

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

A G E N D A

86th Meeting of the

BOARD OF REGENTS

9:00 a.m., Sept. 30 - Oct. 1, 1987

Board Room
Mezzanine of
National Library of Medicine

MEETING OPEN: All day on September 30 and from 9:00 a.m. to 11:30 a.m. on October 1.
MEETING CLOSED: From 11:30 a.m. to adjournment on October 1 for the review of grant applications.

CALL TO ORDER AND INTRODUCTORY REMARKS

Dr. Edward N. Brandt, Jr.

REMARKS BY THE DEPUTY SURGEON GENERAL

Dr. Faye G. Abdellah

REMARKS BY THE DEPUTY DIRECTOR, NIH

Dr. William F. Raub

CONSIDERATION OF MAY MINUTES

TAB I
(Agenda Book)

Dr. Edward N. Brandt, Jr.

FUTURE MEETING DATES

Winter Meeting: January 28-29, 1988 (Th-F)--CONFIRMED

Spring Meeting: May 17-18, 1988 (T-W)--CONFIRMED

Fall Meeting: Sept. 29-30 OR October 6-7, 1988 (Th-F)--PROPOSED

PLEASE NOTE Potential Conflicts with Sept./ Oct. 1988 Dates:

Assoc. of Research Libraries Semiannual Meeting, 9/19-22/88, York, U.K.
NIAID Council Fall Meeting, 9/22-23/88, Bethesda, MD
Assoc. of Academic Health Centers Fall Meeting, 9/28-10/1/88, Boca Raton, FL
National Academy of Engineering Annual Meeting, 10/12-13/88, Washington, DC
Institute of Medicine Annual Meeting, 10/19-20/88, Washington, DC
Society of Medical Decision Making Annual Meeting, 10/16-19/88, Richmond, VA
American Society for Information Science Annual Meeting, 10/23-27/88, Atlanta, GA

8/31/87

COFFEE BREAK

. REMARKS BY THE DIRECTOR, NLM	<u>TAB II</u>	Dr. Donald A. B. Lindberg
Discussion		Board Members

I. ENHANCEMENTS TO GRATEFUL MED	<u>TAB III</u>	Mr. John Anderson Dr. Edward A. Feigenbaum, Discussant
Discussion		Board Members

II. INTERNATIONAL MEDLARS CENTERS	<u>TAB IV</u>	Dr. Richard K. C. Hsieh
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LUNCHEON CATERED IN CONFERENCE ROOM "B"

. NLM RETREAT	<u>TAB V</u>	
A. Critical Incident Technique (CIT)	<u>Tab A</u>	Dr. Elliot Siegel
B. Followup to Long-Range Plan	<u>Tab B</u>	" " "
C. Lister Hill Plan for Management of Biotechnology Information	<u>Tab C</u>	Dr. Daniel R. Masys
Discussion		Board Members

COFFEE BREAK

HISTORY OF MEDICINE	<u>TAB VI</u>	Dr. John Parascandola Mr. Joseph H. Howard, Discussant
Discussion		Board Members

. TIME PROJECT/USE IN MEDICAL EDUCATION	<u>TAB VII</u>	Dr. William Harless Dr. Edward N. Brandt, Jr., Discussant
Discussion		Board Members

R E C E S S * * * * *

DINNER	HYATT REGENCY BETHESDA
Cocktails 6:30 p.m.	One Metro Center
Dinner 7:30 p.m.	"Cabinet Suite"

SPEAKER: Dr. Robert J. T. Joy, Professor and Chairman
Section of Medical History
Uniformed Services University of the Health Sciences

R E C O N V E N E : Thursday, October 1, 9:00 a.m.

PERMANENT PAPER TASK FORCE

TAB VIII

Mr. Charles R. Kalina
Dr. Lois E. DeBakey,
Discussant

Discussion

Board Members

TECHNOLOGY ASSESSMENT - NAS/IOM

TAB IX

Ms. Betsy Humphreys
Mr. H. Robert Cathcart and
Dr. William N. Hubbard, Jr.
Discussants

Discussion

Board Members

COFFEE BREAK

REPORT OF THE ACTING ASSOCIATE
DIRECTOR FOR EXTRAMURAL PROGRAMS

TAB X

Mr. Arthur J. Broering
EP Subcommittee Members,
Discussants

Discussion

Board Members

MEETING CLOSED FOR THE REVIEW OF GRANT APPLICATIONS, OCTOBER 1, 11:30 A.M., APPROX.

APPLICATION REVIEW

(APPLICATION BOOK)

RESEARCH

TAB I

Mr. Arthur J. Broering

A. Over \$100,000

Tab A

B. Other

Tab B

RESOURCE

TAB II

A. Over \$100,000

Tab A

B. Other

Tab B

IAIMS - Over \$100,000

TAB III

FIRST

TAB IV

IMPROVEMENT

TAB V

AREA

TAB VI

PUBLICATION

TAB VII

Dr. Jeanne L. Brand

ADJOURNMENT

Dr. Edward N. Brandt, Jr.

DEPARTMENT OF HEALTH AND HUMAN SERVICES

NATIONAL INSTITUTES OF HEALTH
NATIONAL LIBRARY OF MEDICINE

BOARD OF REGENTS
MINUTES OF THE 86TH MEETING
SEPTEMBER 30 - OCTOBER 1, 1987

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/
September 30-October 1, 1987

The Board of Regents of the National Library of Medicine was convened for its eighty-sixth meeting at 9:00 a.m. on Wednesday, September 30, 1987, in the Board Room of the National Library of Medicine, Bethesda, Maryland. Dr. Edward N. Brandt, Jr., Chairman of the Board of Regents and Chancellor, University of Maryland - Baltimore, presided. In accordance with P.L. 92-463 and the Determination of the Director, NIH, and as announced in the Federal Register on August 21, 1987, the meeting was open to the public from 9:00 a.m. to 4:45 p.m. on September 30 and from 9:00 a.m. to 11:00 a.m. on October 1. The meeting was closed from 11:00 a.m. to adjournment at 11:30 a.m. on October 1 for the review, discussion, and evaluation of grant applications. A Board roster is enclosed under Attachment A.

Board members present were:

Dr. Edward N. Brandt, Jr.
Mr. H. Robert Cathcart
Dr. Don E. Detmer
Dr. Edward A. Feigenbaum (September 30)
Mr. Joseph H. Howard (Ex Officio) (September 30)
Dr. Ann K. Randall
Dr. Grant V. Rodkey
Dr. Jay P. Sanford (Ex Officio)
Dr. Eugene a. Stead, Jr.
Vice Adm. James A. Zimble (Ex Officio)

Alternates to ex officio members present were:

Dr. Faye G. Abdellah, representing Dr. C. Everett Koop.
Brig. Gen. Rufus M. DeHart, Jr., representing Lt. Gen. Murphy A. Chesney.
Col. Howard E. Fauver, representing Lt. Gen. Quinn H. Becker.
Ms. Karen Renninger, representing Dr. John Gronvall.
Dr. William J. Welsh, representing Dr. James H. Billington.

Unable to attend:

Mr. Russell L. Fenwick
Dr. David T. Kingsbury
Ms. Nina W. Matheson

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. Michael Ackerman, Chief, Educational Technology Branch, LHNCBC
Mr. John Anderson, Director, Information Systems, OD
Dr. Jeanne Brand, Chief, International Programs Branch, EP
Mr. Arthur J. Broering, Acting Associate Director for Extramural Programs
Mr. Kenneth Carney, Executive Officer, OD
Ms. Lois Ann Colaianni, Associate Director for Library Operations
Dr. Roger W. Dahlen, Chief, Biomedical Information Support Branch, EP
Dr. William Harless, Special Expert, Educational Technology Branch, LHNCBC
Dr. Richard K. C. Hsieh, Assistant Director for International Programs
Ms. Betsy Humphreys, Deputy Associate Director for Library Operations
Mr. Charles R. Kalina, Special Projects Officer, OD
Dr. Henry M. Kissman, Associate Director for Specialized Information Services
Mr. Sheldon Kotzin, Chief, Bibliographic Services Division, LO
Dr. Daniel R. Masys, Director, Lister Hill National Center for Biomedical Communications
Mr. Robert B. Mehnert, Chief, Office of Inquiries and Publications Management, OD
Dr. John L. Parascandola, Chief, History of Medicine Division, LO
Mr. Arthur Robinson, EEO Officer
Mr. Mark J. Rotariu, Chief, Office of Financial Management, OD
Dr. Elliot R. Siegel, Assistant Director for Planning and Evaluation
Ms. Susan Slater, Senior Program Analyst, OD
Mr. Richard T. West, Chief, Office of Program Planning and Evaluation, EP

Others present included:

Dr. William F. Raub, Deputy Director, NIH
Dr. Lois E. DeBakey, Professor of Scientific Communications, Baylor College of Medicine, Consultant
Ms. Ileen Stewart, Executive Secretary, Special Study Section, NIH

Members of the public present:

Dr. Clifford Goodman, Program Officer, Institute of Medicine, Washington, D.C.
Dr. William N. Hubbard, Jr., Chairman, Council on Health Care Technology, Washington, D.C.
Dr. Walter R. Panko, BBN, Inc., Arlington, VA
Dr. Richard Rettig, Director, Council on Health Care Technology, Washington, D.C.

I. OPENING REMARKS

Dr. Edward N. Brandt, Jr., Chairman, welcomed the Regents to the 86th meeting of the Board of Regents. He welcomed newly appointed member Don E. Detmer, M.D., Vice President for Health Sciences of the University of Utah, and two new ex officio members, Vice Admiral James A. Zimble and Brigadier General Rufus M. DeHart, Jr. (U.S. Air Force). He also welcomed Dr. Lois DeBakey, consultant to the Board and former member of the Board.

II. REMARKS BY THE DEPUTY SURGEON GENERAL

Dr. Faye Abdellah reported on several important subjects that are high on the Surgeon General's agenda. Chief among these is AIDS. October is AIDS Awareness Month, and the Public Health Service is making a special effort to reach minority populations with public education messages. A second priority is smoking and health. Dr. Abdellah congratulated the NIH on becoming smoke-free. A new report on nutrition and health will soon be released by the Surgeon General to health care professionals. The Ninth Surgeon General's workshop on self-help in public health was held last week in Los Angeles. There is a large network of privately funded, self-help groups that the Federal Government should work more closely with. Another Surgeon General's workshop on the subject of long-term care for the elderly will be held in Washington next Spring. Violence and public health is the subject of a cooperative program between the PHS and the Department of Justice. Another current concern is the need to find a replacement for Dr. Mahler as head of the World Health Organization; American involvement is awkward, however, because the United States is three years in arrears with its dues. A final initiative, Dr. Abdellah said, is to prepare a scientific report on the medical and psychological effects on women who have abortions.

III. REPORT OF THE NIH DEPUTY DIRECTOR

Dr. William F. Raub briefly described the remaining events of the NIH Centennial, including an exhibit of a replica of an early laboratory installed at the Staten Island Hospital. The exhibit will soon be installed on the NIH campus. He spent some time talking about the earlier long-range plan prepared by the National Eye Institute (NEI) and related that process to NLM's own excellent Long-Range Plan. The first NEI plan was a technical and political success--accepted by both scientists and public policy makers. Several specific steps taken by the Institute insured its success: The Plan was immediately used by the NEI Council and staff in testimony, speeches, and soliciting of research applications in certain high priority areas. The Plan was given high visibility among the NEI constituent scientific groups. It is a "living" plan, that is, it undergoes frequent refinement as circumstances dictate. The Institute does not wait for some planning "cycle" to make changes. In response to a question, Dr. Raub commented that it is vitally important to couple the substance of the planners' program recommendations and dollar recommendations. Although it sometimes makes consultants uncomfortable, they should be required to attach dollar amounts to their program recommendations.

Dr. Raub was also asked about the status of AIDS research. He said that there is near unanimity between the Executive Branch and the Congress that research should move ahead as quickly as possible. There are substantial increases in the FY 1988 budget for AIDS research--from 250 million to likely close to 470 million dollars. Vaccine development in particular is moving rapidly with a number of collaborative arrangements among government, academic, and industrial scientists. Nevertheless, the development of a vaccine is an extraordinarily difficult undertaking. Near-term emphasis must be on educational and preventive efforts and on therapeutic intervention with drugs.

IV. CONSIDERATION OF MINUTES OF PREVIOUS MEETING

The Regents approved without change the minutes of the May 28-29, 1987, meeting.

V. DATES OF FUTURE MEETINGS

The Board will meet next on January 28-29, 1988. The Spring meeting was confirmed for May 17-18. The meeting for next Fall was set for October 6-7.

VI. REPORT OF THE NLM DIRECTOR

Dr. Donald A. B. Lindberg briefly reported on budget and personnel items. NLM does not yet know what the FY 1988 budget will be. The House has recommended \$71.5 million; the figure reported by the Senate committee was \$70.4 million. (Last year's appropriation was \$61.8 million.) The House bill earmarked \$3 million for a National Biotechnology Information Center at NLM. An additional \$1 million is earmarked for knowledge representation studies (in support of biotechnology). NLM does not know if the Senate bill will have any stipulations. As to personnel matters, Dr. Lindberg said that the NLM has lost a considerable number of FTEs (full-time equivalent positions) over the last several years, from 544 (1984) to today's 504. Some labor-intensive activities, such as providing on-site access to the collection for patrons, are suffering because of increased demand and lower staff levels. Also, the Specialized Information Services needs two more staff members to maintain two databases, on mutagenicity and teratology, that have been taken over from the NIH's National Institute of Environmental Health Sciences. Among recent appointments are Dr. Richard Hsieh (International Programs), Dr. Elliot Siegel (Planning and Evaluation), Susan Slater (deputy head of Planning), and Pamela Meredith (head of the Reference Section).

Dr. Lindberg reported on the June NIH Director's Advisory Committee meeting, which he organized. The meeting, which was attended by members of Congress, academia, and the private sector, was focused on "The Health of Biomedical

Research Institutions." Copies of the proceedings of the meeting will be sent to the Regents. The meeting was concerned with broad topics, such as the infrastructure of the universities and the traditional relationship of good faith between the universities and the Federal Government. Of the many concerns expressed, one of the most startling to the Federal participants was that each year at the beginning of the Congressional budget and hearings process, nothing but widely publicized doom and gloom is heard about the prospect of inadequate support for biomedical research. In fact, however, by later in the year, after lobbying by various pressure groups and reflection by the Congress, the moneys appropriated are generally sufficient. However, this fact does not filter back to the university investigators concerned about the level of support; as far as they can see, things are getting progressively worse. Dr. Wyngaarden's response to this problem is to schedule a series of public hearings around the country. The first of these hearings, scheduled for November 5, will take place at UCLA. Each NIH institute has been assigned to arrange one set of hearings; NLM's is February 18-19 in Dallas and Atlanta.

Dr. Lindberg brought the Regents up to date on proposed legislation in the area of biotechnology. Bills have been entered both in the House (Rep. Pepper) and the Senate (Sen. Chiles) that would create a National Biotechnology Information Center. Mr. Pepper has held hearings but there have been none in the Senate yet. The identical bills are both titled "National Biotechnology Information Act of 1987" and call for the creation of a National Biotechnology Information Center at the National Library of Medicine. Other bills, introduced by Sen. Domenici and Rep. Lujan, would expand the mission of the Department of Energy's national laboratories to include research and technology projects in mapping the human genome and the development of computerized databases for biotechnology information. It is impossible to know how the question of which agency will have the responsibility--the National Institutes of Health or the Department of Energy--will be resolved. One possible compromise might be that DOE would concentrate on the automation of sequencing, leaving other areas to the NIH. Dr. Wyngaarden has made it clear that NIH would not want to receive a mandate in biotechnology unless resources to support the work were included.

Dr. Lindberg reported briefly about "gateways," discussed at a previous meeting. As part of a collaborative project with the American Medical Association, NLM will soon be making GRATEFUL MED available through the AMANET system. He also mentioned that MicroMeSH, demonstrated by Dr. Octo Barnett at the January 1987 Board meeting, has now matured to the point where a license agreement has been signed between NLM and the Massachusetts General Hospital/Harvard Medical School to make MicroMeSH available for use in medical schools around the country. Using the system, a medical student can code such information as lectures, scientific papers, and patient data into a personal information system that may also be used after medical school. MicroMeSH is one project of the Unified Medical Language System effort.

GRATEFUL MED, said Dr. Lindberg, is doing very well. There will be a demonstration later at this meeting of the next version (3.0). Related to this are the new reduced-rate codes for student online access to NLM's databases. Also affecting online access would be a new proposal by the Federal Communications Commission that would add "access charges" to

enhanced service providers. TYMNET, TELENET, and NLM itself fall into this category and would have to bear an additional cost of between \$4 and \$5 per connect hour. This means, of course, that users of NLM's medical databases would have to pay a higher rate (totaling about \$1.3 million per year). NLM itself would have to pay approximately \$96,000 per year in appropriated funds.

Following Dr. Lindberg's presentation, there was a general discussion about how the Library could ease its problems with personnel ceilings by utilizing volunteer workers and personnel from industry under the Technology Transfer Act.

VII. ENHANCEMENTS TO GRATEFUL MED

Mr. John Anderson, Director of Information Systems, briefly described the present state of GRATEFUL MED, NLM's user-friendly front-end software for accessing MEDLINE. GRATEFUL MED has three primary purposes: (1) to ease the mechanics of hook-up between the user and the NLM computer; (2) to ease conducting the search itself on the NLM computer; and (3) to offer support in coping with NLM's controlled language, Medical Subject Headings (MeSH). Introduced 18 months ago, the software is a best-seller from the National Technical Information Service--6500 copies have been sold to date. There are now 13,000 "dues-paying members" of NLM's online network, said Mr. Anderson. GRATEFUL MED usage now accounts for about 25 percent of all MEDLINE users (and about 7.5 percent of actual computer usage). This is what NLM intended--many GRATEFUL MED users with low individual usage. GRATEFUL MED's thorough documentation was recognized earlier this year with a "blue pencil" award from the National Association of Government Communicators. Version 3.0 of the software, to be released this winter, will make available not only MEDLINE and CATLINE, but also TOXLINE, CHEMLINE, HEALTH, AVLINE, and DIRLINE. The new version will allow the user to more easily use MeSH; it also has what is called a "search engine"--that is, it can be embedded in other products such as AI/RHEUM and MicroMeSH. Following Mr. Anderson's introduction, Rose Marie Woodsmall demonstrated Version 3.0 online.

After the demonstration, Dr. Edward A. Feigenbaum commented that the long-term path of computer science is from "how" to "what." We used to have to tell a machine how to do something; now we can tell it what we want done. To do this, of course, the computer must have some "knowledge" in our domain. Today we are nearer to communicating with the machine in "natural" language rather than some language that is special to the computer. This is what we mean when we call the computer an "intelligent agent." Some call such a machine an "information appliance"; GRATEFUL MED falls into this category. The powerful personal computers now becoming available, Dr. Feigenbaum said, should no longer be termed "micros." We can expect an increase in power by a factor of 10 every 5 years. What are we going to do with this enormous information processing power? For one thing, there will be many more intelligent agents--GRATEFUL MED is but the first ministep on that very long path. Second, we will get excellent pictures on the computer screen. There will be more natural language capability and even some ability to understand speech. "Concept" searching is another idea on the

horizon that may well become a reality. If the computer does not find information that matches the language used, it will "understand" what we are after and be able to search for that concept.

