from Ms. Rachael Anderson, Dr. Spann said that member library institutions in the National Network of Libraries of Medicine were being kept informed about the project and their participation has been solicited.

## **IX. VIRTUAL NOTEBOOK SYSTEM**

Dr. G. Anthony Gorry, Vice President of the Baylor College of Medicine, reported on "the Virtual Notebook System"--a project at that institution that has been supported by the NLM under its Integrated Academic Information Management Systems (IAIMS) program. As background, Dr. Gorry briefly described the Baylor IAIMS project, presently being deployed under a Phase III grant. The Virtual Notebook System (VNS) is a hypertext-based electronic notebook intended to serve many of the functions of an ordinary paper notebook. Collaborating members of teams at Baylor create notebooks to serve as the focal point for their collaboration. Any number of people can create a notebook; an individual can have as many notebooks as necessary. Using slides, Dr. Gorry showed sample pages of VNS notebooks. The information on these pages can be text, graphics, audio, and video. The information need not be linear, but can be linked among pages not in sequence, from notebook to notebook, or even computer to computer. The VNS "peacefully coexists" with other applications so that information extracted from bibliographic searches or modeling programs, for example, can be moved directly onto a notebook page and then annotated and shared. Another application of the VNS is something called the "Community Services Workstation," referred to this morning by Dr. Mason. Dr. Gorry showed the Regents a brief videotape of how the workstation could be used to record and retrieve a variety of linked information in the setting of a social welfare office. He said that responsibility for the deployment of the VNS has been transferred to the Baylor College of Medicine's general administration. This is significant in that the VNS will now get into the school's mainstream and be widely used. Dr. Gorry concluded by saying that NLM's IAIMS program was an enormously positive force in academic medical centers.

Following Dr. Gorry's presentation, Dr. Robert E. Kahn commented that the VNS is a well-integrated project that is very flexible for users. The key to its success is in the underlying architecture. High bandwidth networks will be required to take full advantage of the VNS ability to include audio and visual media. There are a number of other issues that will need to be addressed, such as security, intellectual property rights, and a common thesaurus. Dr. Kahn said that although the project is medically motivated, much of what is being done can be separated from medical applications. Some of what is being done in developing the VNS may soon be available commercially in nonmedical applications. He said that if the VNS developers can get into levels of abstraction so that others will understand the underlying base and then envision specific implementation mechanisms, they may end up developing their own applications. This will help propagate the system. Finally, he said, the whole

notion of extensive collaboration in a system of this sort is poorly understood. He hoped that the Baylor VNS will result in a deeper understanding of the role of collaboration.

## **X. UPDATE ON VISIBLE HUMAN PROJECT**

**Dr. Daniel R. Masys, Director of NLM's Lister Hill National Center for Biomedical Communications, brought the Board up to date on the Library's Visible Human Project. The project is one outcome of the Long-Range Plan; specifically, it responds to the recommendation that NLM place emphasis on electronic images as a source of biomedical knowledge. Subsequent advisors recommended that the NLM build a digital image library representing the x-y-z numerical coordinates of an entire human body, a project too large to be undertaken by any single university center. Dr. Masys described how NLM went about seeking a contractor that would be qualified to do the work. As a result of this process, the Library has just awarded a contract to the University of Colorado School of Medicine to begin Phase I of the project.**

**The principal investigators, Dr. Victor M. Spitzer and Dr. David G. Whitlock, presented to the Board their plan for proceeding with the project. Dr. Spitzer said that Phase I will include identifying six cadavers and selecting one male and female, CT and MRI imaging of the cadavers, slicing, and photography. Dr. Whitlock described how he and his colleagues became involved in work relating to cross-sectional anatomy and the Visible Human Project. Using slides and the brain as an example, he recounted the evolving ability of medicine to gain ever more information as imaging technology advances. CT and MRI technology now gives us a noninvasive method of learning an enormous amount of information about the body. This ability is no longer the exclusive province of the specialist, but is a subject on which every health professional must be current. Dr. Whitlock described how CT scanning, introduced in the 1970s, has been complemented by today's magnetic resonance--MRI--technology. He and his colleagues three years ago embarked on an imaging project of their own--on the human knee. Dr. Whitlock detailed how they went about it--from acquiring the source cadaver, through a complicated cutting system and photographic process, to the resulting images at sequential half-millimeter detail. He described how these techniques--acquiring, freezing, transporting, imaging, slicing, photographing--will be modified to undertake the much larger Visible Human Project. The University of Colorado will have several collaborators in the project, including the University of Texas, which will assist in acquiring the cadavers. Following Dr. Whitlock's presentation, Dr. Spitzer used slides and videotape to show how imaging data would be captured on film, digitized, stored, and displayed.**

**Dr. Alvy Ray Smith commented that the Regents had just seen a "stunning display of computer imagery." Phase I is acquiring the data and visualizing it with "no geometry"; Phase II will be extracting the geometry from the massive, terabyte-size database, so that**

organs, models, etc., can be constructed. Dr. Robert Kahn asked about the work necessary to transition from displaying "slices" to manipulate entire entities such as a liver or a bone structure. Dr. Whitlock replied that once the entire dataset is assembled and classified, it will be possible to pull out any structure required and look at it independently--its surface and underlying features.