VIII. INTERNATIONAL MEDLARS CENTERS

Dr. Richard Hsieh, NLM Assistant Director for International Programs, reported that the Library now has 16 international MEDLARS centers. They are established by formal agreement between the Library and another country. A ministry of health is usually asked to designate an institution in that country to serve as the locus for the center. There are two kinds of centers--those that lease tapes to mount on their own computers, and those that have online access directly to NLM's computers. In terms of usage, the international centers account for about 33 percent of tape-based billed connect hours and 10 percent of online-billed connect hours. The most recent international centers are in Egypt and China. The latter was dedicated in Beijing on June 6, 1987, at the Institute of Medical Information of the Chinese Academy of Medical Sciences. NLM is currently negotiating for centers with several countries including India and Chile. Dr. Hsieh briefly described the present state of those negotiations. The USSR and South Korea have also indicated interest in acquiring access to MEDLARS and have sent officials to the NLM for discussions.

Dr. Hsieh listed a number of problems facing some of NLM's international partners. In Mexico, for example, the economy is a factor and payment for telephone service has been irregular. With the help of the Pan American Health Organization that problem seems to have been resolved. Also, Latin American partners may provide missing journal issues to NLM as part of their quid pro quo payment. The MEDLARS center in Brazil, which offers only a subset of MEDLINE, also has had a problem in providing timely services in South America. To solve part of that problem, some major medical centers in South America will be given direct access codes, so they may search the entire MEDLINE database. Dr. Hsieh summed up by saying that NLM has a good understanding of a number of problems facing the centers. He believes that NLM should now be more proactive in seeking out sites for centers, rather than waiting for countries to come to NLM. There are a number of seriously underserved areas in the world. Also, there has been much interest expressed in GRATEFUL MED and NLM should do what it can to aid the internationalization of that software. Dr. Hsieh hopes that he will be able to visit more of the centers in the coming months and years to ensure that MEDLARS is fulfilling its potential as a great boon to the health professions around the world.

IX. NLM RETREAT

This item on the agenda was divided into three sections. The first two were reported on by Dr. Elliot Siegel, NLM Assistant Director for Planning and Evaluation. Dr. Siegel briefly described a retreat for NLM senior staff that took place in early July. The two purposes of the retreat were to discuss (1) the methodology of a study that would evaluate the impact of MEDLINE, and (2) how we should implement and follow up on the Long-Range Plan.

The Critical Incident Technique (CIT), a methodology for evaluating people, situations, and outcomes that goes back to World War II, has been selected to help the NLM evaluate the impact of MEDLINE on patient care. The CIT study is consistent with the recommendation in the Long-Range Plan that enjoins the Library to study the need of health professionals for access to literature-based information. The study will result in the systematic, standardized collection of first-hand incidents in which the availability (or nonavailability) of information was in one way or another critical to the outcome of a physician/patient encounter. NLM proposes to collect 300-500 critical incidents from practitioners who have used MEDLINE. Properly phrasing the question so as to elicit useful and valid critical incidents is most important and was extensively discussed at the retreat. Dr. Siegel showed a flow chart of the steps used in conducting the interviews. In the next several weeks NLM will be convening a small focus group of local physicians who can comment on the adequacy of the study procedures from a user's point of view. Following Dr. Siegel's presentation about the CIT, there was a brief general discussion by the Regents about how the practitioners would be queried, the selection of health professionals to be surveyed, and how they may be induced to participate.

The issue of followup to the Long-Range Plan was the second major topic at the staff retreat. Dr. Siegel briefly recounted for the new Regents how the planning was conceived and carried out. The published Long-Range Plan contains 16 goals and 51 separate recommendations for accomplishing these goals. How the Library should proceed to implement the recommendations was discussed thoroughly at the retreat. Ongoing programs of the NLM are directed toward some of the recommendations; other recommendations would require completely new activities to accomplish. Dr. Siegel surveyed the NLM program directors to produce a baseline of where we are now vis-à-vis the recommendations. More than that, the program directors also rated the relative priority of the recommendations. Analysis of these data showed that seven of the recommendations had no corresponding current activities within the Library; seven did have current activities, but no proposed new activities; only six recommendations had no current and no planned activities. It appears that the Library is pretty much "on target" in addressing the areas identified in the Long-Range Plan. As a result of discussions at the retreat, a staff consensus began to emerge as to what should be the high-priority initiatives of the Library. Biotechnology, to no one's surprise, was rated among the first of the high-priority initiatives; "gateways" and related access issues was another top-rated category, as was the further development of The Learning Center within the Lister Hill Center. Dr. Siegel said that an executive committee meets monthly to oversee implementation of the Long-Range Plan. To help keep track of the implementation, the Planning and Evaluation Office is developing a PC-based tracking and reporting system that will provide timely and accurate information without being overly burdensome on the programs. Dr. Siegel described how the tracking system will function and what kind of budget and program information it will provide to NLM management.

The discussion following Dr. Siegel's report implicitly endorsed the Library's general approach to implementing the Plan. Mr. Cathcart cautioned that with such an extensive blueprint in place, NLM management must be careful not to "overmanage" its programs or to "worship" the plan. Management must remain flexible and able to take advantage of new and innovative ideas. Others

agreed, saying that the plan must be in a continual state of change--perhaps even at times having items deleted from it. General DeHart emphasized the need for having identifiable standards or milestones in the plan, so we will know when we are successful. It was mentioned that some standards are contained in the individual panel reports; such milestones will be especially important in the current implementation phase of the Plan.

Dr. Daniel R. Masys, Director of the Lister Hill Center, provided a followup on the planning process as it regards biotechnology. He reiterated Dr. Siegel's statement that the Long-Range Plan identifies this as an important area of emphasis for the Library. Computerized factual databases containing molecular biology information are growing rapidly in size and number and are increasingly indispensable tools in biomedical research. There are a number of conceptually related but technically dissimilar national biotechnology databases, most supported by the NIH. Dr. Masys termed them an "electronic Tower of Babel." Over the past year, the Lister Hill Center has listened to experts in the field and considered carefully what steps we might take to devise better information management systems in biotechnology. The projects already under way in the Center fall into three categories: building and maintaining databases, new methods of retrieval and analysis, and education of staff and researchers.

In the first area, databases, Dr. Masys mentioned that NLM has created several new indexing tags to be used in reviewing the journal literature which will also link articles to GenBank entries. Using those new tags, NLM will be able to provide subsets of MEDLINE to database builders. NLM is also mapping the 2,000 GenBank keywords to the 15,000-term MeSH to allow automated two-way bridges between GenBank and related current literature. Another database-related project of the Lister Hill Center is the continuing support of Victor McKusick's standard reference work, Mendelian Inheritance in Man: NLM has converted the entire textbook to an online full-text searchable database and is now enhancing the text with a library of images--clinical photographs and x-rays. Lister Hill Center staff are also working with their colleagues in NLM's Specialized Information Services to build a "database of databases"--a sort of online telephone book to direct researchers to appropriate database sources of information. Finally, in the database category, LHC sponsored a workshop earlier this year attended by representatives of U.S. government agencies and various European scientific databases. The goal, which was realized, was to devise a set of system specifications for biotechnology and environmental release data.

Moving on to the second category of projects, methods of retrieval and analysis, Dr. Masys described how the Lister Hill Center's Information Retrieval Experiment (IRX) program is being adapted to the special needs of biotechnology databases. The short-term goal is to develop an automated system for NIH biologists that will give them simultaneous access to a number of databanks, including GenBank. One step in this direction has been to install a link between the NIH access network, used by NIH scientists, and the NCI supercomputer in Frederick, Maryland. In the third category, education, the NLM has sponsored a series of highly successful lectures on various aspects of biotechnology, held in the Lister Hill Center auditorium. The resulting series of videotapes has been made available by the Library on interlibrary loan.

Summing up, Dr. Masys foresees that NLM's involvement in biotechnology information will continue to grow and that NLM will become a major national site for coordinating and distributing biomedical research information of this type. Two complementary themes will be evident: NLM will serve as the "library of record" for this kind of factual information, as it now does for the published literature; NLM will be a focus of support for scientific discovery using the information databases as the substrate for experimentation. NLM will both support key molecular biology databanks and make their contents available--through gateways, digital networks, and media such as CD-ROM. NLM will continue to develop data interchange standards and computerized tools for distributed data entry by the investigators themselves. Through contracts and grants the NLM will support research into new methods of information representation and retrieval; this will be paralleled by an intramural effort within the Center's laboratories. The current educational program of workshops and lectures will be expanded as the Library becomes a recognized leader in this field. An ambitious program in biotechnology information will require substantial additional money and staff. The legislation being sponsored by Rep. Pepper and others would meet this need. However, notwithstanding new legislation, the NLM will remain active in supporting the field to the best of its ability.

X. HISTORY OF MEDICINE

Dr. John Parascandola, Chief of the History of Medicine Division (HMD), described the Library's historical collections and services. The historical collections are composed of pre-1914 printed works (about 150,000 titles), medical dissertations and pamphlets (more than 400,000), manuscripts and archives (more than 1 million), and prints and photographs (about 70,000). In time, they range from the earliest piece, a manuscript in Arabic from the 11th century, to the personal papers of 20th century physicians and scientists. The historical collections are housed separately from the general collection and are available in the History of Medicine Reading Room. Dr. Parascandola gave a brief overview of the history of the historical collections, from their beginning with John Shaw Billings in the last century, to their move for safety during World War II to Cleveland, to their present permanent home in Bethesda. Today, the HMD staff are responsible for acquiring, cataloging, preserving, and making accessible these materials; they also publish periodic catalogs and bibliographies and carry out research in the history of medicine. Records for many of the historical materials have been automated. The main NLM online public catalog contains records for most of the monographs, for example. Traditional printed and card catalogs give access to many records that have not been computerized. The Division provides copies of materials on interlibrary loan--either in paper photocopy or microfilm. As to service levels, Dr. Parascandola said that interlibrary loans and reader requests have increased by 50 percent just in the past year. Requests for pictures have doubled in the last five years. A competitive visiting historical scholar program allows the Division to bring each year to NLM a senior scholar in the field of medical history to do research and to provide the Library with the benefit of his or her expertise. Dr. Parascandola ended by telling the Regents about the Division's work in documenting 20th century medicine. The published scholarly literature is acquired routinely for the general collection; the Division is paying special attention to the personal papers of key individuals and to the archival records of medical

institutions and organizations. The importance of preserving such archival materials is emphasized in the Long-Range Plan. NLM will sponsor a conference of archivists, historians, and librarians in 1988 to discuss the common problems of documenting 20th century medicine.

Following Dr. Parascandola's presentation, Dr. Lois DeBakey noted that the increase in requests for HMD services may be due in part to the increased visibility of the Library during its sesquicentennial year. She also drew the attention of the Regents to the connection between the interests of the HMD and the current concern of the Regents with preservation. Mr. Howard noted that the National Agricultural Library (NAL) has recently opened a reading room for its historical works and he thanked Dr. Parascandola for the help NLM has provided. The NAL has a huge collection of 750,000 photographs from the U.S. Forestry Service, some 30,000 of which have been put on a laser disk. The NAL hopes to digitize some of these photographs, with cataloging data, for future storage and retrieval. In response to a question, Dr. Parascandola briefly described the NLM collection of more than 1,000 titles of historical medically related films.

XI. THE TIME PROJECT

Dr. William Harless of the Lister Hill Center described briefly the continuing program to create a series of medical education simulations--the TIME (Technological Innovations in Medical Education) Project. The project was undertaken to address the general lack of patient-centered teaching in the early years of medical school. Its purpose is to use modern technology to support the relationship between the professor and student in the classroom setting. The use of drama in the TIME project plays an important role in enhancing understanding and retention. Two simulations have been completed and are now undergoing extensive evaluation in medical education settings. Both make use of microcomputer, videodisc, and voice recognition technology. The Regents have already had demonstrated to them the first of the two simulations--The Case of Frank Hall. Dr. Harless, assisted by his staff, demonstrated today The Case of Patricia Fletcher, a patient who comes to her physician for help in controlling her obesity. Following the demonstration, Dr. Harless talked briefly about the preliminary evaluations that were done at several medical schools. In the pre-test before being exposed to "Patricia Fletcher," the students in large groups scored 71 percent; in the post-test they had increased their knowledge acquisition to 84 percent. In the small group sessions there was a similar increase. Perhaps as important as imparting knowledge, the simulation changed student attitudes toward obesity. Dr. Harless showed and discussed several tables that summarized the evaluation statistics.

Dr. Brandt commented that the "technology is superb." In the classroom, the instructor can greatly influence what is learned by how he or she proceeds through the program. Also, it is obvious that the students do get mentally and emotionally involved in the simulation. Dr. Brandt suggested that such programs might also be suitable for individual study as well as classroom situations. This provoked some discussion among the Regents as to whether it could be used optimally by the individual student. Dr. Feigenbaum commented on the high quality of TIME's speech recognition ability and that the cost of the hardware for the system is trivial in comparison with the cost of creating the program.

The consensus of the Regents is that the TIME simulations have matured greatly over the last several years and that, when the final evaluation is complete and they are made available for routine application, they hold great promise for improving medical education.

XII. PERMANENT PAPER TASK FORCE

Mr. Charles Kalina, NLM Special Projects Officer, gave the Regents a summary background about the Library's concern for deteriorating paper in its collections. At its February 1986 meeting, the Board of Regents agreed that promoting the use of permanent, or acid-free paper for scholarly publishing be a part of the NLM preservation policy. Earlier this year, the Board held a one-day hearing where medical publishers, paper manufacturers, editors, and archivists shared their views and experiences on the use of acid-free paper. Among the recommendations that came out of that meeting was that NLM should organize a Task Force of concerned parties to develop and implement a plan that would encourage the use of permanent paper. That Task Force of some 20 representatives from publishing and academia will meet at NLM later this Fall. Dr. Lois DeBakey, former Regent, is a consultant to the Task Force. The objectives of the Task Force are to identify criteria and principles for when and how to use permanent paper; to encourage publishers to identify that a publication uses permanent paper; to educate papermakers, printers, publishers and trade groups about the problem and how the use of acid-free paper can ameliorate it in the future; and to encourage the development and application of permanent paper standards. In addition to the creation of the Task Force, the hearing also recommended that NLM concentrate on increasing general awareness of the problem. Mr. Kalina described several recent actions in this regard: successful discussions with the Joint Committee on Printing which led to promulgation of specifications for acid-free paper for government printing; reference made to the Board hearing on permanent paper in the Congressional Record; inclusion of acid-free industry data in future American Paper Institute surveys; cooperation in publicizing acid-free paper use with other concerned groups; and the offering of two newspaper columns about the preservation problem to the editors of 4,000 suburban daily and weekly newspapers.

Following Mr. Kalina's presentation, Dr. DeBakey commented that the Library is wise to attack the problem at its source. She noted that increasing use of the historical collections indicate that it will be even more important in the future to be able to provide access to original material. In response to a query by Ms. Renninger, Mr. Kalina said that the Cumulated Index Medicus is published on acid-free paper. Dr. Lindberg noted that the best we can hope for is a gradual increase in acid-free publishing; we will not be creating a revolution. Mr. Welsh commented that there is an important international component of the problem that is a long way from even being addressed, let alone solved.

XIII. TECHNOLOGY ASSESSMENT

Ms. Betsy Humphreys, Deputy Associate Director for Library Operations, described recent cooperation between the NLM and the newly created Council on Health Care Technology of the National Academy of Science's Institute of Medicine (IOM). The Council, funded by Federal grant and matching private

contributions, was set up to serve as a clearinghouse for information on health care technologies and assessments, to collect and analyze data on specific technologies, to identify research and assessment needs, to develop and evaluate assessment criteria and methods, to promote education and technical assistance, and to stimulate and commission assessments. The Council has three panels--on information, methods, and evaluation. Dr. Lindberg is a member of the information panel. Representatives of this panel have met several times with NLM staff to discuss issues related to database development and access and document delivery. Although the panel sees the development of factual databases and expert systems as a longer-term solution to information problems in health care technology assessment, there are a number of more immediate steps that can be taken. NLM's databases and collections already cover a substantial portion of the literature related to health care technology assessment, and key constituents are already linked to NLM's databases and to the Regional Medical Library Network. Four potential cooperative activities between the Council and the Library are (1) expanding DIRLINE (Directory of Information Online) to include organizations active in health care technology assessment; (2) improving the coverage of technology assessment terminology in Medical Subject Headings (MeSH); (3) increasing the amount of literature dealing with the subject that is indexed for MEDLARS; and (4) increasing the range of related literature available through the Regional Medical Library Network.

As a first step, a survey was done to see how many organizations, reports and vocabulary terms in the draft IOM Medical Technology Assessment Directory were already covered by NLM. Ms. Humphreys presented several charts summarizing the survey's findings. The results in brief: (1) NLM's DIRLINE file had direct or indirect references to about 75 percent of the organizations in the directory; (2) 51 percent of the technology assessment subject terms in the draft directory directly match existing MeSH terms, an additional 40 percent were appropriate synonyms, and only 5 percent represent concepts new to MeSH which might be useful additions to the NLM vocabulary; and (3) NLM owns 61 percent of the IOM reports issued since 1982; 23 percent have been indexed. This last category was especially problematical Ms. Humphreys said, and further study is needed to determine how many of the items not owned by NLM would actually be available for acquisition (for example, some 22 percent of those not owned by NLM are available only on interlibrary loan) and how many may be available at other sites within the Regional Medical Library Network. In summary, the data collected suggest that the annual volume of technology assessment materials not now covered by NLM is not large and could be managed through a joint NLM-IOM effort. On the basis of the survey, NLM is prepared now to expand DIRLINE coverage and augment MeSH. At the same time NLM would gather additional information needed to make decisions on how to expand the NLM collections and the indexing coverage of health technology assessment literature. With partial support from NLM, IOM intends to hire a staff person to work on these and related projects.

Following Ms. Humphreys' presentation, Dr. William N. Hubbard, Jr., Chairman of the NAS Council on Health Care Technology (and a former member and Chairman of the Board of Regents), gave a brief recap of the origins and purposes of the Council. He noted that there were many areas of intersection between the NLM Long-Range Plan and the Council's purposes, including recommendations for enhanced information services, practice-linked databases, and the Unified Medical Language System. Mr. Cathcart,

also commenting on the subject, warned on the one hand against being seduced by the "overpromise of technology," and on the other against becoming "technologically complacent." It is important for the United States to keep its lead in technology. Mr. Cathcart, a hospital administrator, has chaired a small panel on technology. He believes that the impetus behind the implementation of patient-care technology should to the greatest extent possible be market-based, and not forced by government regulation. A partnership should be fostered between technology developers, providers, and suppliers since they have a shared responsibility for seeing that useful and cost-efficient and new technological applications are developed.

XIV. REPORT OF THE ACTING ASSOCIATE DIRECTOR FOR EXTRAMURAL PROGRAMS

Mr. Arthur J. Broering explained that no projections for next year's grant awards had been made because the President and Congress had not resolved their differences on a budget for FY 1988. He then drew attention to supplemental material in the agenda folder, regarding NLM's Research Training Grant Program in Medical Informatics. With the award of eight training grants in July, Extramural Programs can show early and measurable progress toward implementation of the goals of the Long-Range Plan. Four of the grants were five-year awards for expanded programs of current grants at Stanford University, Harvard School of Public Health, New England Medical Center Hospital, and the University of Minnesota. All had been operating under active training grants since 1984. In addition, new five-year awards were made for the establishment of programs in medical informatics at Yale University, Washington University at St. Louis, and the University of Pittsburgh. A fourth-year continuation award was made to the University of California at San Francisco.

MEETING CLOSED FOR THE REVIEW OF GRANT APPLICATIONS, 11:15 A.M., October 1, 1987

XV. REVIEW OF PENDING APPLICATIONS

Before proceeding with the consideration of pending applications, Mr. Broering informed Board members of confidentiality and conflict-of-interest procedures and reminded them to sign, at the conclusion of the grant application review, the statement noting that they had not participated in the discussion of any application which presented a conflict of interest.

The Board reviewed 51 applications, requesting \$16,208,432, and recommended for approval 32 applications in the amount of \$9,247,196 for the total years requested. Seventeen applications in the amount of \$4,376,529 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 May meeting were considered by the Board's Extramural Programs Subcommittee and noted and concurred with by the Board of Regents.

XVI. ADJOURNMENT

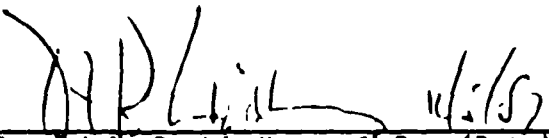
The meeting was adjourned at 11:30 a.m. on Thursday, October 1, 1987.

- Tuesday, September 28, 1987, 1:00 to 2:00 p.m.
(Subcommittee on Pricing of NLM Services--List of Attendees under Attachment B)
- Tuesday, September 28, 1987, 2:00 to 3:05 p.m.
(Extramural Programs Subcommittee--List of Attendees under Attachment C)
- Tuesday, September 28, 1987, 3:00 to 4:00 p.m.
(Lister Hill Center Subcommittee--List of Attendees under Attachment D)

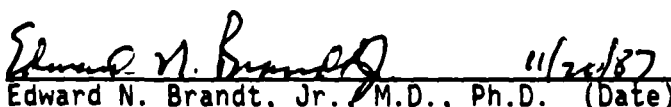
ACTIONS TAKEN BY THE BOARD OF REGENTS

- 1. The Board concurred with 51 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)
 Executive Secretary



 Edward N. Brandt, Jr., M.D., Ph.D. (Date)
 Chairman

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 ngton, D.C. 20350-2000 202-697-0587

CURRAN, Patrick M., Capt., MC, USN
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BOARD OF REGENTS
SUBCOMMITTEE ON PRICING OF NLM SERVICES

September 29, 1987

1:00 to 2:00 p.m.

A T T E N D E E S

Subcommittee Members Present:

Dr. Don E. Detmer
Dr. Lois E. DeBakey, Consultant
Vice Admiral James A. Zimble (Observer)

Unable to Attend:

Mr. H. Robert Cathcart
Mr. Russell L. Fenwick
Mr. Joseph H. Howard
Dr. William J. Welsh

NLM Staff Present:

Mr. Kent A. Smith, Deputy Director
Mr. Harry Bennett, Deputy Director for Operations, OCCS
Mrs. Sally Burke, Management Analyst, OD
Mr. Kenneth Carney, Executive Officer, OD
Mrs. Lois Ann Colaianni, Associate Director, LO
Mr. Charles Kalina, Special Project Officer, OD
Dr. Henry Kissman, Associate Director, SIS
Mr. Sheldon Kotzin, Chief, Bibliographic Services Division, LO
Mr. Mark Rotariu, Chief, Office of Financial Management, OD

Although no pricing issues required action by the Board of Regents at the September meeting, the Pricing Subcommittee met for NLM staff briefings on the following items:

- o New pricing structure for toxicology information services approved at the May 1987 Board meeting.
- o NLM's current general pricing policy.
- o The MEDLARS cost allocation method and an analysis of the FY 1986 cost recovery figures.
- o An overview of the new student code policy.
- o Changes in the database license to permit redistribution and CD-ROM pricing.
- o Recent FCC proposal to impose access charges on data communications carriers such as Tymnet and Telenet which would impact NLM telecommunications costs.

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

EXTRAMURAL PROGRAMS SUBCOMMITTEE MEETING

September 29, 1987

2:00 to 3:05 p.m.

A T T E N D E E S

Subcommittee Members Present:

Dr. Grant V. Rodkey, Chairman
Dr. Ann K. Randall
Dr. Jay P. Sanford
Dr. Eugene A. Stead, Jr.

NLM Staff Present:

Mr. Arthur J. Broering, Acting Associate Director, EP
Mrs. Ruth Bortz, Grants Management Specialist, EP
Dr. Jeanne L. Brand, Chief, International Programs Branch, EP
Mr. Peter Clepper, Program Officer, EP
Mrs. Karin K. Colton, Committee Management Assistant, EP
Ms. Rose Marie Holston, Program Analyst, EP
Mrs. Frances E. Johnson, Program Officer, EP
Dr. M. Kathleen Nichols, Grants Management Specialist, EP
Mr. Richard T. West, Chief, Office of Planning and Evaluation, EP
Mr. Randall Worthington, Program Officer, International Programs
Branch, EP

LISTER HILL CENTER SUBCOMMITTEE MEETING

September 29, 1987

3:00 to 4:00 p.m.

A T T E N D E E S

Subcommittee Members Present:

Dr. Edward A. Feigenbaum

Unable to Attend:

Dr. Faye G. Abdellah
Dr. David T. Kingsbury

NLM Staff Present:

Dr. Daniel R. Masys, Director, LHNCBC

Dr. Masys presented a review of current Lister Hill Center programs and projects. Those present discussed in detail pending legislation for a National Center for Biotechnology Information to be located within the National Library of Medicine and the implementation of the Center, including recruitment of a core staff and design of a workshop and seminar activities.

APPLICATIONS APPROVED BY COUNCIL
(ARRANGED NUMERICALLY BY PROGRAM)

COUNCIL DATE: SEPT./OCT. 1987

INSTITUTE/DIVISION: NATIONAL LIBRARY OF MEDICINE

APPLICATION NUMBER	PROJECT TITLE	AMOUNTS RECOMMENDED
2 R01 LM03116-11	TECHNICAL EVALUATION OF THE CLINICAL LITERATURE	11 388,068 12 411,352 13 436,033
2 R01 LM03120-09	EXPERT COMPUTERIZED BIBLIOGRAPHIC SEARCH ASSISTANT	09 96,300 10 96,262 11 97,120
1 R01 LM04239-01A4	COMPUTER TRANSLATION OF MEDICAL TEXT	01A4 115,037 02 114,110
2 R01 LM04336-03	EXPERT COMPUTER SYSTEMS WHICH CRITIQUE PHYSICIAN PLAN	03 110,724 04 119,928 05 128,180
1 R01 LM04433-01A2	MEDICAL FLORA OF SOUTH AMERICA	01A2 26,331 02 28,231
1 R01 LM04451-01A1	KNOWLEDGE SEEKING BY PHYSICIANS IN CLINICAL PRACTICE	01A1 250,048 02 225,423 03 194,530
3 R01 LM04487-02S1	COMPUTER-BASED EXERCISES IN PATHOPHYSIOLOGIC DIAGNOSIS	02S1 72,325 03S1 87,915 04S1 95,685
2 R01 LM04577-02	BIOLOGY & GENDER IN TRADITIONAL CHINA 1600-1850	02 19,241

APPLICATIIONS APPROVED BY CUUNCIL
 (ARRANGED NUMERICALLY BY PROGRAM)
 PROG. CLASS: COUNCIL DATE: SEPT./OCT. 1987
 INSTITUTE/DIVISION: NATIONAL LIBRARY OF MEDICINE

APPLICATION NUMBER	PROJECT TITLE	AMOUNTS RECOMMENDED
1 R01 LM04635-01A1	INDEXING AND RETRIEVING INFORMATION	01A1 170,780 02 181,027 03 191,889
1 R01 LM04651-01A1	SILENT TRAVELERS: GERMS, GENES & NATIVISM, 1880-1940	01A1 28,822
1 R01 LM04686-01	CONDUCT UNBECOMING A HUMAN: LIBEL TRIAL OF HUMAN SURGEON	01 25,000
1 R01 LM04690-01	MEDICINE AND WELFARE IN EIGHTEENTH-CENTURY ENGLAND	01 5,620
1 R01 LM04836-01	FACS-PENGUIN: AN EXPERT WORKSTATION FOR FLOW CYTOMETRY	01 254,543 02 290,993 03 280,913
1 R01 LM04837-01	HEALTH SCIENCE INFORMATICS	01 138,040 02 66,947
1 R01 LM04839-01	ENCODING KNOWLEDGE OF PROCEDURES FOR EXPERT SYSTEM	01 171,079 02 174,673 03 182,713
1 R01 LM04841-01	META-ANALYSIS TO IMPROVE KNOWLEDGE SYNTHESIS	01 145,487 02 130,596

AMENDED APPLICATION RECEIVED

APPLICATIIONS APPROVED BY COUNCIL
(ARRANGED NUMERICALLY BY PROGRAM)

COUNCIL DATE: SEPT./OCT. 1987

INSTITUTE/DIVISION: NATIONAL LIBRARY OF MEDICINE

APPLICATION NUMBER	PROJECT TITLE	AMOUNTS RECOMMENDED
1 R01 LM04843-01	INFORMATION AND COGNITION IN MEDICAL EDUCATION	01 148,053 02 73,154
1 R01 LM04855-01	DISEASE, DEBILITY & DEATH IN BRITISH MALAYA	01 25,000

(ARRANGED NUMERICALLY)

COUNCIL DATE: SEPT./OCT. 1987

INSTITUTE/DIVISION: NATIONAL LIBRARY OF MEDICINE

PROG. CLASS:

APPLICATION NUMBER	PROJECT TITLE	AMOUNTS RECOMMENDED
1 R01 HS05936-01	DUALS SECONDARY REVIEW: LM META-ANALYSIS FOR MEDICINE: APPLICATION AND METHODS	01 172,236 02 199,338 03 211,300
1 R01 HS05951-01	DUALS SECONDARY REVIEW: LM BEHAVIORAL INFLUENCES AND DIAGNOSTIC TECHNOLOGIES	01 44,000

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

COUNCIL DATE: SEPT./OCT. 1987

INSTITUTE/DIVISION: NATIONAL LIBRARY OF MEDICINE

APPLICATION NUMBER	PROJECT TITLE	AMOUNTS RECOMMENDED
1 R29 LM04641-01A1	DEVELOPING A STANDARDIZED MEDICAL DIAGNOSTIC TERMINOLOGY	01A1 61,246 02 41,214 03 43,687 04 46,308
1 R29 LM04667-01A1	EPIDEMIOLOGIC SYSTEMS IN CARDIOVASCULAR DECISION MAKING	01A1 61,464 02 65,903 03 70,072 04 74,504 05 76,848
1 R29 LM04838-01	CRITERIA-BASED KNOWLEDGE ACQUISITION TOOLS IN MEDICINE	01 66,256 02 73,521 03 64,278 04 69,891 05 75,991
1 R29 LM04845-01	A COMPUTERIZED CASE-MIX SYSTEM USING FREE-TEXT AND	01 64,781 02 66,953 03 72,402 04 70,171 05 74,573

MEMORANDUM APPROVED BY COUNCIL - DUAL REVIEW
(ARRANGED NUMERICALLY)

COUNCIL DATE: SEPT./OCT. 1987

INSTITUTE/DIVISION: NATIONAL LIBRARY OF MEDICINE

APPLICATION NUMBER	PROJECT TITLE	AMOUNTS RECOMMENDED
1 R29 HL38333-01A1	DUALS SECONDARY REVIEW: LM	01A1 77,505
	MULTIMODALITY CARDIAC IMAGE UNDERSTANDING	02 70,158
		03 70,920
		04 73,750
		05 57,576
1 R29 NR01483-01A1	DUALS SECONDARY REVIEW: LM	01A1 65,910
	A NURSING INTERVENTION LEXICON & TAXONOMY	02 92,572
		03 78,027
		04 84,892
		05 28,599

ATTACHMENTS APPROVED BY COUNCIL
(ARRANGED NUMERICALLY BY PROGRAM)
COUNCIL DATE: SEPT./OCT. 1987
INSTITUTE/DIVISION: NATIONAL LIBRARY OF MEDICINE
PROG. CLASS:

APPLICATION NUMBER	PROJECT TITLE	AMOUNTS RECOMMENDED
1 G07 LM04389-01A1	MEDICAL LIBRARY RESOURCE IMPROVEMENT	01A1 4,000
1 G07 LM04831-01	MEDICAL LIBRARY RESOURCE IMPROVEMENT	01 4,000
1 G07 LM04832-01	MEDICAL LIBRARY RESOURCE IMPROVEMENT	01 4,118

REARRANGED NUMERICALLY BY PROGRAM
COUNCIL DATE: SEPT./OCT. 1987

COUNCIL DATE: SEPT./OCT. 1987

INSTITUTE/DIVISION: NATIONAL LIBRARY OF MEDICINE

APPLICATION NUMBER	PROJECT TITLE	AMOUNTS RECOMMENDED
1 G08 LM06724-01	ONLINE MEDLINE AT THE UNIVERSITY OF MISSOURI	01 189,149 02 174,964 03 230,794
1 G08 LM04844-01	INTEGRATED ACADEMIC INFORMATION MANAGEMENT SYSTEM	01 144,525 02 131,827
1 G08 LM04852-01	ORIENTAL MEDICINE COLLECTION ACCESS PROJECT	01 81,006 02 73,787
1 G08 LM04853-01	LEARNING RESOURCES CENTER	01 106,441 02 72,676

AS OF 10/15/87

RESUME OF COUNCIL RECOMMENDATIONS, BY PROGRAM
(PRIVILEGED COMMUNICATION)

COUNCIL DATE: SEPT./OCT. 1987
COUNCIL RECOMMENDATION PRIORITY
ACTION AMOUNTS NOTATION

IRG RECOMMENDATION PRIORITY SCORE

INSTITUTE/DIVISION: NATIONAL LIBRARY OF MEDICINE
APPLICATION, APPLICANT & ORGANIZATION

FY YEAR

REQUESTED

ACTION AMOUNTS

APP

ACTION AMOUNTS

IRG: SRC	FY YEAR	REQUESTED	ACTION AMOUNTS	IRG RECOMMENDATION PRIORITY SCORE	APP	ACTION AMOUNTS	COUNCIL RECOMMENDATION PRIORITY NOTATION
1 T15 LM07060-01	88	374,975	185,744	219	APP	185,744	CON
BLOIS, MARSDEN S, JR	02	407,050	205,685			205,685	
UNIVERSITY OF CALIFORNIA SAN FRANCISCO	03	465,772	221,720			221,720	
SAN FRANCISCO CALIFORNIA	04	509,026	267,350			267,350	
10-NO HUMAN SUBJECTS INVOLVED.	05		282,588			282,588	
10-NO LIVE VERTEBRATE ANIMALS INVOLVED.							

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

A G E N D A

85th Meeting of the

BOARD OF REGENTS

9:00 a.m., May 28-29, 1987

Board Room
Mezzanine of
National Library of Medicine

MEETING OPEN: All day on May 28 and from 9:00 a.m. to approx. 11:30 a.m. on May 29.
MEETING CLOSED: From 11:30 a.m. to adjournment on May 29 for the review of grant applications.

- | | |
|--|-------------------------|
| CALL TO ORDER AND INTRODUCTORY REMARKS | Dr. Albert E. Gunn |
| . REMARKS BY THE SURGEON GENERAL, PHS | Dr. C. Everett Koop |
| I. REMARKS BY THE DIRECTOR, NIH | Dr. James B. Wyngaarden |
| . CONSIDERATION OF JANUARY MINUTES | Dr. Albert E. Gunn |

TAB I
(Agenda Book)

FUTURE MEETING DATES

Fall Meeting: Sept. 30-Oct. 1, 1987 (W-Th)--CONFIRMED
(Medicine-and-the-Art Colloquium Oct. 2)

Winter Meeting: Jan. 28-29, 1988 (Th-F)--CONFIRMED

Spring Meeting: May 19-20, 1988 (Th-F)--

PLEASE NOTE Potential Conflicts with
May 1988 Dates:

American Assoc. for Medical Systems and Informatics (AAMSI) Annual Mtg., 5/11-14/88, San Francisco
Medical Library Assoc. Annual Mtg., 5/20-26/88, New Orleans
National Institute of Allergy and Infectious Diseases Council Mtg. 5/23-24/88, Bethesda

COFFEE BREAK

- II. JOURNAL SELECTION POLICY TAB VII
 Discussion Mrs. Lois Ann Colafanni
Dr. Albert E. Gunn,
Discussant
 Board Members
- COFFEE BREAK
- .III. MEDLARS III FOLLOWUP TAB VIII
 Discussion Mr. John Anderson
 Board Members
- .IV. REPORT OF THE ACTING ASSOCIATE DIRECTOR FOR EXTRAMURAL PROGRAMS TAB IX
Mr. Arthur J. Broering
EP Subcommittee,
Discussants
- V. REPORT OF THE NOMINATING COMMITTEE Dr. William J. Welsh

MEETING CLOSED FOR THE REVIEW OF GRANT APPLICATIONS FROM 11:30 A.M. TO ADJOURNMENT

(Application Book)

- .VI. SPECIAL APPLICATIONS
 - A. Foreign TAB I Dr. Roger W. Dahlen
 - B. Split Vote TAB II " " " "
 - C. IAIMS TAB III " " " "
 - D. Training Grants TAB IV " " " "
 - E. Research Over \$100,000 TAB V " " " "
- .VII. SUMMARY STATEMENTS
 - A. Research TAB VI Dr. Roger W. Dahlen
 - B. FIRST Awards TAB VII " " " "
 - C. Resource TAB VIII " " " "
 - D. Improvement TAB IX " " " "
 - E. Publication TAB X Dr. Jeanne L. Brand
- XVIII. ADJOURNMENT Dr. Albert E. Gunn

D E P A R T M E N T O F H E A L T H A N D H U M A N S E R V I C E S

NATIONAL INSTITUTES OF HEALTH
NATIONAL LIBRARY OF MEDICINE

BOARD OF REGENTS
MINUTES OF THE 85TH MEETING
MAY 28-29, 1987

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/
May 28-29, 1987

The Board of Regents of the National Library of Medicine was convened for its eighty-fifth meeting at 9:00 a.m. on Thursday, May 28, 1987, in the Board Room of the National Library of Medicine, Bethesda, Maryland. Dr. Albert E. Gunn, Chairman of the Board of Regents and Associate Dean for Admissions, The University of Texas Medical School at Houston, presided. In accordance with P.L. 92-463 and the Determination of the Director, NIH, and as announced in the Federal Register on April 9, 1987, the meeting was open to the public from 9:00 a.m. to 5:15 p.m. on May 28 and from 9:00 a.m. to 11:15 a.m. on May 29. The meeting was closed from 11:15 a.m. to adjournment at 11:45 a.m. on May 29 for the review, discussion, and evaluation of grant applications. A Board roster is enclosed under Attachment A.