## XI. BOARD REVIEW OF NIH STRATEGIC PLAN

Dr. Lindberg reported that, as a result of the September NIH retreat to review first drafts of the NIH Strategic Plan, it was apparent that there were several omissions: NIH's international role, the environment, and health care. Panels were appointed for all three; Dr. Lindberg was appointed to head the third, "Impact of Research on Health Care." The NLM Director said he was surprised that a number of the institutes, when asked whether they had a responsibility to see that research results were translated into practical improvements in health care, replied that they did not have that responsibility (or the legal authority to pursue it). NLM is now involved in two panels--that on health care and the panel on Communications and Information Flow, which Dr. Lindberg co-chairs with Mr. Storm Whaley, NIH Associate Director for Communications. Dr. Lindberg said that he hoped the entire NIH Strategic Plan would be sent to the Board of Regents in advance of the next meeting so that the Regents could review and comment upon it then.

Following Dr. Lindberg's presentation, Dr. Davis appointed a Strategic Planning Committee of the Board to represent the Regents in the NIH planning process: Dr. H. Kenneth Walker (Chairman), Ms. Rachael K. Anderson, and Dr. Lawrence H. Cohn. Dr. Elliot Siegel will be the committee's executive secretary.

## XII. REPORT FROM EXTRAMURAL PROGRAMS

Dr. Milton Corn, Acting Associate Director for Extramural Programs, explained the new voting procedures for initial review committees, one of the outcomes of the Congressional mandate to reform NIH financial management in the funding of grants. Applications will no longer be "approved" or "disapproved." "Not recommended for further consideration" will take the place of "disapproved," while all other applications will be rated on a numerical scale with descriptive adjectives:

100-150	Outstanding
150-200	Excellent
200-250	Very Good
250-350	Good
350-500	Acceptable

As before, "deferred" (pending additional information) will remain an option.

Dr. Corn then turned to the FY 1992 budget. The proposed President's budget would appropriate, if passed, \$9.9 million for new grants, less than NLM had hoped. As an example, Dr. Corn pointed to the \$297,000 available for the IAIMS program in 1992, barely enough to fund one Phase I application. New Training Grants will probably receive full funding, because of high priority for the program in Extramural Programs. The Biomedical Library Review Committee just completed the review of Training Grant applications that were submitted following the Request for Applications (RFA). They will be part of the applications for Board consideration at this meeting.

Dr. Corn noted that even with minimal funds available for IAIMS proposals, interest in the program runs high. Applicants are told in advance that funds will probably not be available, and still proposals are continuing to be submitted.

Ms. Anderson made the point that some applicants will use the process as a vehicle to get the IAIMS initiative started in their own institution, even if no funds are forthcoming from NLM. The activity of pulling the proposal together and getting it reviewed favorably may generate institutional funds to get the process started.

As one of the last items, Dr. Corn announced that the Resource Grant Program--the Access and Systems Grants for Health Libraries--will be revised slightly. The current version of the Resource Grant Program was begun in 1989, concentrating on information access for medium and small hospital libraries and information systems for academic medical centers.

In order to follow the NLM Long-Range Plan more fully and to draw attention to the recent High Performance Computing and Communications (HPCC) initiative, NLM will make a slight modification in the program and emphasize access to national networks and the use of NLM products and services; discourage self-contained local systems, s.a. CD-ROMs; encourage providing access to the National Research and Education Network (NREN), as it becomes available; and urge inclusion of rural and inner-city libraries and hospitals.

In addition to the changes in the Resource Program, NLM will begin a new program on Fellowship in Applied Informatics. This is meant to complement the existing Fellowship in Informatics Research Program which is restricted to postdocs and those registered for a doctoral program. The new Fellowship Program would be open to nurses, librarians, and those physicians who want training in informatics, but are not interested in acquiring a doctorate in the subject. The key features are: No degree will be awarded; applicants need not have a doctorate; realistic stipends will be paid to enable the person to take one or two years off; the applicant must identify the institution, mentor and project, and name the areas of focus, such as an IAIMS site, library system, or any other area of interest.

Dr. Lindberg noted that the Access Program for small libraries and hospitals has been undersubscribed and has not been serving its purpose. The same is true for the individual Fellowship Program, where NLM has not been getting the quality applicant it would like.

**MEETING CLOSED FOR THE REVIEW OF GRANT APPLICATIONS  
OCTOBER 23, 4:55 P.M.**

**XIII. REVIEW OF PENDING APPLICATIONS**

Before proceeding with the consideration of pending applications, Dr. Roger W. Dahlen, Chief, Biomedical Information Support Branch, EP, asked Board members to be aware of confidentiality and conflict-of-interest procedures included in the grant applications workbook and reminded them to sign, at the conclusion of the grant applications review, the statement noting that they had not participated in the discussion of any applications which presented a conflict-of-interest.

The Board reviewed 66 applications, requesting \$67,622,286 and recommended for approval 58 applications in the amount of \$60,934,785 for the total years requested. Eight applications in the amount of \$6,050,272 were disapproved. Grant applications recommended for approval by the board are listed in the summary actions (Attachment E). Interim actions taken by the Extramural Programs staff since the February/March meeting were considered by the Board's Extramural Programs Subcommittee and noted and concurred with by the Board of Regents.

**MEETING OPEN--OCTOBER 24--9:00 A.M. TO ADJOURNMENT**

**XIV. REPORT ON ADVISORY PANEL ON RELATIONAL  
DATABASE SYSTEM FOR TOXICOLOGY**

Dr. Henry Kissman, NLM Associate Director for Specialized Information Services, brought the Board of Regents up to date on a project to investigate the feasibility of building a Relational Database Management System (RDBMS) for NLM's toxicology-related databases now on TOXNET. TOXNET is currently operated by NLM on a contractor's computers as a system separate from ELHILL, the system on which MEDLINE and a number of other bibliographic files are located. Dr. Kissman briefly described TOXNET's present software and hardware environment. An expert panel met at the Library in June 1991 to consider the question of an RDBMS for the TOXNET databases and to advise the Library. Such a system would have several advantages: File management would be more efficient; data redundancy would be eliminated; and a variety of new search capabilities could be introduced. The present TOXNET system is not easy for the casual or occasional user to search. Ideally, the user should be able to search a collection of toxicology data without knowing what component files or data elements make up the system. Dr. Kissman

summarized the advisory panel's report. Although off-the-shelf software should be used as much as possible, they said, presently available RDBMS software will not adequately support the relational concepts in TOXNET's primarily textual files. Therefore, they recommended an evolutionary approach to an RDBMS rather than a single step replacement of the present system. Dr. Kissman briefly outlined the sequential steps to be taken in achieving an RDBMS for the TOXNET files. Full implementation will be dependent on future resources being devoted to the task.

Dr. Ruth M. Davis, commenting on Dr. Kissman's presentation, said she concurs with the recommendations of the panel. There is not a single answer to the question of how to improve access to the toxicology databases. As Dr. Kissman said, it will be an iterative, step-by-step process. Dr. Davis said that because many of the TOXNET files are based on information from non-NLM sources, the Library has a responsibility for protecting the integrity of the data in these files even though this may result in some increased costs to the NLM. There are other Federal agencies with major responsibilities in this area, she said, and NLM should seek their help and cooperation. Dr. Kahn commented that the Library was on the correct path in seeking to convert TOXNET to an RDBMS. However, he said, there are no well-acknowledged, definitive answers to the problem of building distributed systems on loosely coupled 386 PCs (which is what TOXNET runs on). There is much more work to be done in this area.

## XV. DEMONSTRATION OF COACH

Dr. Lawrence C. Kingsland III, Chief of the Lister Hill Center's Computer Science Branch, reported on "COACH," an expert searcher system being developed to assist Grateful Med users. COACH will bring the power of the new UMLS Metathesaurus and other knowledge sources to bear on the problem of helping Grateful Med users improve their retrieval from MEDLINE and its backfiles. It diagnoses search problems and offers possible solutions. Using Grateful Med to conduct a series of MEDLINE searches that exhibited common user problems resulting in limited (or null) retrieval, Dr. Kingsland demonstrated how COACH suggested remedies.

Following Dr. Kingsland's presentation and demonstration, Dr. H. Kenneth Walker congratulated the staff on developing a system that holds such great promise in making MEDLINE more accessible and friendly to users. He asked whether the techniques developed for COACH were generalizable to databases other than MEDLINE. Dr. Kingsland said that there is little doubt that the "tricks" to improving MEDLINE searches will have counterparts applicable to other databases. Dr. Lindberg commented that COACH's strategies for improving searches are the result of advice from expert reference librarians. In response to a question, Dr. Kingsland said that alpha-testing of COACH was about to begin at NLM; he expects that COACH will be available to the Grateful Med-using public sometime in 1992.