Board members present were:

Dr. Edward N. Brandt, Jr.
Mr. H. Robert Cathcart
Dr. Edward A. Feigenbaum (May 28)
Dr. Albert E. Gunn
Mr. Joseph H. Howard (Ex Officio)
Dr. C. Everett Koop (Ex Officio) (May 28)
Ms. Nina W. Matheson (May 28)
Dr. Ann K. Randall
Dr. Grant V. Rodkey
Dr. Jay P. Sanford
Dr. Eugene A. Stead, Jr.

Alternates to ex officio members present were:

Dr. Faye G. Abdellah, representing Dr. C. Everett Koop.
Dr. Charles N. Brownstein, representing Dr. David T. Kingsbury.
Col. Bryant Mauk, representing Lt. Gen. Murphy A. Chesney.
Capt. Jerry McClelland, representing Vice Admiral Lewis H. Seaton.
Col. Howard E. Fauver, representing Lt. Gen. Quinn H. Becker.
Ms. Karen Renninger, representing Dr. John Gronvall.
Dr. William J. Welsh, representing Dr. Daniel J. Boorstin.

Unable to attend:

Mr. Russell L. Fenwick
Mr. John K. Lopez

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 Medical 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. Michael Ackerman, Chief, Educational Technology Branch, LHNCBC
Mr. John Anderson, Director, Information Systems, OD
Ms. Duane Arenales, Chief, Technical Services Division, LO
Dr. Jeanne Brand, Chief, International Programs Branch, EP
Mr. Arthur J. Broering, Acting Associate Director for Extramural Programs
Mr. Kenneth Carney, Executive Officer, OD
Ms. Lois Ann Colaianni, Associate Director for Library Operations
Dr. George J. Cosmides, Deputy Associate Director, SIS
Dr. Roger W. Dahlen, Chief, Biomedical Information Support Branch, EP
Mr. William J. Hagarty, Chief, Computer Services Branch, OCCS
Dr. Richard K. C. Hsieh, Assistant Director for International Programs
Ms. Betsy Humphreys, Deputy Associate Director for Library Operations
Mr. Charles R. Kalina, Special Projects Officer, OD
Dr. Lawrence Kingsland III, Chief, Computer Science Branch, LHNCBC
Dr. Henry M. Kissman, Associate Director for Specialized Information Services
Mr. Sheldon Kotzin, Chief, Bibliographic Services Division, BS
Dr. Daniel R. Masys, Director, Lister Hill National Center for Biomedical
Communications
Mr. Robert B. Mehnert, Chief, Office of Inquiries and Publications Management, OD
Dr. John L. Parascandola, Chief, History of Medicine Division, LO
Mr. Arthur Robinson, EEO Officer
Mr. Mark J. Rotariu, Chief, Office of Financial Management, OD
Dr. Elliot R. Siegel, Acting Associate Director for Planning and
Evaluation
Ms. Susan Slater, Senior Program Analyst, OD
Mr. Richard T. West, Chief, Office of Program Planning and Evaluation, EP

Others present included:

Dr. James B. Wyngaarden, Director, NIH
Dr. Morris F. Collen, Chairman, Board of Scientific Counselors, NLM
Dr. Lois E. DeBakey, Professor of Scientific Communications, Baylor
College of Medicine, Consultant
Ms. Maxine Brown, University of Illinois
Dr. Jerry Cox, Washington University
Mr. Edwin Kent Gray, Chief, Emergency Response Branch, ATSDR, Atlanta
Dr. Bruce McCormick, Texas A & M University
Dr. David Salzman, Division of Advanced Scientific Computing, NSF
Ms. Ileen Stewart, Executive Secretary, Special Study Section, NIH

Members of the public present:

Dr. Walter R. Panko, BBN, Inc., Arlington, VA

I. OPENING REMARKS

Dr. Albert E. Gunn, Chairman, welcomed the Regents to the 85th meeting of the Board of Regents. He welcomed ex officio alternates Colonel Bryant Mauk, USAF, and Captain Jerry McClelland, USN, and consultants Dr. Lois E. DeBakey and Dr. Morris F. Collen.

II. REMARKS OF THE SURGEON GENERAL

Dr. C. Everett Koop described a number of meetings taking place this week on the subject of AIDS. They are preparatory to a briefing of President Reagan on the subject; the President will be making an important statement on AIDS next week. Mandatory testing for AIDS is currently being widely debated. Dr. Koop laid out the arguments on both sides and said that at least for the time being the rights of the individual for privacy supersede the public's right to know. He mentioned three target groups that are being considered for mandatory testing--prisoners, aliens, and those applying for a marriage license. Dr. Koop discussed the dubious accuracy of the tests and argued especially against mandatory testing for the last group. He outlined three target audiences for education/information campaigns on AIDS--prepuberal, adolescent, and post adolescent. There is evidence that the sexual mores of the last group have changed dramatically; the prepuberal group represents our best opportunity for education about abstinence. Current education efforts to reach adolescents, however, have come under fire from those who object to teaching teenagers about the use of condoms in avoiding AIDS. In response to a question, Dr. Koop and Dr. Wyngaarden discussed current progress on vaccine and drug studies that show promise in helping control AIDS.

III. REPORT OF THE NIH DIRECTOR

Dr. James B. Wyngaarden briefed the Regents on the NIH Centennial--events that have already occurred and those that are upcoming. Because of widespread interest in sponsoring events, NIH has extended the official Centennial Year from October 1 to the end of December. The NIH Director discussed the prospects for the 1988 budget; although there is no official word yet, NIH is hopeful that the recommended level will be for an increase to at least \$6.5 billion. On the subject of biotechnology, Dr. Wyngaarden said that the Director's Advisory Committee last fall issued two program announcements--one to encourage research in methods of chromosome mapping, DNA sequencing, methods of purification, etc., and one to stimulate research in computer handling of DNA and related information. Virtually every NIH component is interested in participating in these two programs. The Director's Advisory Committee agreed on several major points, one of which was that the most immediate issue to be faced with respect to sequencing is handling the vast amount of data being generated. In connection with the subject of AIDS research, Dr. Wyngaarden said that there is a sense that the successful strategies for developing antibacterial agents are not so successful when applied to antiviral agents. Dr. Wyngaarden mentioned the remarkable accomplishments of recent years based on x-ray crystallography and other powerful new techniques that permit one

to map the surface of viruses in almost atomic detail. This is the direction NIH is moving toward with the AIDS virus. At the next Director's Advisory Committee (DAC), he noted, the group will address the subject of the "health" of those institutions that perform research under grants from the NIH. Many feel that the institutions are fragile and need strengthening. The DAC will hear from the universities and review the requirements called for by the Federal Government to see if unnecessary expensive measures can be eliminated and the system simplified. Dr. Wyngaarden mentioned the DeWitt Stetten NIH Museum of Medical Research, recently dedicated at NIH in the Clinical Center.

IV. DATES OF FUTURE MEETINGS

The Board will meet next on September 30 and October 1. The Library's Medicine-and-the-Arts Symposium will follow that meeting on October 2. The winter meeting was confirmed for January 28-29. The meeting for next spring was set for May 17-18, 1988.

V. CONSIDERATION OF MINUTES OF PREVIOUS MEETING

The Regents approved without change the minutes of the January 29-30, 1987, meeting.

VI. REPORT OF THE NLM DIRECTOR

Dr. Donald A. B. Lindberg reported on the 1988 budget prospects. The President's proposed budget of \$64.4 million represents an increase of slightly more than 2 percent; however it is \$2 million short of the amount needed to maintain current services. Citizen witnesses at the recent hearings recommended varying larger amounts, up to \$89 million. In the area of personnel, Dr. Lindberg noted that the current ceiling of 504 is 40 fewer than when he came to NLM in 1984. NLM needs special help to maintain Reading Room services and two additional Full-Time Equivalents (FTEs) in the Toxicology Information Program if the Library is to take over the operation of two existing databases in mutagenic and teratogenic information. The NIH Resource Allocation Group has granted a temporary increase for the former and is considering the latter. New appointments at NLM include: Dr. Michael Ackerman, Chief of the Lister Hill Center Educational Technology Branch; Dr. Lawrence C. Kingsland III, Chief of the Lister Hill Center Computer Science Branch; and Mr. William Hagarty, Chief of the Computer Services Branch, Office of Computer and Communications Systems. Dr. Lindberg announced the awarding of the 1987 NLM Director's Award to Dorothy Hanks, the recently retired librarian in the History of Medicine Division, "in recognition of her exceptional skills as a reference and acquisitions librarian for the historical collections." The Director also announced that Lois Ann Colaianni will receive the NIH Director's Award and that Dr. Daniel R. Masys the Public Health Service Commissioned Corps Commendation Medal.

On the subject of biotechnology information, Dr. Lindberg noted that the Board's Long-Range Plan strongly recommended that NLM become involved in the handling of information in this area where the potential payoffs are great. He

noted that the Lister Hill Center, within its current budget and staff restraints, has already made this a top priority. One possible outcome of this work is a very advanced information-handling system for the scientists here at NIH. However, current resources will not permit the Center to make a significant contribution to scientists nationally. In this regard, NLM is encouraged that Rep. Claude Pepper has reintroduced his bill to create a National Biotechnology Information Center at NLM. The recent hearings held by Mr. Pepper focused attention on the need for improved information-handling techniques for biotechnology information. Dr. Lindberg said that both patients and scientists testified at the hearing, as did Dr. Wyngaarden and he.

The NLM Director dealt briefly with several subjects:

- o Progress continues in our efforts to increase the use of permanent paper for medical publishing--minutes of the January hearing will soon be available to the Regents, and a Task Force has been created to press on.

- o There is also progress in NLM's attempts to allow electronic gateways with access to NLM's MEDLARS--a fair and workable licensing agreement has been written, so other organizations can have gateways to us; the first organization to conclude such an agreement with us is the AMA, whose MINET information system will have a gateway to NLM's GRATEFUL MED.

- o The Board of Regents Long-Range Plan has been distributed to the planners and consultants, and NLM is sending copies on request.

- o The usage of NLM's Reading Room, which is open to all, has increased appreciably in recent years. This rising workload, combined with declining staff levels, has created practical problems in providing services to patrons. NLM has decided that it will not limit hours of clientele, but will seek other solutions. Among these are to put more journals and duplicates in the Reading Room and to provide online access to materials specifically in the Reading Room to encourage their use first. A fallback position would be to tell patrons that they must put their requests in a queue with interlibrary loan requests and that all would receive identical service. NLM hopes that this will not be necessary. NIH's Resource Allocation Group has allowed NLM three FTEs to help improve the service in the Reading Room.

Following the Director's report, Dr. Brandt asked about the problem discussed at the last meeting concerning approval for two of NLM's SES positions held up by the Department. Dr. Gunn replied that he received a cordial but non-committal reply to his letter on behalf of the Regents from the Under Secretary. There was a brief discussion about the National Biotechnology Information Center--the prospects for further legislative action, how the Regents as individuals could support it, and the relation between such an organization and the private sector. Finally, after a brief discussion of the subject, Dr. Gunn expressed the consensus opinion of the Board that the Library was taking the proper steps to address the problems resulting from increasing on-site use of the Reading Room.

VII. PRICING POLICIES AND MEDLARS FEES

Mr. Kent A. Smith, NLM Deputy Director, presented a brief history of NLM's pricing policies for MEDLARS services. The authority for the Library's charging for services is clearly set out in the 1956 National Library of Medicine Act. Subsequent to this authority, the Board of Regents has determined that it is appropriate to charge for MEDLARS services; the actual pricing structure has been left up to the discretion of the NLM Director, with periodic review by a Regents' subcommittee. Mr. Smith noted that there have been many studies of our pricing policy--by the Congress, the Executive Branch, and others. These studies have vindicated the Library's policies in recovering the full costs for accessing its databases. The policies are also in accordance with certain OMB regulations--Circular A-25 (which sets out cost-recovery criteria) and Circular A-130 (information management regulations).

There are several guiding principles in establishing a pricing structure:

- o Medical information such as that collected by NLM is primarily a public good and not merely a commodity to be bought and sold.
- o Charges may be assessed to recover certain costs and also to discourage trivial use of the system.
- o All generation costs of building the database should be charged to the NLM appropriation.
- o Access costs may be recovered by charges to users.
- o All U.S. users should have equal access at equal prices to the NLM databases; foreign users may be charged at higher rates since they have not contributed to building the databases through taxes.

Mr. Smith described in some detail how the costs are actually set--what factors are included in "access" costs, how prices are affected by the time of day, how certain databases must be charged for at a higher rate--and how the charges are collected for the Library by the National Technical Information Service. The entire pricing structure has recently been reviewed by NLM staff and consultants. One of the critical issues in this review was that of non-bibliographic (or factual) databases versus bibliographic (or reference) databases. Among the results of the review were the following conclusions: Factual databases, previously excluded from general pricing policies, should be part of the overall MEDLARS pricing structure; prices for online searches and offline printouts should be increased to keep up with rising costs (however there will be no increase for commercial vendors who lease MEDLARS tapes); and the present foreign surcharge is fair and does not need to be altered. The new pricing structure, Mr. Smith said, will raise the rate the equivalent of \$1.50 per hour (to an average of \$22.50) and the per-page cost for offline by \$.07 (to \$0.25). The average cost per search will go up from \$1.72 to \$1.85.

Dr. Lois E. DeBakey, former Regent (and currently a consultant to the Pricing Subcommittee), said that NLM is acting responsibly in its pricing policies. This is confirmed by the many studies on the issue conducted by outside groups. She agreed that the proposal to include TOXNET and future factual databases within the MEDLARS family was reasonable--their former separation was artificial. Also reasonable is the slight rise in the usage cost that is proposed. She recommended that the Board vote to reaffirm the existing pricing policies and the proposed increase in prices. Mr. Howard said that the Board Pricing Subcommittee agreed with the proposal to increase the price and he moved that the Board vote to adopt the increase. The Board voted by voice vote to approve the motion. There was one abstention.

VIII. EXPERT SYSTEMS FOR CHEMICAL EMERGENCY RESPONSE

Dr. Henry Kissman, NLM Associate Director for Specialized Information Services (SIS), described work being done within his division to develop an expert system for chemical emergency response. The project is one of several being conducted by NLM's Specialized Information Services as part of the HHS activities under the Superfund Act of 1980 (and its 1986 amendment). NLM has an interagency agreement with the Agency for Toxic Substances and Disease Registry (ATSDR)--the lead agency for Superfund activities within the Department. Specifically, NLM identified several of its chemical and toxicological files for augmentation to meet Superfund information needs and inaugurated a new online file system, TOXNET. For responses to chemical emergencies, SIS developed a new PC-based workstation which uses special software called Micro-CSIN to retrieve information from diverse online files on various systems. Last fall, SIS began to develop an artificial intelligence or expert system to help obtain and use information to respond to a chemical emergency. Dr. Kissman described the nature of chemical emergencies, the crucial need for obtaining information rapidly onsite, and the responsibilities at various levels of government in helping to respond to such emergencies. SIS has begun work on the system in collaboration with experts in the Lister Hill Center. Using contract assistance, information has been collected from experts as to just what information is needed and how it is handled in chemical emergencies. Originally it was thought that the expert system would have to frequently access many remote databases; although it will have that capability, it was found that in fact many of the requests for information from such a system could be satisfied by searching NLM's Hazardous Substances Data Bank (HSDB).

A prototype expert system has been outlined that contains a number of modules, including an interviewer module, a reasoner module, a local knowledge base, and a precedent file. Using a diagram, Dr. Kissman presented brief scenarios of how the system might be used in an emergency. Work has progressed to the point where NLM now has an outline of the control structure for the completed system and actual computer programs for the interviewer and reasoner modules and a working model that can ask questions about the type of chemical emergency, sort of containers involved, physical conditions, casualties, etc., enter Micro-CSIN and search the HSDB, retrieve selected information, and display or type out a report. It is still rudimentary, but it points the way to a final system. NLM expects to have the entire prototype of the expert system completed and working by October 1987; NLM and the ATSDR will be evaluating the system in the next fiscal year. A demonstration of the expert system will be provided at a future Regents' meeting.

Following Dr. Kissman's report, Dr. Elliot Siegel, NLM Acting Associate Director for Planning and Evaluation, reported on a major NLM study about to be started on the subject of how to evaluate expert systems in medicine. Dr. Schoolman, Dr. Kingsland, and he are the principal NLM staff involved; NIH is assisting in funding the project, and the Division of Research Resources is also a participant in the study. A group of outside experts is advising on the project. The AI/RHEUM artificial intelligence system in rheumatology, previously demonstrated to the Board, will be the test system to develop the methodology. One early conclusion of the advisors was that such an expert system as AI/RHEUM really is no different from the introduction of any other new technology in medicine, because the system must be shown to be safe and efficacious. This does not mean, however, that the FDA should regulate expert systems; in fact, last year the FDA Commissioner went on record that medical expert systems used as an aid in diagnosis or therapy are like textbooks and not appropriate for regulation by that agency. The evaluation will be geared toward determining three attributes: (1) sensitivity--that is, the likelihood that the program will provide a correct diagnosis; (2) specificity--the likelihood that the system will diagnose a rheumatologic disorder only when the patient does have that disease; and (3) robustness--how well the system's performance is maintained under less than ideal circumstances. There will be a two-phase field test, the first to determine differences among several kinds of physicians--specialists and nonspecialists. A larger clinical trial will then be done in the second and third years of the project--up to 1000 test cases in a variety of outpatient settings. User acceptance and cost-benefit will also be studied. NLM hopes to award a contract by the end of this fiscal year.

Following these two presentations, Dr. Edward Feigenbaum said we are now in what he called the "second computer revolution." There are now machines that do more than high-speed computation, or high-speed filing and retrieving; today machines are available that are general symbol-processing devices and are able to reason. Dr. Feigenbaum, who is preparing a book on the subject, presented a variety of applications such machines are used for in industry, and he lamented that medicine is absent from the list. He talked about the payoffs of such applications, not just in money, but in quality improvement for the products involved, whether camera lenses or pollution control devices. Such systems are also invaluable in "crisis management" in industries such as steel and nuclear power. Dr. Feigenbaum described briefly how his new book will touch on the library of the future and how it will be transformed from a warehouse of passive objects sitting on shelves into an active "knowledge server" to help the user solve problems. "What we are really talking about," he said, "is a 'power tool' for the mind that will revolutionize professional work. It is within this context that the artificial intelligence and expert systems projects upon which NLM has embarked assume great importance for the future of the health science professions."

Also commenting on the subject was Mr. Edwin Kent Gray, Chief of the Emergency Response Coordination Branch of the ATSDR, who emphasized the frequency of chemical crises in today's society. From his experience, he told how difficult it is to make the correct decisions in emergency situations because of a lack of authoritative information. He cited statistics from an actual crisis in Nanticoke, Pennsylvania, involving 250 emergency workers, and 20 air tanks, 15,000 citizens, and 60 hospitalized victims. He said that an expert system such as that now being worked on collaboratively by the National Library of Medicine and other agencies would be of immense benefit to those actually responsible for dealing with such emergencies.

Dr. Grant V. Rodkey raised the question of the legal liability of the Library for the accuracy of information contained in its factual databases. The entire area is so far largely untested, Dr. Rodkey said, and the Library should plan now so it will be able to deal intelligently with it. The subject has been discussed informally by the Regents in the past, but he believes it merits a place on a future Board agenda. The Board Chairman agreed with Dr. Rodkey and appointed an ad hoc subcommittee: Dr. Rodkey (chairman), Dr. Brownstein, Mr. Cathcart, Dr. Stead, and Mr. Fenwick.

IX. REPORT ON BOARD OF SCIENTIFIC COUNSELORS MEETING

Dr. Morris F. Collen, Chairman of the Board of Scientific Counselors, reported on the May meeting of the Counselors at which three Lister Hill Center intramural projects were reviewed. The first, the Natural Language Systems project of the Computer Science Branch, has as its goal improved access and retrieval of MEDLINE citations using an automated parsing system that will syntactically analyze free text natural language in MEDLINE citation records. The Counselors agreed that the object is desirable, the project feasible, and that it should be continued with some increase in resources. The second project, the Indexing Aid Project, is also being carried out in the Computer Science Branch. This has as its goal the development of a computerized system to help NLM's indexers provide more consistent and comprehensive indexing of the biomedical literature. A prototype system is being evaluated and the Counselors recommended that this project be supported to its completion. The third project, the Microscopic Anatomy Videodisc Project, is developing a computerized search and retrieval system for a set of high-quality microscopic images of normal tissues stored on a videodisc. A computer database program allows the user to retrieve desired histology images by entering natural language search statements. The Board was impressed by the search program and the high quality of the video images and recommended that the evaluation of the project focus on its usefulness to medical faculty. Dr. Collen concluded by saying he has enjoyed his term on the Board of Scientific Counselors and that he has turned over the Chairman's gavel to Dr. Gwilym S. Lodwick.

X. VISIT TO THE LISTER HILL CENTER

The Board of Regents adjourned at 2:30 p.m. on May 28 to reassemble in the Lister Hill's new facility, the Learning Center. There they were shown a variety of medical education hardware and software by Dr. Daniel Masys and Dr. Michael Ackerman, Chief of the Educational Technology Branch. Following this, the Regents listened to a presentation in the Lister Hill Auditorium on "Visualization in Scientific Computing," by Dr. Bruce McCormick.

XI. JOURNAL SELECTION POLICY

Mrs. Lois Ann Colaianni, NLM Associate Director for Library Operations, reported on the issue of how the Library selects journals to be indexed and announced in Index Medicus and MEDLINE. The NLM Act requires the Library not only to acquire materials, but to organize them by cataloging and indexing and to publish catalogs and indexes. All new titles received by NLM have a cataloging record created for them; indexing is the process of providing

sufficient information to enable users to identify the individual articles in these journals. NLM does not index all the journals it receives--about 13,500--but is selective in deciding which are to be included in the database and Index Medicus. Occasionally the Library hears from disappointed publishers whose journals have not been selected. Mrs. Colaianni said that about 52 percent of the 13,500 journals are indexed in at least one of the 14 major scientific indexing and abstracting services. NLM itself indexes 3,331 of these for MEDLINE. Another 10 to 20 percent may be indexed by nonscience services. This leaves about 6500 titles that we receive that are not indexed. She cited statistics from a recent NLM study of unindexed titles published in the United States that showed that about 675 of the journals do not contain "indexable" articles, and about 800 titles carry articles that potentially could be indexed. There are an additional 258 titles that are analyzed during cataloging.

Mrs. Colaianni next described the current procedures under which journals are selected. A journal selection group of outside experts was set up in the sixties to review indexing policies and to consider which titles should be indexed. Additional expert opinion was sought when judgments required expertise not represented on the group. Among the criteria used to guide the group: sponsorship of a journal by a recognized professional organization, academy, or institute; an active editorial board of knowledgeable and critical referees; regular contributions by leaders in the subject which the journal addresses; strict adherence to an established format; and a publication policy that prohibits promotional, parochial, or secular approaches. In the past decade, this group was replaced by 7 to 10 individual journal selection consultants who meet at NLM periodically. They both review new titles and reassess journals already being indexed. Mrs. Colaianni described briefly the mechanics of how the consultants review and rate the journals. The consultants assess a journal's "quality"--how well it reports original research or clinical observations. A peer-reviewed journal containing good quality original research by recognized authorities, published by a major national professional society, will receive a very high ranking. On the other hand, a journal reporting general observations with no supporting scientific data, or single case reports of common diseases by unknown authors, would not rate as high. It is difficult to frame specific criteria that, if met, would mean automatic acceptance. If there are many journals in a medical field, the criteria for inclusion would be more stringently applied than in a field with only one or two journals. Wide subject and geographic coverage is important; Index Medicus covers more than 180 subjects and contains journals published in 67 countries. To provide this breadth, there is some unevenness in quality. With the increasing importance of printed and computerized indexes, there has been increasing pressure by some journal publishers and editors to have their journals selected for indexing.

The selection process is also under some pressure from users to include what they want; the corollary is to exclude what they do not want. There seems to be little agreement, however, as to just what kinds of journals should be added--foreign, clinical, allied health, etc. This gives rise to the question, just who are our users? Unfortunately, we do not have sufficient data to answer this. Generally, they are health professionals, librarians acting for health professionals, writers, lawyers, researchers, teachers, students, government agencies, drug manufacturers, and so forth. Increasingly, our data show that the databases are being used for patient-care purposes. NLM does not

know how representative this is of the total need for information among health professionals, because there are many more who do not use the system than those who use it. The selection process must take all of these various factors into account. For example, is a good new journal on heart transplantation to be selected over an excellent journal on routine urological practice, when there are already 25 urology journals being indexed? Although the journal selection process has served the Library well for many years, it could be revised to include the consideration of bibliometric data, formal input by professional societies, and reconstituting the selection consultants into a committee similar to an NIH program advisory committee. Similarly, there are also possible changes that could be made to Index Medicus and MEDLINE, both premier bibliographic tools of long standing. Both have limitations--for example, the monthly Index Medicus has reached the maximum size for publication in a single volume, and MEDLINE has to be segmented into two- and three-year files because of software limitations in the retrieval system.

There are a number of issues currently being discussed in connection with journal selection and the announcement of bibliographic data: (1) Which of the titles of those NLM collects should be selected for indexing to meet the needs of current and potential users? Should the proportion be increased or decreased? Should the coverage of certain subjects be changed vis-à-vis other subjects? Should there be more or fewer foreign journals? Should there be more or fewer journals whose content is mainly didactic? (2) How can the Library improve the process by which the selection is made? (3) How should we modify the vehicles by which we announce the indexing, i.e., Index Medicus and MEDLINE (and the other online databases)? (4) The retrieval system could be improved to assist users, for example, by the development of gateways that would allow users to search across files within the NLM system, or even to retrieve records from other abstracting and indexing services. (5) How do we manage change? How much can we introduce to take advantage of new electronic techniques without disadvantaging those who use the traditional tools (such as Index Medicus).

Because Dr. Gunn was the scheduled discussant for Mrs. Colaianni's presentation, he relinquished the chair to Dr. Abdellah for the remainder of this part of the agenda. Dr. Gunn said he has great admiration for the bibliographic procedures and products of the Library. The report that Mrs. Colaianni has just presented about the Library's journal selection process is detailed and well thought out. The matter is a serious one for medicine--promotion and reputations depend to a great extent on what and where a scientist has published. Similarly, it is serious for the publishing industry. Editors complain of a "Catch-22": Journals are turned down for indexing because of a lack of high-quality articles while, on the other hand, authors of reputation tend not to publish in journals that are not indexed in Index Medicus. Although the limitations on the printed bibliography are severe, Dr. Gunn suggested that it might be possible to limit expansion of the number of titles to MEDLINE.

After Dr. Gunn's remarks, there was a general discussion of journal selection by the Regents. They touched on the costs involved, the composition (geographic and subject) of the consultants, the continuing review of journals after they are selected (and the reverse, that is, re-reviewing a journal after it has been rejected), the importance of didactic or instructional journals, the issue of timeliness in the indexing process, the desirable mix for foreign

and U.S. journals indexed, and the role of CD-ROM (compact disc) technology as a medium for databases. After the discussion, Dr. Gunn introduced a motion that the Board of Regents support the analysis and initiatives for future direction of the indexing procedures and policies as outlined by Mrs. Colaianni. The motion was seconded and approved unanimously.

XII. MEDLARS III

John Anderson, NLM Director of Information Systems, reported to the Regents on the status of the effort to develop a MEDLARS III system. There are four general goals for MEDLARS III: convert from partial automation to full automation; use the concept of the "master bibliographic record"--a single intellectual entity for each item in the collection; design for all categories of users; the system must be open-ended to permit continuing improvement. The new system will improve our capabilities to create, maintain, and retrieve records, distribute products, provide document delivery services, control inventory, and keep management statistics. After much preliminary work by NLM staff, a contract was let to LOGICON Corporation. That contract, on which the Regents had been routinely briefed, has now been wrapped up. The situation right now is "fluid." One aspect of the fluidity is that there has been a shift in the procurement practices of the Department that is delaying further procurement. Nevertheless, NLM has taken delivery of a number of products from LOGICON. The system they espouse has a "pleasing" architecture--it looks good overall. It seems to be undergirded by a good design. The contractor's implementation has suffered however, and that is where the problems lie.

The design has four major components: a PC-based workstation for the librarian, a data communication link between the PC and the mainframe computer, a transaction processor on the main computer--software that takes the requested activity from the workstation and translates it into computer language that the database management system can understand, and a data management system which can handle massive data files. Mr. Anderson commented briefly on the work done by LOGICON to develop each component; some of the elements were done well, others need some work to be salvaged. NLM has critiqued the product design, evaluated each of the implementations and developed solutions to some of the problems identified.

The strategy for the future is to continue with the implementation of the design, completing those things that are incomplete, correcting those that are wrong, and salvaging that which is right. The target for the first implementation is the Selection and Acquisition function module. NLM believes this can be successfully accomplished and that it will be necessary to show a successful, functioning module if NLM is to secure authorization to enter into another contract to complete the entire project. Mr. Anderson commented that since NLM began planning for MEDLARS III (in 1979), the Library has acquired new mainframe computers (IBM 3084), and microcomputers have become ubiquitous; also during that time, the Unified Medical Language System has come on the scene. These changes require the Library to reconsider the entire issue of information retrieval for the end user. Our strategy for the future will be to issue "task-order" contracts--where we can monitor progress closely task by task, each piece being reviewed before taking the next step. That gives NLM close control, of course, but also shares with the contractor the risk and responsibility for the success of the final product.

XIV. REPORT OF THE ACTING ASSOCIATE DIRECTOR FOR EXTRAMURAL PROGRAMS

Mr. Arthur J. Broering brought the Board up to date on the 1987 Extramural Programs budget and recent funding actions. He discussed the revised budget chart included in the agenda folder. A \$200,000 saving was realized in the Regional Medical Libraries (RML) line item that will allow NLM to make one to three additional grant awards this year. Although the grant review actions by the Board at this meeting will determine the final disposition of the \$200,000, tentative reprogramming of \$100,000 has been made to the Medical Informatics category, with the remaining \$100,000 reallocated to other Medical Library Assistance Act programs. Appropriations for programs under the Medical Informatics and the MLAA categories fall under two separate legislative authorities; however, NLM has been assured that the reprogramming from one to the other will be possible.

Mr. Broering continued with two items, considered by the Board at its January meeting: (1) The award to Georgetown University for the Bioethics Information System has been supported for thirteen years by NLM. In January, the Board of Regents had recommended approval of the most recent renewal, but also suggested that interim funding be provided for twelve months only. In the meantime, NLM would negotiate with the grantee to seek a mutually agreeable alternative to the grant mechanism for funding of this activity for the purpose of stabilizing the support base. The 12-months award was made during the last week in April. Other avenues of support in the future are being discussed by NLM and the grantee. (2) The second issue involves the application from Dr. Wissler which was jointly assigned to the Heart Institute and NLM, with the Heart Institute as the "primary." Both the Advisory Council of the Heart Institute and the Board of Regents concurred with the study section recommendation for approval. Subsequently, the Director of that Institute made the decision not to fund the proposal, not wanting to set a precedent of funding a non-research, publication award. NLM decided, because of the Heart Institute's decision, and in consideration of the Board of Regents' recommendation to see that project funded, that the award be made by NLM under the grant authority of "Special Scientific Projects" which is similar to the Publication Grant authority. (The application was in conflict with a number of the Board-determined criteria for the Publication Grant Program.) Mr. Broering indicated that the Board's Extramural Programs Subcommittee has discussed the issue the previous afternoon. Dr. Rodkey, Chairman of the Subcommittee, summarized the Subcommittee's recommendations by stating that the award should be NLM's final appropriation and that Dr. Wissler be advised to seek other funding for the remainder of the project. The Board concurred and so moved unanimously.

XV. REPORT OF THE NOMINATING COMMITTEE

Dr. Welsh, Chairman of the Nominating Committee, placed the name of Dr. Edward N. Brandt, Jr., in nomination. Dr. Brandt absented himself from the room, and the Board unanimously elected Dr. Brandt to serve as Chairman of the Board of Regents for a term of one year, beginning on August 4, 1987, and ending on August 3, 1988.

MEETING CLOSED FOR THE REVIEW OF GRANT APPLICATIONS, 11:15 A.M.,
MAY 29, 1987

XVI. REVIEW OF PENDING APPLICATIONS

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

The Board reviewed 67 applications, requesting \$34,292,765, and recommended for approval 45 applications in the amount of \$28,981,053 for the total years requested. Seventeen applications in the amount of \$3,712,548 were disapproved and five applications for \$1,083,473 were deferred. 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 January meeting were considered by the Board's Extramural Programs Subcommittee and noted and concurred with by the Board of Regents.

XVII. ADJOURNMENT

The meeting was adjourned at 11:45 a.m. on Friday, May 29, 1987.

* * * * *

Wednesday, May 27, 1987, 2:00 to 3:45 p.m.
(EP Subcommittee--List of Attendees under Attachment B)

Wednesday, May 27, 1987, 3:00 to 4:00 p.m.

(Subcommittee on Pricing of NLM Services--List of Attendees under Attachment C)

Thursday, May 28, 1987, 9:00 to 5:15 p.m.

Friday, May 29, 1987, 9:00 to 11:45 a.m.


* * * * *

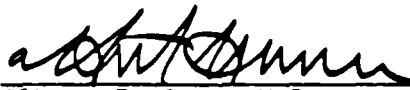
ACTIONS TAKEN BY THE BOARD OF REGENTS

1. The Board voted to reaffirm existing pricing policies and recommended approval of proposed increases in prices. Mr. Cathcart abstained.
2. The Chairman appointed an ad hoc subcommittee, consisting of Dr. Rodkey, Chairman, Mr. Brownstein, Mr. Cathcart, Dr. Stead, and Mr. Fenwick, to investigate the legal liability of the Library for the accuracy of information contained in NLM's factual databases.
3. The Board recommended to support the analysis and initiatives for future direction of the indexing procedures and policies, as outlined.
4. The Board unanimously elected Dr. Edward N. Brandt, Jr. to serve as Chairman of the Board of Regents for the coming year.
5. The Board concurred with 67 recommendations of the Extramural Programs Subcommittee. Grant applications for approval are listed in the summary actions (Attachment D).

* * * * *

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)
Executive Secretary


Albert E. Gunn, M.D. (Date)
Chairman

BOARD OF REGENTS OF THE NATIONAL LIBRARY OF MEDICINECHAIRMAN

GUNN, Albert E., M.D. (8/3/87)
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<u>FENWICK, Russell L.</u> (8/3/88) Senior Vice President (Retired) Bank of America 260 Country Club Drive Novato, CA 94947 415-382-8319	<u>STEAD, Eugene A., Jr., M.D.</u> (8/3/88) Prof. Emeritus of Medicine Duke University Duke Hospital - P.O. Box 3910 Durham, NC 27710 919-684-6587
<u>LOPEZ, John K.</u> (8/3/87) President Medical Electrobiological Diagnostic Sciences Box 2312 Stanford, CA 94305 415-948-4440	

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

EXTRAMURAL PROGRAMS SUBCOMMITTEE MEETING

May 27, 1987

2:00 to 3:45 p.m.

A T T E N D E E S

Subcommittee Members Present:

Dr. Grant V. Rodkey, Chairman
Ms. Nina W. Matheson
Dr. Ann K. Randall
Dr. Jay P. Sanford
Dr. Eugene A. Stead, Jr.