## XVI. LOANSOME DOC SAILS FORWARD

Mrs. Lois Ann Colaianni, NLM Associate Director for Library Operations, brought the Board up to date on the implementation of Loansome Doc, NLM's new interlibrary loan electronic routing system. Using slides, she described NLM's historical role in interlibrary loan, the creation of DOCLINE (an automated document requesting and routing service) in the 1980s, and the introduction of Grateful Med in 1986 and the subsequent increase in end-user MEDLINE searching. These three elements, combined with today's facsimile transmission, make possible an interlibrary loan system that allows rapid request and rapid delivery of copies of journal articles. Loansome Doc, introduced in 1991 throughout the National Network of Libraries of Medicine (and the subject of a report to the Board at the February 28-March 1, 1991, meeting) is such a system. This service allows Grateful Med users electronically to request a copy of any article referenced in MEDLINE and its backfiles (some seven million records) from a medical library. Mrs. Colaianni said that librarians in all eight regions have received instruction in implementing Loansome Doc and that the management support system has been installed. The advantages are obvious: Users have the convenience of placing requests for copies of articles from their offices, homes, or wherever they use Grateful Med; librarians receive citations that are invariably correct and have correct requesters' names and addresses. By the end of September, Loansome Doc had processed 6,290 requests from 421 individual users. As to method of delivery: 71 percent select mail, 18 percent pick up the article, and only 11 percent choose facsimile. Of the 6,290 requests, 57 percent were filled by the library with which the user is affiliated; 30 percent were transferred into DOCLINE for filling by another network library; 13 percent were not filled at all. The last figure primarily reflects the fact that some users are unwilling to pay charges for having the request filled. Mrs. Colaianni said that users seem to be pleased with Loansome Doc, and she recounted testimonials from several health professionals as to the value of the service.

The newest improvement to the interlibrary loan network is a prototype system called SAIL (System for Automated Interlibrary Loan). SAIL, first described to the Regents at their June 1990 meeting, is a joint experimental effort of the Lister Hill Center and Library Operations staff. It consists of scanning the full text of selected journal articles and placing the images on an optical disk. Interlibrary loan requests that arrive at NLM via DOCLINE for those articles for which images are available are routed to the disk; SAIL will automatically print a copy to mail to the requester. Alternatively, if the request is for a facsimile copy, SAIL will automatically fax a copy to the requestor. The first interlibrary loan request was handled by SAIL on April 17, 1991. By July, 1,000 requests had been received. Mrs. Colaianni described how the scanning of the articles is accomplished at NLM, currently at a rate of about 500 pages a day. The 52 journal titles being scanned are those that have most recently been selected for indexing for MEDLARS. SAIL is a successful prototype system, but there are several important issues to be addressed, among them copyright, the effect on the nation's medical libraries, whether users are willing to bear the costs, and how to select journals for scanning into SAIL. These issues will be examined when NLM evaluates SAIL in early 1992.

Following Mrs. Colaianni's presentation, Ms. Rachael K. Anderson commented that the thorny issues raised by her are issues that the profession has been facing for many years. The economic implications of interlibrary loan are not well understood by publishers. There is no question that libraries are cutting back on subscriptions, Ms. Anderson said, although SAIL certainly will not be a cause of such cuts. The solution will lie in cooperation between libraries and publishers, not in suspicion and antagonism. The issue of users being willing to bear costs is also not a new one. There is a longstanding perception that libraries are a "free" good in our society. Somehow we have to overcome this absolute expectation of free information from a medical library. Finally, Ms. Anderson said that NLM will have to exercise great diplomacy in dealing with the medical library community, so that librarians do not feel that their position is being undercut by such end-user services as Grateful Med and Loansome Doc. An educational effort is required so that medical librarians understand the changing information environment and the role of the library in it, as well as the opportunities the new environment provides.

**XVII. INTERACTIVE VISUALIZATION--A VIDEO REVIEW**

Dr. Conrade C. Jaffe of Yale University, currently working at NLM on a sabbatical, using slides described to the Board some of his earlier work on creating computer-based video tutorials on echocardiology and other cardiology-related subjects. He then played a videotape showing his latest work on scientific visualization in the field of embryology being conducted at the Lister Hill Center. It is a multidisciplinary effort involving medical experts, graphics illustrators, computer specialists, and network engineers in an effort to express biomedical information in dynamic, visual form.

**XVIII. ADJOURNMENT**

The meeting was adjourned at 11:50 a.m. on Thursday, October 24.

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Subcommittee Meeting on Tuesday, October 22:

Extramural Programs Subcommittee--2:00-4:00 p.m.  
(Attachment B)

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**ACTIONS TAKEN BY THE BOARD OR REGENTS**


1. Dr. Davis appointed a Strategic Planning Committee of the Board to represent the Regents in the NIH planning process: Dr. H. Kenneth Walker (Chair), Ms. Rachael K. Anderson, and Dr. Lawrence H. Cohn. Dr. Elliot Siegel will act as executive secretary.

2. The Board concurred with recommendations of the Extramural Programs Subcommittee. Grant applications for approval are listed in the summary actions (Attachment C).

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

 12/9/91  
\_\_\_\_\_  
Donald A. B. Lindberg, M.D. (Date)  
Executive Secretary

 12/15/91  
\_\_\_\_\_  
Ruth M. Davis, Ph.D. (Date)  
Chair

## BOARD OF REGENTS OF THE NATIONAL LIBRARY OF MEDICINE

## CHAIRMAN

DAVIS, Ruth M., Ph.D. (8/3/92)  
 President  
 The Pymatuning Group, Inc.  
 Suite 570  
 4900 Seminary Rd. 703-671-3500  
 Alexandria, VA 22311 FAX 703-671-3505

ALLEN, Beverly E. (8/3/95) Director, Multi-Media Center Morehouse School of Medicine 720 Westview Dr. S.W. Atlanta, GA 30310-1495 <u>404-752-1530</u> <u>FAX 404-755-7318</u>	KAHN, Robert E., Ph.D. (8/3/94) President Corporation for National Research Initiatives 1895 Preston White Drive Suite 100 Reston, VA 22091 <u>703-620-8990</u> <u>FAX 703-620-0913</u>
ANDERSON, Rachael K. (8/3/94) Director Health Sciences Center Library University of Arizona 1501 N. Campbell Ave. Tucson, AZ 85724 <u>602-626-6121</u> <u>FAX 602-626-2831</u>	SMITH, Alvy Ray, Ph.D. (8/3/92) President Altamira Software Co. 104 Crest Rd. Fairfax, CA 94930 <u>415-236-4000</u> <u>FAX 415-236-0388</u>
CAPE, Ronald E., Ph.D. (8/3/92) Chairman Cetus Corporation 1400 Fifty-Third Street Emeryville, CA 94608 <u>510-420-3300</u> <u>FAX 510-420-4102</u>	SPURLOCK, Jeanne, M.D. (8/3/93) Deputy Medical Director, and Director, Department of Minority National Affairs American Psychiatric Association 1400 K Street, N.W. Washington, DC 20005 <u>202-682-6093</u> <u>FAX 202-682-6114</u>
COHN, Lawrence H., M.D. (8/3/93) Chief of Cardiac Surgery Department of Surgery Brigham and Women's Hospital 75 Francis Street Boston, MA 02115 <u>617-734-8183</u> <u>FAX 617-732-6559</u>	WALKER, H. Kenneth, M.D. (8/3/95) Professor of Medicine Emory University School of Medicine 69 Butler Street Atlanta, GA 30303 <u>404-616-3420</u> <u>FAX 404-525-2957</u>
DeNARDIS, Lawrence J., Ph.D. (8/3/94) President University of New Haven 300 Orange Ave. West Haven, CT 06516 <u>203-932-7000</u> <u>FAX 203-937-0756</u>	

10/23/91

**EX OFFICIO MEMBERS****Primary****Alternate**

**BILLINGTON, James H., D. Phil.**  
 Librarian of Congress  
 Library of Congress  
 10 First Street, S.E.  
 Washington, DC 20540 202-707-5205

**ROWBERG, Richard E., Ph.D.**  
 Chief  
 Science Policy Research Division  
 Congressional Research Service  
 Library of Congress  
 10 First Street, S.E.  
 Washington, DC 20540 202-707-7040  
FAX 202-707-7000

**CLUTTER, Mary E., Ph.D.**  
 Asst. Director for Biological,  
 Behavioral, and Social Sciences  
 National Science Foundation  
 1800 G Street, N.W., Room 506  
 Washington, DC 20550 202-357-9854  
FAX 202-357-7059

**BROWNSTEIN, Charles N., Ph.D.**  
 Director, Directorate for Computer and  
 Information Science & Engineering  
 National Science Foundation  
 1800 G Street, N.W.  
 Washington, DC 20550 202-357-7936

**HOLSINGER, James W., Jr., M.D.**  
 Chief Medical Director  
 Veterans Health Services  
 and Research Admin. (10)  
 Dept. of Veterans Affairs  
 810 Vermont Avenue, N.W.  
 Washington, DC 20420 202-535-7010  
FAX 202-535-7630

**CARTER, Wendy, M.L.S.**  
 Chief, Public Services Section  
 Dept. of Veterans Affairs  
 810 Vermont Avenue, N.W. (142D)  
 Washington, DC 20420 202-535-7337  
FAX 202-535-7539

**HOWARD, Joseph H.**  
 Director, National Agricultural Library  
 U.S. Department of Agriculture  
 10301 Baltimore Boulevard  
 Beltsville, MD 20705 301-344-4248  
FAX 301-344-5472

**LEDFORD, Frank F., Jr., Lt. Gen., MC, USA**  
 The Surgeon General  
 Department of the Army  
 5111 Leesburg Pike  
 Falls Church, VA 22041-3258 703-756-0000