NLM Staff Present:

Mrs. Gwendolyn Artis, Grants Assistant, EP
Mr. Arthur J. Broering, Acting Associate Director, EP
Mrs. Ruth Bortz, Grants Management Specialist, EP
Dr. Jeanne L. Brand, Chief, International Programs Branch, EP
Mr. Brian Campbell, Grants Management Officer, EP
Mrs. Dawn Carlisle, Management Assistant, EP
Mr. Peter Clepper, Program Officer, EP
Mrs. Karin K. Colton, Committee Management Assistant, EP
Dr. Roger W. Dahlen, Chief, Biomedical Information Support Branch, EP
Ms. Rose Marie Holston, Program Analyst, EP
Mrs. Frances E. Johnson, Program Officer, EP
Mrs. M. Kathleen Nichols, Grants Management Sepcialist, EP
Mr. Randall Worthington, Program Officer, International Programs
Branch, EP

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

SUBCOMMITTEE ON PRICING OF NLM SERVICES

May 27, 1987

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

A T T E N D E E S

Subcommittee Members Present:

Mr. H. Robert Cathcart
Mr. Joseph H. Howard
Dr. William J. Welsh
Dr. Lois E. DeBakey, Consultant
Dr. Albert E. Gunn (Ex Officio)

NLM Staff Present:

Mr. Kent A. Smith, Deputy Director, NLM
Dr. Henry Kissman, Associate Director, SIS, NLM
Mrs. Lois Ann Colaianni, Associate Director, LO, NLM
Mr. Mark Rotariu, Chief, Office of Financial Management, NLM
Mr. Charles Kalina, Special Project Officer, OD, NLM
Mrs. Sally Burke, Management Analyst, OD, NLM
Mrs. Brickie LeRoy, Secretary to Deputy Director, NLM

The Subcommittee considered the 1986 review of NLM's pricing structure for services and resulting recommendations prior to the periodic report on pricing to the Board of Regents. NLM's current MEDLARS pricing policy, based on the recovery of access costs aggregated over all products and databases, was reaffirmed. Additionally, the following recommendations were discussed and accepted: The NLM factual databases contained in TOXNET, previously excluded from the general policy of recovering access costs, are now recommended for placement under the MEDLARS umbrella pricing policy. This in part responds to the growing use of factual databases by emergency response teams at the state and local level, and the fact that factual databases have clearly become a basic part of the NLM mission. Slight increases in MEDLARS online and offline charges are also recommended. An increase of the equivalent of \$1.50 per hour for MEDLARS online will accommodate the TOXNET files and cover increased costs that are rising. The last price increase for pages printed offline was October 1, 1982. Postage alone has increased significantly since then. An increase of 7 cents per page may stem the proliferation of requests for the labor intensive offline prints and will provide a cushion over the next several years, perhaps obviating the need for any additional increase in NLM charges. Tape prices are sufficient to recover appropriate costs; therefore changes are not recommended.

APPLICATIONS APPROVED BY COUNCIL
 (ARRANGED NUMERICALLY BY PROGRAM)
 PROG. CLASS: COUNCIL DATE: MAY 1987

INSTITUTE/DIVISION: NATIONAL LIBRARY OF MEDICINE

APPLICATION NUMBER	PROJECT TITLE	AMOUNTS RECOMMENDED
3 G07 LM03955-02S3	MEDICAL LIBRARY RESOURCE IMPROVEMENT	02S3 4,000
1 G07 LM04310-01A1	MEDICAL LIBRARY RESOURCE IMPROVEMENT GRANT	01A1 4,000
1 G07 LM04544-01A1	MEDICAL LIBRARY RESOURCE IMPROVEMENT GRANT	01A1 4,000
1 G07 LM04693-01	MEDICAL LIBRARY RESOURCE IMPROVEMENT GRANT	01 3,992
1 G07 LM04708-01	MEDICAL LIBRARY RESOURCE IMPROVEMENT GRANT	01 4,030
1 G07 LM04713-01	MEDICAL LIBRARY RESOURCE IMPROVEMENT GRANT	01 4,000

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

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

COUNCIL DATE: MAY 1987

INSTITUTE/DIVISION: NATIONAL LIBRARY OF MEDICINE

APPLICATION NUMBER	PROJECT TITLE	AMOUNTS RECOMMENDED
1 G08 LM04638-01	IAIMS PLANNING - NLM RESOURCE GRANT PROGRAM	01 99,492
1 G08 LM04663-01	UCMC IAIMS MODEL: INTEGRATING INFORMATION	01 496,252 02 421,318 03 442,769

1/Approval recommendations are note final but are the basis upon which subsequent BID determinations and negotiations are made to determine final awards.

APPLICATIONS APPROVED BY COUNCIL
(ARRANGED NUMERICALLY BY PROGRAM)

COUNCIL DATE: MAY 1987

INSTITUTE/DIVISION: NATIONAL LIBRARY OF MEDICINE

APPLICATION NUMBER	PROJECT TITLE	AMOUNTS RECOMMENDED
2 R01 LM04174-04	A CANCER RADIOTHERAPY EXPERT SYSTEM USING SIMULATION	04 120,270 05 123,961 06 128,221
2 R01 LM04562-02A1	DECISION DIFFICULTY AND THE DESIGN OF DECISION AIDS	02A1 45,564 03 71,741 04 57,640
1 R01 LM04564-01A1	A NETWORK RESOURCE FOR MEDICAL DECISION MAKING	01A1 389,641 02 507,567 03 408,402
1 R01 LM04685-01	SCIENTIFIC & SOCIAL ORIGINS OF ANESTHESIA BEFORE 1800	01 7,100
1 R01 LM04689-01	THE BODY POLITIC: WOMEN & AMERICAN HEALTH CARE, 1930-60	01 24,018 02 18,834
1 R01 LM04691-01	A HISTORY OF THE INTERNSHIP	01 13,633
1 R01 LM04696-01	EVALUATION OF ONLINE LITERATURE SEARCHING BY PHYSICIANS	01 84,728 02 40,891
1 R01 LM04697-01	AUTOMATED REFINEMENT OF MEDICAL KNOWLEDGE BASES	01 97,300 02 101,192 03 105,239

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

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

COUNCIL DATE: MAY 1987

INSTITUTE/DIVISION: NATIONAL LIBRARY OF MEDICINE

APPLICATION NUMBER	PROJECT TITLE	AMOUNTS RECOMMENDED
1 R01 LM04698-01	DUALS SECONDARY REVIEW: DK UTILITY COMPARISON OF TEXTUAL KNOWLEDGE BASE INFORMATION	01 84,255 02 71,711
1 R01 LM04699-01		
1 R01 LM04700-01	MUNICIPAL SERVICES & MORTALITY DECLINE: PHILA, 1870-1930 THE JOHNS HOPKINS UNIVERSITY	01 20,700 02 26,551
1 R01 LM04702-01		
1 R01 LM04706-01	COMMERCIALIZATION IF VITAMINS IN THE US, 1920-1980'S HISTORY OF OCCUPATIONAL SAFETY & HEALTH IN THE US	01 121,035 02 101,135
1 R01 LM04709-01		
1 R01 LM04710-01	DECISION-MAKING STUDIES OF THE PHYSICIAN AS GATEKEEPER WIVES & MOTHERS IN WORKING -CLASS LONDON 1870-1918	01 24,809 02 26,457 03 20,544
		01 25,000 02 25,000 03 10,000
		01 115,098 02 131,713 03 122,451
		01 23,800 02 25,425

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

APPLICATIONS APPROVED BY COUNCIL
(ARRANGED NUMERICALLY BY PROGRAM)

COUNCIL DATE: MAY 1987

INSTITUTE/DIVISION: NATIONAL LIBRARY OF MEDICINE

APPLICATION NUMBER	PROJECT TITLE	AMOUNTS RECOMMENDED
1 R29 LM04683-01	THE ELECTRODIAGNOSTIC ASSISTANT PROJECT	01 99,230 02 49,624 03 51,511
1 R29 LM04687-01	CONTEXT-SENSITIVE LITERATURE RETRIEVAL	01 64,609 02 65,824 03 68,994 04 70,455 05 71,910
1 R29 LM04692-01	KNOWLEDGE-BASED SYS FOR CARDIAC IMAGE INTERPRETATION	01 66,196 02 68,488 03 71,938 04 70,281 05 70,338
1 R29 LM04694-01	CLINICAL DECISION MAKING FOR EMPIRIC THERAPY	01 95,552 02 60,164 03 59,293 04 62,600 05 66,096
1 R29 LM04707-01	CONTRAST: A COMPUTER CONSULTANT FOR OPTIMAL NMR IMAGING	01 92,621 02 5,748 03 57,996 04 60,338 05 62,782
1 R29 LM04715-01	COMPUTER SIMULATION IN CLINICAL MEDICINE	01 63,555 02 66,130 03 66,209 04 70,001 05 74,021

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

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

COUNCIL DATE: MAY 1987

INSTITUTE/DIVISION: NATIONAL LIBRARY OF MEDICINE

APPLICATION NUMBER	PROJECT TITLE	AMOUNTS RECOMMENDED
1 T15 LM07049-01	MEDICAL INFORMATICS RESEARCH TRAINING	01 202,277 02 296,076 03 300,940 04 301,165 05 316,744
1 T15 LM07050-01	RESEARCH TRAINING IN MEDICAL INFORMATICS	01 220,174 02 293,567 03 329,640 04 337,644 05 331,749
1 T15 LM07052-01	TRAINING PROGRAM IN CLINICAL INFORMATICS	01 317,269 02 378,389 03 388,216 04 398,990 05 410,802
1 T15 LM07053-01	RESEARCH TRAINING IN MEDICAL INFORMATICS	01 174,648 02 354,948 03 360,916 04 367,250 05 373,951
1 T15 LM07054-01	INFORMATICS RESEARCH TRAINING IN THE HEALTH SCIENCES	01 150,560 02 238,687 03 276,870 04 315,056 05 315,143
1 T15 LM07055-01	GNU-MI: MEDICAL INFORMATICS RESEARCH TRAINING	01 83,260 02 153,232 03 197,694 04 235,140 05 281,906

Approval recommendations are not final but are the basis upon which subsequent BID determinations and negotiations are made to determine final awards.

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

COUNCIL DATE: MAY 1987

INSTITUTE/DIVISION: NATIONAL LIBRARY OF MEDICINE

APPLICATION NUMBER	PROJECT TITLE	AMOUNTS RECOMMENDED
1 T15 LM07056-01	MEDICAL INFORMATICS RESEARCH TRAINING AT YALE	01 122,744 02 186,671 03 189,947 04 193,457 05 197,221
1 T15 LM07057-01	ACADEMIC TRAINING IN MEDICAL INFORMATICS	01 140,669 02 123,351 03 184,582 04 198,851 05 184,582
1 T15 LM07058-01	MEDICAL INFORMATICS RESEARCH TRAINING PROGRAM	01 89,310 02 169,836 03 191,857 04 195,593 05 199,676
1 T15 LM07059-01	PITTSBURGH MEDICAL INFORMATION SCIENCES TRAINING PROGRAM	01 145,501 02 199,038 03 217,572 04 278,092 05 276,596
1 T15 LM07061-01	MEDICAL INFORMATICS RESEARCH TRAINING GRANT	01 78,992 02 182,880 03 215,276 04 215,276 05 215,276
1 T15 LM07064-01	MEDICAL INFORMATICS RESEARCH TRAINING PROGRAM	01 191,708 02 191,708 03 191,708 04 191,708 05 191,708

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

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

COUNCIL DATE: MAY 1987

APPLICATION NUMBER	PROJECT TITLE	AMOUNTS RECOMMENDED
1 T15 LM07065-01	GRADUATE TRAINING IN MEDICAL INFORMATION SCIENCES	01 353,487 02 400,293 03 467,203 04 473,719 05 444,233
1 T15 LM07066-01	MEDICAL INFORMATICS RESEARCH TRAINING	01 115,768 02 138,948 03 155,128 04 156,128 05 157,528
1 T15 LM07067-01	MEDICAL INFORMATICS RESEARCH TRAINING	01 511,655 02 526,129 03 527,542 04 546,139 05 548,948
1 T15 LM07068-01	RESEARCH TRAINING IN MEDICAL INFORMATICS	01 246,744 02 265,855 03 325,926 04 387,632 05 454,771

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

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

A G E N D A

84th Meeting of the

BOARD OF REGENTS

9:00 a.m., January 29-30, 1987

Board Room
Mezzanine of
National Library of Medicine

MEETING OPEN: All day on January 29 and from 9:00 a.m. to approx. 11:15 a.m. on January 30.
MEETING CLOSED: From 11:15 a.m. to adjournment on January 30 for the review of grant applications.

CALL TO ORDER AND INTRODUCTORY REMARKS	Dr. Albert E. Gunn
. REMARKS BY THE ASSISTANT SECRETARY FOR HEALTH	Dr. Robert E. Windom
I. REMARKS BY THE THE DIRECTOR, NIH	Dr. James B. Wyngaarden
. CONSIDERATION OF SEPTEMBER MINUTES	Dr. Albert E. Gunn
	<u>TAB I</u> (Agenda Book)
FUTURE MEETING DATES	Dr. Albert E. Gunn
<u>Spring Meeting:</u> May 28-29, 1987 (Th-F)--CONFIRMED	
<u>Fall Meeting:</u> Oct. 1-2, 1987 (Th-F)--CONFIRMED	
<u>Winter Meeting:</u> Jan. 28-29 <u>OR</u> Feb. 4-5, 1988 (Th-F)--PROPOSED	
<u>PLEASE NOTE</u> Potential Conflicts with Jan./Feb. 1988 Dates:	American Library Association, Midwinter Meeting, 1/9-14/88, San Antonio, TX National Institute of Allergy and Infectious Diseases, Council Meeting, 1/28-29/88, Bethesda, MD American Assoc. for the Advancement of Science, Annual Meeting, 2/11-16/88, Boston, MA

II. LISTER HILL CENTER PROGRAMS TAB VII

- A. Board of Scientific Counselors
November Meeting Tab A Dr. Morris F. Collen
 - B. CD-ROM X-Ray Imaging System Tab B Mr. Earl B. Henderson
 - C. AI/Rheum Update Tab C Dr. Lawrence C. Kingsland
 - D. Biotechnology Issues Tab D Dr. Daniel R. Masys
Dr. Edward N. Brandt, Jr.
Discussant
- Discussion Board Members

R E C E S S * * * * *

DINNER Bethesda Marriott Hotel
 Cocktails 6:30 p.m. Pooks Hill Road
 Dinner 7:30 p.m. Bethesda, Maryland

SPEAKER: Daniel J. Boorstin, Litt. D.
Librarian of Congress

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R E C O N V E N E : Friday, January 30, 9:00 a.m.

* * * * *

II. MEDLARS SERVICES TAB VIII

- STUDY OF TOXNET USES Tab A Mr. Sheldon Kotzin
Mr. Bruno M. Vasta
Ms. Nina W. Matheson,
Discussant
- Discussion Board Members

COFFEE BREAK

V. REPORT OF THE ACTING ASSOCIATE TAB IX
DIRECTOR FOR EXTRAMURAL PROGRAMS

- A. FY 1987 Budget Tab A Mr. Arthur J. Broering
EP Subcommittee,
Discussants
- B. Summary of Applications Received
for Expanded Informatics Research
Training Grant Program 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

V. REPORT OF THE NOMINATING COMMITTEE

Dr. Albert E. Gunn

 MEETING CLOSED FOR THE REVIEW OF GRANT APPLICATIONS FROM 11:15 TO ADJOURNMENT

(Gray Book)

VI. SPECIAL APPLICATIONS

- A. Publication
- B. Over \$100,000

TAB I
TAB II

Dr. Jeanne L. Brand
 Dr. Roger W. Dahlen

VII. SUMMARY STATEMENTS

- A. Research
- B. FIRST
- C. Resource
- D. IAIMS
- E. Improvement
- F. Publication

TAB III
TAB IV
TAB V
TAB VI
TAB VII
TAB VIII

Dr. Roger W. Dahlen
 " " " "
 " " " "
 " " " "
 " " " "
 Dr. Jeanne L. Brand

VIII. ADJOURNMENT

Dr. Albert E. Gunn

D E P A R T M E N T O F H E A L T H A N D H U M A N S E R V I C E S

NATIONAL INSTITUTES OF HEALTH
NATIONAL LIBRARY OF MEDICINE

BOARD OF REGENTS
MINUTES OF THE 84TH MEETING
JANUARY 29-30, 1987

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/
January 29-30, 1987

The Board of Regents of the National Library of Medicine was convened for its eighty-fourth meeting at 9:00 a.m. on Thursday, January 29, 1987, in the Board Room of the National Library of Medicine, Bethesda, Maryland. Dr. Albert E. Gunn, Chairman of the Board of Regents and Associate Dean for Admissions, The University of Texas Medical School at Houston, presided. In accordance with P.L. 92-463 and the Determination of the Director, NIH, and as announced in the Federal Register on December 22, 1986, the meeting was open to the public from 9:00 a.m. to 5:30 p.m. on January 29 and from 8:30 a.m. to 10:30 a.m. on January 30. The meeting was closed from 10:30 a.m. to adjournment at 11:00 a.m. on January 30 for the review, discussion, and evaluation of grant applications. A Board roster is enclosed under Attachment A.

Board members present were:

Dr. Edward N. Brandt, Jr.
Mr. H. Robert Cathcart
Dr. Edward A. Feigenbaum
Mr. Russell L. Fenwick
Dr. Albert E. Gunn
Mr. Joseph H. Howard (Ex Officio) (January 29)
Dr. C. Everett Koop (Ex Officio) (January 29)
Mr. John K. Lopez (January 29)
Ms. Nina W. Matheson
Dr. Ann K. Randall
Dr. Grant V. Rodkey (January 29)
Dr. Eugene A. Stead, Jr.

Alternates to ex officio members present were:

Dr. Faye Abdellah, representing Dr. C. Everett Koop.
Dr. Charles N. Brownstein, representing Dr. David T. Kingsbury.
Capt. Patrick M. Curran, representing Vice Admiral Lewis H. Seaton.
Col. Howard E. Fauver, representing Lt. Gen. Quinn H. Becker.
Ms. Karen Renninger, representing Dr. John Gronvall.
Brig. Gen. James B. Sanders, representing Lt. Gen. Murphy A. Chesney.

Unable to attend:

Dr. Jay P. Sanford
Dr. William J. Welsh

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 Medical 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
Mr. John Anderson, Director, Information Systems, OD
Ms. Duane Arenales, Chief, Technical Services Division, LO
Dr. Jeanne Brand, Chief, International Programs Branch, EP
Mr. Arthur J. Broering, Acting Associate Director for Extramural Programs
Mr. Kenneth Carney, Executive Officer, OD
Ms. Lois Ann Colaianni, Associate Director for Library Operations
Dr. George J. Cosmides, Deputy Associate Director, SIS
Mr. John Cox, Deputy Director for Development, OCCS
Dr. Roger W. Dahlen, Chief, Biomedical Information Support Branch, EP
Mr. Charles M. Goldstein, Chief, Information Technology Branch, LHNCBC
Dr. Richard K. C. Hsieh, Assistant Director for International Programs
Ms. Betsy Humphreys, Deputy Associate Director for Library Operations
Mr. Charles R. Kalina, Special Projects Officer, OD
Dr. Henry M. Kissman, Associate Director for Specialized Information Services
Mr. Sheldon Kotzin, Chief, Bibliographic Services Division, BS
Dr. Daniel R. Masys, Director, Lister Hill National Center for Biomedical
Communications
Mr. Robert B. Mehnert, Chief, Office of Inquiries and Publications Management, OD
Dr. Henry Riecken, Associate Director for Planning and Evaluation
Mr. Arthur Robinson, EEO Officer
Mr. Mark J. Rotariu, Chief, Office of Financial Management, OD
Mr. Sidney Siegel, Chief, Office of Hazardous Substances Information, SIS
Ms. Susan Slater, Senior Program Analyst, OD
Dr. Elliot R. Siegel, Special Assistant for Operations Research, OD
Mr. Bruno M. Vasta, Chief, Biomedical Files Implementation Branch, SIS
Mr. Richard T. West, Chief, Office of Program Planning and Evaluation, EP

Others present included:

Dr. Robert E. Windom, Asst. Secretary for Health, HHS
Dr. James B. Wyngaarden, Director, NIH
Dr. Morris F. Collen, Chairman, Board of Scientific Counselors, NLM
Dr. G. Octo Barnett, Harvard Medical School
Dr. Henry Lowe, Harvard Medical School

Members of the public present:

Ms. Cindy Foor, Reporter, Blue Sheet

I. OPENING REMARKS

Dr. Albert E. Gunn, Chairman, welcomed the Regents to the 84th meeting of the Board of Regents. He introduced a new appointment to the Board, Mr. H. Robert Cathcart, President of the Pennsylvania Hospital in Philadelphia. Dr. Gunn noted that this will be the last meeting of General James G. Sanders, USAF, who is being transferred to a new position in St. Louis. On behalf of the entire Board, Dr. Gunn wished him well and thanked General Sanders for his service to the Library.

II. REMARKS OF THE ASSISTANT SECRETARY FOR HEALTH

Dr. Robert E. Windom said that today's major issue facing the Public Health Service is AIDS. He described current efforts to develop a vaccine, but there is no immediate preventive or cure on the horizon. A PHS interagency task force on AIDS has been working for some time to coordinate research, education, treatment, and prevention activities. There is now also a new Federal Coordinating Committee on AIDS representing several departments of the government. The recently published Surgeon General's report on AIDS has been widely publicized and well received. A cumulation of all education materials on AIDS is being assembled by HHS and will be issued soon. Screening and testing for AIDS and the resulting ethical and legal issues are also a topic of current concern to the HHS. An estimated 8 to 16 billion dollars will be necessary by 1991 to cope with the disease, Dr. Windom said. In another area, Alzheimer's disease, there is hope that successful therapy will be developed, but much more evaluation is required. He expressed his appreciation to the Regents for their work in advising the Library. He commented on the importance of NLM as a leader in disseminating biomedical knowledge throughout the world. He recently returned from China and was impressed how the medical research apparatus relied on their information dissemination system which draws directly on NLM's services.

III. REPORT OF THE SURGEON GENERAL

Dr. C. Everett Koop emphasized Dr. Windom's remark that AIDS is taking precedence over other health concerns within the PHS. Commenting about his recent report on the subject, he said that the "92 words" dealing with sex education made most of the news. He is hopeful that HHS and the Department of Education will soon make a joint statement about education and AIDS. Dr. Koop discussed briefly the various aspects of education for AIDS prevention: Abstinence is the safest preventive and condoms should be used by those sexually active who are unsure of the sexual history of their partners. He also reported that the black community must be alerted to the problem. "Something everybody knows but that is not talked about much" is the seriousness of the AIDS problem among blacks, he said. Seventy-five percent of all heterosexual AIDS victims are black.

IV. REPORT OF THE DIRECTOR, NIH

Dr. James B. Wyngaarden congratulated the Library on the success of its sesquicentennial celebrations. The NIH is observing its centennial this

year; it was inaugurated in October with a program in NIH's Masur Auditorium. There are many celebrations planned for 1987. Each component of NIH is participating by sponsoring special events during one month of the year. Institutions around the United States and even in seven other countries are also participating. The objective is to make the NIH better known to the American people. There will be a series of four one-hour programs for broadcast by public television stations around the country later this year. One each on diseases of children, of the middle years, and of the elderly, and one program on the future. The programs are not, strictly speaking, about NIH, but NIH will feature prominently in them. Dr. Wyngaarden also briefly described several upcoming centennial events, including a visit from 56 high school science scholarship students, and three symposia to be held in conjunction with an NIH alumni reunion on October 15-18, 1987.

Dr. Wyngaarden talked about the proposal to put \$334 million of NIH's 1986 budget forward into 1987. This would reduce by 700 the number of new and competing awards in 1987 (from 6,200 to 5,500). This proposal would not take effect unless the Congress acts positively to accept it. If such action comes late in 1987, it will be difficult to accomplish. Another result would be an essentially level budget between 1987 and 1988. The average cost per grant award would be fixed at a constant value of \$164,000. Such artificial pricing of grants concerns NIH. The 1988 budget would contain \$233 million for research training (10,867 trainees); \$522 million would be requested for 560 research centers; most other mechanisms, such as research grants and contracts, are maintained at the 1987 levels with two exceptions: These are the Biomedical Research Support Grants and the Extramural Construction Program, both of which are proposed for elimination in 1988. The intramural research program would be increased by about 4.3 percent over 1987 to provide for mandatory cost increases and the increase in the intramural AIDS research budget. Dr. Wyngaarden talked briefly about the preservation hearings held recently at the Library at which Rep. Natcher spoke. He also commented on the biotechnology bill introduced by Rep. Pepper in the House and which Sen. Kennedy has been asked to introduce in the Senate. Dr. Wyngaarden told Mr. Kennedy that NIH was supportive of the bill and its proposals to improve the handling of biotechnology information. The proposal to give NLM the primary responsibility for this has internal agreement at NIH; NIGMS is willing to see a transfer to NLM of its responsibilities for supporting GenBank.

V. CONSIDERATION OF MINUTES OF PREVIOUS MEETING

The Regents approved without change the minutes of the September 17-18, 1986, meeting.

VI. DATES OF FUTURE MEETINGS

The Board will meet next on May 28-29, 1987. Because the NLM wishes to plan another Medicine-and-the-Arts Colloquium on October 2, in conjunction with the fall 1987 Board of Regents meeting, the dates for that meeting were changed to September 30 and October 1. The dates of January 28-29, 1988, were selected for the following meeting.

VII. REPORT OF THE NLM DIRECTOR

Dr. Lindberg briefly discussed the Library's budget situation for fiscal years 1986-7-8. In 1986 NLM operated at a level of \$55.3 million; the Congress allowed \$61.8 million in 1987; and the President's request for 1988 is \$64.4 million. This last figure may be modified by the Department, however. The present 1987 budget allows us to increase the extramural programs, including especially the support of research training grants. NLM will be able to double the number of trainees. The 1987 budget also allows to go full speed on such topics as the Unified Medical Language System, preservation, and Dr. Masys' beginning efforts in biotechnology information. In 1988, under the proposed level, NLM would be able to fully fund all continuing grant commitments, but there would be a serious reduction in funds available for new competing grants. The plan described by Dr. Wyngaarden to move \$334 million of NIH's 1987 funds forward into 1988 would have no effect on the Library, Dr. Lindberg said.

In the area of staffing, there is a problem with the number of full-time equivalent positions (FTEs), constantly being eroded. The 1987 staff level is 504, a reduction from about 543 when Dr. Lindberg came to NLM several years ago. Dr. Lindberg noted that there has been a reorganization within the Lister Hill Center. The Health Professions Applications Branch and the Training and Consultation Branch have been combined to form the Educational Technology Branch. Among the recent appointments are Dr. Arthur Pollitt, a visiting scientist in the Lister Hill Center; Dr. Thomas Bonner, a history-of-medicine fellow; and Ms. Nancy Wright, head of the Indexing Section. Mr. Robert Mehnert, Public Information Officer, was recently presented with an award by the HHS Secretary for his work in public affairs.

A serious problem in the personnel area has been the recent action by the Department to hold up, by inaction, the appointment of two Senior Executive Service (SES) positions at NLM. The Library has a total of 11 SES positions. The two positions affected are the Associate Director for Extramural Programs and the Assistant Director for International Programs. [On the second day of the meeting, Dr. Brandt introduced a resolution on this problem to be sent to the HHS Secretary; it was amended and passed unanimously. See Attachment B.]

Dr. Lindberg briefly mentioned a number of items:

- o MEDINFO 86, a successful meeting of 3000 in the field of medical informatics, was held in Washington, D.C., last fall. Dr. Lindberg was chairman of the organizing committee.

- o There are three government studies under way pertinent to NLM. The first, by the National Academy of Sciences, is entitled "Information Technologies and the Conduct of Research." NLM is a sponsor of the study. The second, by the Congressional Office of Technology Assessment (OTA), is "Technology, Public Policy, and the Changing Nature of Federal Information Dissemination." Congress is particularly interested in new information roles for electronic technologies and the future of the Government Printing Office and other Federal information agencies. The third study, also by OTA, is of the feasibility and desirability of mapping the human genome.

o Dr. Lindberg mentioned that the NIH Director's Advisory Committee meeting of October 1986 focused on the scientific and policy aspects of mapping the human genome. Dr. Lindberg chaired the session on the application of medical informatics to biotechnology information. The Committee agreed that the information component of biotechnology was of supreme importance and there was a commitment by Dr. Wyngaarden to put a high priority on the subject.

o Also on the subject of biotechnology, the bill to create a National Center for Biotechnology Information at NLM has been reintroduced as H.R. 393 by Rep. Claude Pepper. Hearings on the subject are scheduled for March.

o The Commission on Technology Assessment of the National Academy of Sciences has been established. A former Regent, Dr. William Hubbard, is the head of the Commission. Dr. Lindberg is a member of the Commission's Information Panel; the Panel has met at NLM to learn about the Library's relevant programs. One charge to the Commission is to establish a clearinghouse on technology assessment.

o The NIH Director's Advisory Committee to be held in June is being organized by Dr. Lindberg. The main subject to be discussed is "The Health of Research at U.S. Universities." This is a sort of followup to the Packard Commission's report, although that report did not specifically address medicine.

o The Library cooperated with the Veterans Administration and Hospital Satellite Network to present an interactive experimental program via satellite, "Introducing GRATEFUL MED." It involved demonstrating GRATEFUL MED to almost 600 health professionals and librarians at 22 VA hospitals in the western part of the U.S.

o Dr. Kingsland has prepared an interactive exhibit on artificial intelligence that has been installed in the Boston Science Museum as part of a larger exhibit on "The Age of Intelligent Machines." The exhibit will be shown in a number of major science museums around the country over the next few years. Dr. Feigenbaum, who gave the keynote address at the opening of the exhibit, said it was disappointing that it focused on trivial surface robotics; there are only a few good things--such as Dr. Kingsland's contribution.

o The Friends of the National Library of Medicine organization was of great help to the NLM in organizing a number of successful sesquicentennial events. The formal dinner and ceremony honoring the Nobel Laureates, on November 18, was especially successful and well covered by the press. Dr. Lindberg showed the Regents a large model of the medal that was presented by the Friends to the Nobel Laureates.

VIII. SESQUICENTENNIAL FLASHBACK

Mr. Robert Mehnert, NLM Public Information Officer, described the new NLM Seal devised by the Army Institute on Heraldry. Copies of the new NLM annual report and a compilation of news items that appeared about the Library in 1986 were made available to the Regents. Mr. Mehnert showed a

15-minute videotape highlighting the year's Sesquicentennial activities. Following the tape, he outlined briefly a number of the Sesquicentennial activities that took place since the last Board meeting: The Cable News Network segment about NLM (this was shown to the Regents); the Space Medicine Colloquium in November; the week-long medical film festival held at NLM in December; and a new Library exhibit installed outside the office of HHS Secretary Bowen.

Among upcoming events in the area of public affairs, Mr. Mehnert said that staff have been working closely with a senior editor of Readers Digest who is assisting Dr. Michael DeBakey prepare a study about NLM for that publication. There will be a three-part series about the Library broadcast nationally on Physicians Journal Update, a cable TV program sponsored by the Lifetime Medical TV Company in Los Angeles. There will be a major exhibit prepared jointly by NLM, the Library of Congress, and the National Agricultural Library to be displayed at the fiftieth anniversary of the American Society for Information Science in Boston this fall. Finally, Mr. Mehnert mentioned that there will be two special conferences sponsored by NLM later this year: October 2, Medicine and the Arts II, and in November, a two-day conference on the history of medical informatics.

Dr. Lois DeBakey, former Regent and NLM consultant who was a member of the Board's Program Outreach Subcommittee, was directly involved in many of the Sesquicentennial activities. Dr. DeBakey had to leave this meeting unexpectedly, but left her remarks to be read by Dr. Gunn. Dr. DeBakey congratulated the Library on its successful Sesquicentennial; from the starting point of a low profile, the Library has appeared prominently in the public media and has had several columns and television programs devoted to it by national commentators. The work is well begun, and she hoped that NLM can keep the momentum going.

IX. PAPER PRESERVATION

Mr. Charles Kalina, NLM Special Projects Officer, reviewed the problem of deteriorating library collections due to acid-based paper introduced in the mid-19th century. A recent survey found some 8.8 percent of the NLM collections endangered to the point where one more use of the material may cause its disintegration. The Board of Regents held a hearing at NLM on January 27 on "The Use of Permanent Paper for Biomedical Literature" in order to encourage preservation at its source by publishing on acid-free paper. Domestic and foreign commercial, professional societies, and university press publishers and editors, librarians and preservation professionals, biomedical researchers, and paper manufacturer and distributor representatives were among the 122 registrants. The keynote speaker was Representative Natcher who assured the audience of Congressional support for the goal of preserving the scholarly record. Mr. Kalina briefly characterized the presentations and panel discussions. He said there was general agreement that the problem is real and that there was a willingness by the participants to do something about it.

The discussion indicated the need to educate publishers and manufacturers about the problem, to explore options for total or partial acid-free paper conversion of publications, to consider guidelines for the kinds and

amount of material to be published on permanent media, and to encourage development of U.S. and international permanent paper standards, among others. As a direct result of the hearing, NLM will organize a task force, representative of all concerned parties, to plan and implement action for increasing the use of permanent paper in biomedical publications. Mr. Kalina will prepare and disseminate a report of the January meeting.

Mr. John Lopez, Ms. Nina Matheson, Ms. Karen Renninger, and Dr. Grant Rodkey attended the hearing. Dr. Gunn presided. Mr. Lopez commented that most of the producers present were concerned primarily with costs. They were also interested in considering the problem in the light of new technology.

Ms. Renninger said that many of those attending had not been aware of the problem until it was brought to their attention. Also, they questioned the concept of "permanent"--how long actually is permanent? Ms. Matheson brought up the issue of how the economic impact varies considerably depending on whether it is being viewed by a short-run journal or a mass-circulation journal. Dr. Rodkey commented that there are economic factors that are moving manufacturers away from acid-base paper, such as less environmental impact with the nonacid papermaking processes. Because of this, it may ultimately turn out to be less expensive. Mr. Lopez commented that this is an area in which the Library can provide leadership for the good of the profession. The Library now should plan specific actions in concert with the publishers and other concerned interested parties.

Following the discussion, Dr. Gunn proposed, and the Regents agreed, that the Board send a letter to Mr. Natcher, thanking him for his participation and letting him know about the Library's plan to continue to lead in this area.

X. LONG-RANGE PLAN--FINAL REPORT

Dr. Henry Riecken, Associate Director for Planning and Evaluation, briefly recounted the origin, process, and review of the Long-Range Plan. The printed reports of the five planning panels are now available; the executive summary and Regents report will be delivered by the printer within the next few weeks. He said that the Library owes a debt of gratitude to the more than 100 experts who lent their time and expertise to the Library's planning process. He noted that the Plan will require constant updating, but that will be the responsibility of others since he will be retiring at the end of this month. The Library must now see to the implementation of the Report's recommendations. The Planning Subgroup of the Board will need to work closely with NLM staff on the implementation.

The Board unanimously voted to approve the Long-Range Plan and to send it to the HHS Secretary.

XI. GATEWAY STATUS

Mr. John Anderson, Director of Information Services, briefly recapitulated the report on GATEWAYS at the last Board meeting. There are five things that a gateway such as that envisioned for the Library must do: identify

needed information, locate it, plan a retrieval strategy, execute the search, and integrate the results so that they are usable. Today's powerful microprocessor workstations, huge multiprocessor computers, and emerging natural language interfaces such as the UMLS now make the goal of such a gateway feasible. Today's report will describe to the Board the areas of opportunity that present themselves for implementing a gateway program at NLM. This mainly concerns developing a system for simultaneous access to multiple computers or databases.

Using projected visuals, Mr. John Cox, Deputy Director of the Office of Computer and Communications Systems, described the near-term project to develop a gateway to allow interlinked current access to NLM's two major systems--TOXNET and ELHILL, AMA's AMANET system (based in Colorado), and the National Cancer Institute's (NCI) Cray supercomputer in Frederick, Maryland. Mr. Cox reviewed the current computer hardware and communications available to NLM and the Lister Hill Center and, using diagrams, showed how they would be linked together with the new gateway system. The centerpiece of this project will be to develop and install software in a soon-to-be acquired DEC microvax computer. Mr. Cox briefly described a number of the "architectural" aspects of developing the system.

Following Mr. Cox's presentation, Dr. Daniel Masys, Director of the Lister Hill Center, talked about the functions of the gateway. He described the present NCI computer communications setup, including its supercomputer. The new gateway system, as it concerns NCI, will be especially useful to NIH scientists who are doing research in information-intensive areas of biotechnology.

Dr. Edward A. Feigenbaum, commenting on the gateway presentations, said that the Library was now in the early "stage one" of the long-term development of gateways. The functions outlined are "sensible, feasible, doable, and necessary." The next stage will be much more difficult. Someone now should do a very realistic risk analysis of the entire gateway project so we can anticipate the source of future problems. The chance that the hardware or communication aspects will fail is close to zero; the much greater risk is that the software aspect will go awry.

XII. UNIFIED MEDICAL LANGUAGE SYSTEM

Ms. Betsy Humphreys, Deputy Associate Director for Library Operations, began her presentation by saying that there were two major barriers to integrated access to machine-readable medical information. The first is the variety of extant hardware, software, and information systems; the previous discussion about the gateway system is pertinent to this problem. The second barrier is the lack of precise intellectual links among related computerized biomedical information files. Each has its own thesaurus or classification system. Without a mechanism for intelligent switching among the many disparate classifications, the potential for any integrated medical information system is unlikely to be realized. As discussed at previous Board meetings, NLM believes that one solution to this problem lies in the development of a Unified Medical Language System (UMLS). The UMLS would take the form of an integrated series of automated tools that can be invoked by a variety of computer applications to interpret

questions, classify new information, and provide the intelligent links necessary to retrieve the whole range of information relevant to a particular query.

We are now in the second phase of UMLS development. Four two-year contracts have been awarded to distinguished institutions to begin to develop the UMLS: Massachusetts General Hospital, MPC Corporation (representing the University of Pittsburgh and Carnegie-Mellon University), University of California at San Francisco, and Yale University. Ms. Humphreys described the range of tasks to be addressed by the contractors. Because the contracts were recently awarded, it is too early to discuss progress. There will be future reports to the Board about the UMLS development. The NLM itself has also embarked on several internal projects related to the UMLS. One of these is to identify a set of sample research questions that will be used to determine whether new tools and approaches developed for the UMLS actually do improve automated retrieval of relevant health-related information.