**FAUVER, Howard E., Jr., Col., MC, USA**  
 Chief  
 Graduate Medical Education Branch  
 U.S. Army Health Professional Support  
 Agency (SGPS-EDM)  
 5109 Leesburg Pike  
 Falls Church, VA 22041-3258 703-756-8036  
FAX 703-756-0243

**NOVELLO, Antonia C., M.D., M.P.H.**  
Surgeon General, PHS  
200 Independence Avenue, S.W.  
Washington, DC 20201  
202-245-6467  
FAX 202-245-2810

**McCORMICK, Kathleen A., R.N., Ph.D.**  
Director, Office of the Forum  
for Quality and Effectiveness  
in Health Care  
Parklawn Bldg., Room 18A-46  
5600 Fishers Lane  
Rockville, MD 20857  
301-227-6671  
FAX 301-227-6679

**SLOAN, Alexander M., Lt. Gen., USAF, MC**  
Surgeon General  
Department of the Air Force  
Bolling Air Force Base  
Washington, DC 20332-6188  
202-767-4343

**MORGAN, Jacqueline, Col., USAF, MC**  
Chief, Professional Services, Professional Affairs  
and Quality Assurance (SGP)  
Bolling Air Force Base  
Washington, DC 20332-6188  
202-767-1849  
FAX 202-404-8089

Dean, Uniformed Services University  
of the Health Sciences  
F. Edward Hebert School of Medicine  
4301 Jones Bridge Road  
Bethesda, MD 20814-4799  
301-295-3013  
FAX 301-295-3627

**HAGEN, Donald F., Vice Adm., MC, USN**  
Surgeon General  
Bureau of Medicine and Surgery  
Department of the Navy  
Washington, DC 20265-1280  
202-653-1144  
FAX 202-653-1280

**KEMP, David G., Capt., MC, USN**  
Commanding Officer, Naval Health  
Sciences, Education and Training Command  
Department of the Navy  
Bethesda, MD 20814-5022  
301-295-0293  
FAX 301-295-2374

**EXECUTIVE SECRETARY**

**LINDBERG, Donald A. B., M.D.**  
Director  
National Library of Medicine  
8600 Rockville Pike  
Bethesda, MD 20894  
301-496-6221  
FAX 301-496-4450

**BOARD OF REGENTS**  
**EXTRAMURAL PROGRAMS SUBCOMMITTEE MEETING**

**October 22, 1991**

**2:00 to 4:00 p.m.**

**A T T E N D E E S**

**Subcommittee Members Present:**

Ms. Rachael K. Anderson, Chair  
Ms. Beverly E. Allen  
Dr. Ruth M. Davis

**Subcommittee Members Absent:**

Capt. Kathleen McCormick  
Dr. H. Kenneth Walker

**NLM Staff Present:**

Mr. Brian Campbell, Administrative Officer, EP  
Mr. Peter A. Clepper, Program Officer, EP  
Mrs. Karin K. Colton, Committee Management Specialist, EP  
Dr. Milton Corn, Acting Associate Director, EP  
Dr. Roger W. Dahlen, Chief, Biomedical Information Support Branch, EP  
Ms. Andrea Epstein, Grants Assistant, EP  
Mrs. Frances Johnson, Program Officer, EP  
Mrs. Frances Howard, Special Assistant, EP  
Ms. Ellen Meltzer, Grants Management Specialist, EP  
Mr. Richard T. West, Chief, Office of Program Planning and Evaluation, EP

APPLICATIONS APPROVED BY COUNCIL  
(ARRANGED NUMERICALLY BY PROGRAM)  
PROG. CLASS: COUNCIL DATE: SEPT./OCT. 1991  
INSTITUTE/DIVISION: NATIONAL LIBRARY OF MEDICINE

APPLICATION NUMBER	PROJECT TITLE	AMOUNTS RECOMMENDED
1 G07 LM05328-01	MOUNT SINAI HOSPITAL MEDICAL CTR INFORMATION ACCESS	01 8,315
1 G07 LM05363-01	NH GA REGIONAL HOSPITAL INFORMATION ACCESS	01 12,000
1 G07 LM05365-01	CENTRALIZED AUTOMATION FOR A TWO-BRANCH HOSPITAL LIBRARY	01 11,004
1 G07 LM05377-01	GAIN HOSPITAL LIBRARIES' LOCAL AUTOMATION PROJECT	01 48,000
1 G07 LM05378-01	ARKANSAS DELTA MEDICAL INFORMATION EXCHANGE	01 86,767
1 G07 LM05390-01	INTEGRATED LIBRARY SYSTEM PROJECT WITH REMOTE ACCESS	01 11,825
1 G07 LM05391-01	ACCESS TO.nlm LIBRARY INFORMATION	01 12,000



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APPLICATION NUMBER	PROJECT TITLE	AMOUNTS RECOMMENDED
1 G08 LM05366-01	IAIMS PILOT MODEL DEVELOPMENT AT YALE	01 430,743 02 447,481 03 462,510
1 G08 LM05367-01	UMLS SEARCHING WORKSTATION	01 150,000 02 150,000 03 150,000
1 G08 LM05373-01	RESEARCH INFORMATION SYSTEM (RIS)	01 177,643 02 138,069 03 129,327
1 G08 LM05389-01	INTEGRATED LIBRARY AND INFORMATION SYSTEMS PROJECT	01 189,158

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APPLICATION NUMBER	PROJECT TITLE	AMOUNTS RECOMMENDED
2 R01 LM04487-06A1	COMPUTER EXERCISES IN CLINICAL DIAGNOSIS: PLANALYZER II	06A1 203,040 07 223,785 08 191,717 09 189,893 10 162,906
2 R01 LM04836-04	FACS-PENGUIN--KNOWLEDGE BASE SUPPORT FOR FLOW CYTOMETRY	04 272,915 05 275,287 06 287,400
2 R01 LM04960-04	EFFICIENT SOFTWARE FOR THE ANALYSIS OF BIOSEQUENCES	04 88,116 05 90,414 06 94,665 07 99,128
1 R01 LM05250-01A1	ANALOGY AND EXPLANATION IN EXPERT MEDICAL DIAGNOSIS	01A1 162,505 02 153,952
1 R01 LM05324-01	CLINICAL MANAGEMENT OF CRITICAL ILLNESS USING AI	01 352,846 02 337,840 03 358,165
1 R01 LM05361-01	STATE INTERVENTION AGAINST CONTAGIOUS DISEASE 1830-1930	01 21,414 02 19,335
1 R01 LM05364-01	AN ARMENIAN-ARABIC PHARMACEUTICAL LEXICON	01 17,162
1 R01 LM05369-01	THE CONTRIBUTIONS OF MEDICINE TO EARLY SOCIAL STATISTICS	01 22,150 02 21,750

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APPLICATION NUMBER	PROJECT TITLE	AMOUNTS RECOMMENDED
# 1 R01 LM05371-01	VISUAL DATA BASES	01 234,203 02 215,886 03 197,937 04 209,560
1 R01 LM05375-01	INVESTIGATION OF INFORMATION RETRIEVAL USING TEXT GRAMMA	01 76,782 02 95,637 03 103,586
1 R01 LM05381-01	DUALS SECONDARY REVIEW: AI TROPICAL DEVELOPMENT & DECLINE & RESURGENCE OF MALARIA	01 24,996 02 23,788 03 24,513
1 R01 LM05384-01	A LINGUISTIC ANALYSIS OF VARIANT EXPRESSIONS IN MEDLINE	01 53,821 02 36,190
1 R01 LM05388-01	A DIGITAL MEDICAL LECTURE TRANSCRIPT LIBRARY	01 118,456 02 100,152 03 104,967
1 R01 LM05393-01	COLLABORATIVE MEDICAL DECISION MAKING	01 95,027 02 100,395
1 R01 LM05394-01	DUALS SECONDARY REVIEW: RR COMPARE ASSISTANT STATISTICAL EXPERT SYSTEM	01 172,595 02 166,945 03 152,761
1 R01 LM05396-01	ANALYSIS OF GENOMIC DNAS AS INFORMATION SYSTEMS	01 46,020 02 39,541 03 41,122

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1 R01 LM05401-01	NEW DECISION SUPPORTS AND DATABASES FOR DRUG DOSAGE	01 183,894 02 191,250 03 314,859

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1 R29 LM05291-01A1	STRUCTURING MEDICAL KNOWLEDGE FOR PROBABILISTIC INFERENC	01A1 74,679 02 63,732 03 66,921 04 70,274 05 73,853
1 R29 LM05372-01	DUALS SECONDARY REVIEW: HQ MODELING DNA STRUCTURE WITH A SET OF REDUCED COORDINATES	01 54,570 02 57,363 03 60,514 04 63,838 05 67,344
1 R29 LM05382-01	QUALITATIVE RELEVANCE FEEDBACK IN INFORMATION RETRIEVAL	01 82,728 02 50,896 03 67,188 04 70,630 05 74,225
1 R29 LM05385-01	THE SECOND MESSENGER PROJECT	01 76,733 02 60,236 03 62,858 04 65,610 05 68,500
1 R29 LM05387-01	TIME AND CONTEXT IN MEDICAL DATABASES	01 63,180 02 66,243 03 69,458 04 72,835 05 76,379
1 R29 LM05397-01	AN INTEGRATED MEDICAL TEXT PROCESSING SYSTEM	01 59,013 02 60,291 03 66,303 04 66,456 05 72,756

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APPLICATION NUMBER	PROJECT TITLE	AMOUNTS RECOMMENDED
2 R01 CA48653-03	DUALS SECONDARY REVIEW: LM MEDICAL FLORA OF SOUTH AMERICA	03 53,770 04 54,913
1 R01 CA51816-01A2	DUALS SECONDARY REVIEW: LM INTELLIGENT RADIOLOGIC IMAGE DISPLAY	01A2 194,434 02 189,668 03 201,089
1 R01 CA56071-01	DUALS SECONDARY REVIEW: LM VOLUME RENDERING AND MANIPULATION IN TOMOGRAPHIC IMAGING	01 131,751 02 138,817 03 146,260

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2 T15 LM07033-09	GRADUATE TRAINING IN MEDICAL INFORMATION SCIENCES	09 673,216 10 701,582 11 710,445 12 735,561 13 740,594
2 T15 LM07041-09	RESEARCH TRAINING IN MEDICAL INFORMATICS	09 531,576 10 584,981 11 594,189 12 649,681 13 661,520
2 T15 LM07049-06	MEDICAL INFORMATICS RESEARCH TRAINING	06 324,100 07 390,744 08 418,473 09 454,588 10 391,887
2 T15 LM07056-06	MEDICAL INFORMATICS RESEARCH TRAINING AT YALE	06 502,702 07 509,240 08 516,267 09 525,829 10 531,957
2 T15 LM07059-06	PITTSBURGH MEDICAL INFORMATICS TRAINING PROGRAMS	06 377,235 07 434,891 08 418,311 09 515,673 10 541,829
1 T15 LM07069-01	RESEARCH TRAINING PROGRAM IN MEDICAL INFORMATICS	01 226,862 02 382,291 03 387,502 04 392,923 05 398,560

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1 T15 LM07070-01	MEDICAL INFORMATICS TRAINING	01 178,606 02 317,930 03 319,184 04 421,725 05 430,639
1 T15 LM07071-01	DUKE-UNC TRAINING PROGRAM IN MEDICAL INFORMATICS	01 262,140 02 407,710 03 481,933 04 486,937 05 512,482
1 T15 LM07072-01	UCLA TRAINING IN BIOMEDICAL INFORMATICS	01 427,706 02 432,986 03 438,795 04 445,185 05 452,214
1 T15 LM07075-01	MEDICAL INFORMATICS RESEARCH TRAINING FOR PRIMARY CARE	01 77,368 02 213,422 03 291,699 04 325,410 05 335,580
1 T15 LM07076-01	MEDICAL INFORMATION RESEARCH TRAINING	01 171,710 02 280,580 03 297,570 04 327,120 05 327,120
1 T15 LM07077-01	TRAINING PROGRAM IN MEDICAL INFORMATICS	01 385,932 02 607,022 03 783,536 04 714,603 05 730,750



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1 T15 LM07079-01	MEDICAL INFORMATICS RESEARCH TRAINING PROGRAM	01 102,788 02 194,723 03 278,144 04 285,512 05 293,689
1 T15 LM07080-01	MEDICAL INFORMATICS RESEARCH TRAINING	01 87,056 02 156,941 03 183,054 04 243,381 05 281,707
1 T15 LM07081-01	HEALTH INFORMATION SCIENCES RESEARCH TRAINING	01 139,646 02 280,842 03 428,167 04 433,193 05 438,520
1 T15 LM07082-01	MEDICAL INFORMATICS RESEARCH TRAINING PROGRAM	01 213,000 02 333,016 03 349,844 04 343,096 05 348,662
1 T15 LM07083-01	POSTDOCTORAL TRAINING IN BIOMEDICAL INFORMATICS	01 166,568 02 287,111 03 290,533 04 294,127 05 297,899
1 T15 LM07084-01	MEDICAL INFORMATICS RESEARCH TRAINING PROGRAM	01 277,212 02 502,818 03 716,274 04 433,842 05 207,180

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1 T15 LM07086-01	MEDICAL INFORMATICS TRAINING	01 204,677
		02 276,935
		03 305,562
		04 314,678
		05 324,317
1 T15 LM07087-01	MEDICAL INFORMATICS TRAINING PROGRAM	01 79,906
		02 159,148
		03 241,768
		04 242,962
		05 244,198
1 T15 LM07088-01	TRAINING PROGRAM IN HEALTH INFORMATICS	01 121,785
		02 250,140
		03 254,502
		04 309,288
		05 314,930
1 T15 LM07089-01	MEDICAL INFORMATICS RESEARCH TRAINING PROGRAM	01 139,555
		02 249,173
		03 336,117
		04 343,707
		05 352,055
1 T15 LM07091-01	MEDICAL INFORMATICS TRAINING IN PHARMACY	01 68,322
		02 87,381
		03 96,252
		04 98,303
		05 108,127
1 T15 LM07092-01	HARVARD-MIT-NEMC RESEARCH TRAINING-MEDICAL INFORMATICS	01 1,530,684
		02 1,565,847
		03 1,602,085
		04 1,641,033
		05 1,682,304