Following Ms. Humphreys' presentation, Dr. Octo Barnett, Director of the Laboratory of Computer Science at Massachusetts General Hospital and Professor of Medicine at Harvard, described and demonstrated the MicroMeSH system. He was assisted by Dr. Henry Lowe, developer of MicroMeSH. Dr. Barnett said that MeSH is a logical place to begin in the development of a UMLS not only because it is a rich vocabulary, but because it is flexibly structured and maintained by a national organization (NLM). The interim microcomputer system they demonstrated to the Regents is designed to let the untrained user understand and negotiate the NLM Medical Subject Headings vocabulary. The demonstration showed how a user could enter the system either by direct access to a MeSH "tree" category or by individual MeSH term. The system has the potential, Dr. Barnett said, for creating personal bibliography files, for indexing other medical "entities," for searching full-text databases, and even, eventually, for recording clinical notes and tying clinical data together with bibliographic knowledge bases.

Following the presentations and demonstration, Dr. Feigenbaum said that MicroMeSH is the very first step on the road not only to the Unified Medical Language System but to what he called "The Library of the Future." The system demonstrated by Drs. Barnett and Lowe is, he said, "brilliantly" done in a technical sense, but that it is not the essence of the problem. Knowledge is an artifact, he said, as is language. Artifacts need to be well designed if we are to be able to live with them and extend them. The medical language was not "well designed"--it simply evolved. It needs to be "redesigned" if we are to see our ambitious plans come to fruition. The project to develop a Unified Medical Language System is a tremendous intellectual effort and worthy of the considerable effort being marshalled.

XIII. MEDLARS SERVICES

Mr. Sheldon Kotzin, Chief of the Bibliographic Services Division, reported the results of a recent study of usage of the MEDLARS databases. He presented a series of graphs showing how the MEDLARS databases are used at NLM, the foreign MEDLARS centers, and the domestic commercial vendors. During the last several years, Mr. Kotzin added, there have been numerous

improvements to the system so that users are receiving more service for their money. After briefly recounting the growth of the biomedical literature, he described the development of MEDLARS and the family of online databases. Among the statistics Mr. Kotzin presented:

- o There were more than three million searches of the NLM databases by domestic and foreign users in 1986.
- o Usage of NLM databases as measured by connect hours is greater by the combined commercial vendors and foreign tape users than online access directly to NLM.
- o Total connect-hour usage by all groups for all MEDLARS databases rose to 543,000 connect hours in 1986.
- o At the end of Fiscal Year 1986, more than 8,200 individuals and institutions had codes to access MEDLARS databases at NLM. That number is growing by 250-300 new codes each month.
- o 3,000 copies of GRATEFUL MED were sold in the last nine months, many to individual health professionals; 1,655 physicians now hold MEDLARS codes.
- o Data indicate that 43 percent of all MEDLARS searches were conducted by or for physicians; 75 percent of those searches were related to patient care.
- o Portions of MEDLINE are leased by 25 subset licensees; it can be much less expensive to mount parts of MEDLINE for local searching on an institution's computer.
- o There are experimental agreements with several organizations to test the efficacy of using CD-ROM technology to store MEDLINE references.

Mr. Kotzin described the foreign MEDLARS centers--both those online to NLM and those that take NLM MEDLARS tapes to mount on their own computers. Two new foreign centers were established in the last year--Egypt and China. Other MEDLARS access is via commercial vendors--BRS, Lockheed DIALOG, Mead Data Central, and Beth Israel Hospital (Paperchase System).

In summary, Mr. Kotzin said that the system is dynamic and in the last several years has been expanded in number of hours of system availability, number of domestic vendors and foreign centers, and types of formats, to meet a growing variety of ways users wish to access data.

Ms. Nina Matheson commented on the experience of the Welch Medical Library (Johns Hopkins University) with a subset of MEDLINE. She said that a survey revealed that the researchers at Hopkins put the need for improved bibliographic retrieval high on their list of needed services. However, there were several barriers to increased use of online retrieval services, including the lack of modems with personal computers and a concern for the costs.

Mr. Bruno M. Vasta, Chief of the Biomedical Files Implementation Branch (Specialized Information Services), described a recent survey of the users of the new TOXNET system and its major online file, the Hazardous Substances Data Bank (HSDB). It operates separately from, but parallel with, the ELHILL-based databases (MEDLINE, etc.). Mr. Vasta described the HSDB and the Chemical Carcinogenesis Research Information System (CCRIS) on TOXNET. The survey was conducted during January 1987 and sought to discover the level of training of TOXNET users, whether searches were being conducted by end users or for others, and an indication of the requester's profession and the purpose of the search. The survey results have not yet been completely analyzed, but in general they show a surprising number without specific TOXNET training (37 percent), 75 percent of the users were doing searches for others, and that the majority of searchers were research scientists and the subject of the searches were primarily in the area of occupational safety and health. Mr. Vasta mentioned several anecdotes of dramatic uses of the toxicology databases in chemical emergencies.

XIV. LISTER HILL CENTER PROGRAMS

Dr. Morris F. Collen, Chairman of NLM's Board of Scientific Counselors, reported on the November meeting of that body. The Board reviewed in depth two of the Lister Hill Center's projects--the Diagnostic X-Ray Imaging System (XRIS program) and the Electronic Document Storage and Retrieval (EDSR) system. Dr. Collen briefly described each research project. The Board of Scientific Counselors concluded that the XRIS program fits very well with the goals of NLM and the Lister Hill Center. Progress has been excellent and further improvements may be expected without substantial increase in cost. The Counselors also concluded that the EDSR program, a long-term continuing effort, is being pursued in a technically excellent fashion. In addition to the XRIS and EDSR, the Board of Scientific Counselors reviewed in less depth three other projects: videodisc-based project for teaching ethical issues in experimental animal welfare, AI/Rheum (artificial intelligence in rheumatology), and the TIME (Technological Innovations in Medical Education) project. All three projects are well-founded and should be continued, the Counselors concluded. Dr. Collen said that the Counselors were pleased to see that the Long-Range Plan places emphasis on the Lister Hill Center's intramural research program; they hope that emphasis will find expression in continued strong support by the NLM.

Following Dr. Collen's presentation, Mr. Earl Henderson, LHC Deputy Director, described in some detail the history and development of the Lister Hill Center's X-Ray Imaging System. The system is a prototype to evaluate image quality by applying digital storing and processing techniques (as opposed to the analog techniques of video disc). Improved images could be used in computer-based education programs. Mr. Henderson displayed a number of the high-quality x-ray images on a special monitor.

Dr. Larry Kingsland described the current state of the artificial intelligence program, AI/Rheum. Using a PC and projection equipment, he demonstrated the system's various capabilities. He showed the capability of the system to "tell me more," "show me more," and to directly dial to MEDLARS to search for pertinent bibliographic information. He described

the "criteria tables" that, when presented with data about a patient, generate a diagnosis. The program correctly diagnosed the disease in over 90 percent of the test cases it was presented with. The criteria for a formal evaluation of AI/Rheum will be determined in late March and the evaluation then carried out.

Dr. Daniel Masys, Director of the Lister Hill Center, made a brief presentation on a number of biotechnology-related issues that have occurred since the last Regents' meeting. Among these are the Director's Advisory Committee discussions on the subject; a study of the issues involved in mapping the human genome by the office of Technology Assessment; a study by the National Academy of Sciences; and workshops held by the Department of Energy on the technologies needed to automate the laboratory analysis of macromolecules. Two NIH program announcements will soon be published to seek grant applications in certain areas of human genetics research. He talked briefly about the plans of the Howard Hughes Medical Institute in the area of human genetics.

Dr. Masys also discussed where the field as a whole is going, mentioning what the "landscape" will be like a decade from now. NLM's involvement will be in two parallel activities: an information resource program--much like the present MEDLARS activity--and information support for scientific discovery via an NLM research program. Fertile areas for research in the decade ahead will be the questions of molecular sequence/structure prediction and determination of biologic similarity using "expert" system techniques. As a first step to such long-range goals, NLM must set intermediate range goals which are themselves still not finally set. In order to facilitate data entry into the major biology data banks, NLM will provide ongoing surveillance and specialized indexing of the research literature, and provide subsets of the literature in electronic form. The development of standards and vocabularies is another area for the Library. Among NLM's new near-term projects, Dr. Masys mentioned: special identifiers to new MEDLINE entries in certain areas of the biotechnology literature; mapping GenBank terms to MeSH; building a "database of databases" of what now exists; adapting LHC's Information Retrieval Experiment (IRX) to accommodate several existing molecular biology databases; and sponsoring a series of lectures on biotechnology at the NLM by NIH scientists.

XV. REPORT OF THE ACTING ASSOCIATE DIRECTOR FOR EXTRAMURAL PROGRAMS

Mr. Arthur J. Broering reviewed the FY 1987 Extramural Programs budget and noted that the appropriations included an increase of approximately \$2.0 million over FY 1986. The distribution of the increase will be to various program areas: IAIMS \$350,000, Resource grants \$250,000, RML contracts \$200,000, Medical Informatics Research \$300,000. One million dollars will be allocated to the Medical Informatics Training Grant Program, which allowed NLM to solicit new applications under the NLM training grant authority. An announcement was made in November 1986 in the NIH GUIDE FOR GRANTS AND CONTRACTS that resulted in 22 letters of intent to apply. The proposals will be reviewed in March by a special ad hoc group and by the Board of Regents in May.

Board Operating Procedures

As required annually, Mr. Broering presented for review the Board Operating Procedures--"Guidelines for Adjustments by Staff in Time or Amount of Grant Award." The procedures were amended by raising individual budget adjustments that must be reported to the Board by staff from \$1,000 to \$3,000. The amendment was recommended by the Extramural Programs Subcommittee and ratified by the full Board.

XVI. APPOINTMENT OF NOMINATING COMMITTEE

Dr. Gunn appointed a nominating committee for the selection of next year's Board Chairman, consisting of Mr. Welsh, Chair, Dr. Abdellah and Mr. Howard.

MEETING CLOSED FOR THE REVIEW OF GRANT APPLICATIONS, 10:30 A.M.,
JANUARY 30, 1987.

XVII. REVIEW OF PENDING APPLICATIONS

Before proceeding with the consideration of pending applications, Dr. Jeanne L. Brand, Chief, International Programs Branch, EP, informed Board members of confidentiality and conflict-of-interest procedures and reminded them to sign, at the conclusion of the grant application review, the statement noting that they had not participated in the discussion of any application which presented a conflict of interest. The Board reviewed 56 applications of which 38 were recommended for approval and 15 for disapproval. Grant applications recommended for approval by the Board are listed in the summary actions (Attachment C). Interim actions taken by the Extramural Programs staff since the September Board meeting were considered by the Board's Extramural Programs Subcommittee and noted and concurred with by the Board of Regents.

XVIII. ADJOURNMENT

The meeting was adjourned at 11:00 a.m. on Friday, January 30, 1987.

* * * * *

Wednesday, January 28, 1987, 1:30 to 3:45 p.m.
(EP Subcommittee--List of Attendees under Attachment D)
Wednesday, January 28, 1987, 2:00 to 3:00 p.m.
(Program Outreach Subcommittee--List of Attendees under Attachment E)
Thursday, January 29, 1987, 9:00 a.m. to 5:30 p.m.
Friday, January 30, 1987, 9:00 a.m. to 11:00 a.m.

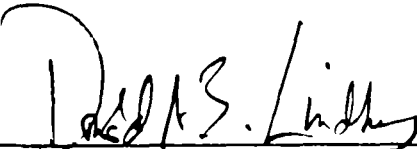
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ACTIONS TAKEN BY THE BOARD OF REGENTS

1. The Board transmitted a resolution to The Secretary asking for action on NLM's two unfilled SES positions (Attachment B).
2. The Board recommended that a letter be sent to Congressman Natcher thanking him for his participation in the Hearing on the Use of Permanent Paper.
3. The Board voted unanimously to approve the Long-Range Plan and to forward the first copy to The Secretary.
4. The Board concurred with 38 recommendations of the Extramural Programs Subcommittee. Grant applications for approval are listed in the summary actions (Attachment C).

* * * * *

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

 4/6/87
Donald A. B. Lindberg, M.D. (Date)
Executive Secretary

 4/3/87
Albert E. Gunn, M.D. (Date)
Chairman

BOARD OF REGENTS OF THE NATIONAL LIBRARY OF MEDICINECHAIRMAN

GUNN, Albert E., M.D. (8/3/87)
 Associate Dean for Admissions,
 The University of Texas Medical School
 at Houston, and
 Medical Director, Rehabilitation Center
 University of Texas/M.D. Anderson
 Hospital and Tumor Institute
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 713-792-4711 p.m.

<u>BRANDT</u> , Edward N., Jr., M.D., Ph.D. (8/3/89) Chancellor University of Maryland at Baltimore 520 West Lombard St. Baltimore, MD 21201 301-528-7002	<u>MATHESON</u> , Nina W. (8/3/90) Director William H. Welch Medical Library Johns Hopkins University School of Medicine 1900 East Monument Street Baltimore, MD 21205 301-955-3411
<u>CATHCART</u> , H. Robert (8/3/90) President Pennsylvania Hospital Eighth and Spruce Streets Philadelphia, PA 19107 215-829-3312	<u>RANDALL</u> , Ann K. D.L.S. (8/3/89) Professor and Chief Librarian The City College of CUNY 5333 North Academic Center 138th Street and Convent Avenue New York, NY 10031 212-690-4271
<u>FEIGENBAUM</u> , Edward A., Ph.D. (8/3/90) Professor of Computer Science Computer Science Department Stanford University Stanford, CA 94305 415-723-4878	<u>RODKEY</u> , Grant V., M.D. (8/3/88) Assoc. Clinical Professor of Surgery Harvard Medical School 25 Shattuck Street Boston, MA 02115 617-742-4180 Mailing Address: 15 Parkman Street, Suite 134 Boston, MA 02114
<u>FENWICK</u> , Russell L. (8/3/88) Senior Vice President (Retired) Bank of America 260 Country Club Drive Novato, CA 94947 415-382-8319	<u>STEAD</u> , Eugene A., Jr., M.D. (8/3/88) Prof. Emeritus of Medicine Duke University Duke Hospital - P.O. Box 3910 Durham, NC 27710 919-684-6587
<u>LOPEZ</u> , John K. (8/3/87) President Medical Electrobiological Diagnostic Sciences Box 2312 Stanford, CA 94305 415-948-4440	

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Alternate

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 Chief, Graduate Medical Education Branch
 Education and Training Division
 U.S. Army Medical Department (SGPE-EDG)
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Board of Regents Roster (Continued)

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SEATON, Lewis H., Vice Adm., MC, USN
 Surgeon General
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 Department of the Navy
 Washington, D.C. 20350-2000 202-697-0587

CURRAN, Patrick M., Capt., MC, USN
 Director, Medical Education and
 Training Division (OP-939)
 Department of the Navy
 Washington, D.C. 20350-2000 202-653-1752

EXECUTIVE SECRETARY

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



National Institutes of Health
National Library of Medicine
Bethesda MD 20209

January 30, 1987

TO: The Secretary

THROUGH: US _____
COS _____
ES _____
ASH _____
Director, NIH _____

FROM: Chairman, Board of Regents of the National Library of Medicine

SUBJECT: NLM Board of Regents Resolution

I have the honor to convey to you, as Chairman, a resolution passed by the Board of Regents of the National Library of Medicine at our January 29-30, 1987 meeting. 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.

This resolution concerns the appointment of senior level executives to key NLM positions. Also attached is an explanation of the facts of the situation upon which the Board based its resolution.

The Board regards this as a matter of great urgency and has instructed me to promptly transmit their resolution to you and to relay to them your reaction upon receipt. I would be pleased to meet with you or to discuss the resolution with you by phone.

On behalf of the Board, I wish you continued success as Secretary of Health and Human Services. Please be assured that the Board stands ready to render any support it can in carrying forward the important progress of the Department.



Albert E. Gunn, M.D.

Attachments

Resolution
Adopted by the
Board of Regents of the National Library of Medicine
January 30, 1987

WHEREAS the National Library of Medicine, the world's largest biomedical research library, has been challenged with new major initiatives supported by significant Congressional increases in appropriations; and

WHEREAS the National Library of Medicine requires the leadership of individuals at the forefront of information science and technology and other disciplines to ensure these major initiatives and other challenges of the future are met; and

WHEREAS the National Library of Medicine has requested the appointment of two Senior Executive Service (SES) positions and action has not been forthcoming; therefore,

BE IT RESOLVED that the Board of Regents, deeply concerned with these and the potential for future delays that may occur in filling leadership positions at the National Library of Medicine, takes this means to bring this problem to the attention of the Secretary of Health and Human Services and requests him personally to review and expedite action on the requests for the two appointments for the SES positions of: Associate Director for Extramural Programs, and Assistant Director for International Programs.

**SENIOR EXECUTIVE SERVICE PERSONNEL
NATIONAL LIBRARY OF MEDICINE**

For Fiscal Year 1987, the appropriation for the National Library of Medicine rose some \$6.5 million over the FY-1986 level. Fiscal Year 1987 was also the time for the development of a new and expanded agenda for the NLM as recommended in the Library's recently completed innovative and comprehensive long-range plan. This visionary plan takes note of the accelerated amounts of medical literature, of special challenges presented by the scientific revolution in molecular biology, and of remarkable advances in electronic systems technology for storing and communicating information. All of this presents NLM with the major challenge to expand its role in improving the nation's health by enhancing biomedical communications. To do so requires outstanding leadership at all organizational levels of NLM.

Given the above, it is disturbing to find that senior leadership positions cannot be filled. Two existing Senior Executive Service (SES) positions, the Assistant Director for International Programs, and the Associate Director for Extramural Programs, have not received Departmental approval for appointment. Personnel actions were submitted in January and July 1986, respectively. Upon investigation, the problem appears to be a question of the Department's allocation of SES positions to NIH/NLM, not one of candidate credentials.

Historically, eleven Senior Executive Service positions have been allocated to the NLM by NIH. Seven are filled currently by SES personnel. Two other SES level positions are filled by a Commissioned Officer and a Special Expert. It is appointments to the two remaining SES positions that are the topic of this resolution. Informally, information reached us that the lack of approval was based on the contention that NLM did not need 11 SES positions filled by librarians. This view of the needs of the NLM varies from our perception. For example, only the Associate Director for Library Operations is an expert in library science. The others represent diverse disciplines including medicine, electronics engineering and communications science--disciplines pursued by experts who are extremely difficult to attract and retain in the Federal government. These positions require special variegated and often rare expertise.

The NIH, faced with a reduction in its overall number of SES positions, conducted a review of its BID allocations. The necessity of NLM's SES positions was again reaffirmed. In addition, a comparison of existing SES positions in NIH revealed that NLM not only compared favorably with the overall NIH ratio, but stood well below other Institutes with comparable workforces and responsibilities.

It is essential to dispel what seems to be a misconception about NLM's mission and to emphasize the diverse disciplines required by NLM. The inability to make these two important SES appointments is a serious concern. Congress has charged the National Library of Medicine with expanding programs and increased grant activity. This is not the time to reduce the number of SES positions in the NLM which, in effect, reduces the expert leadership available to us.

APPLICATIONS APPROVED BY COUNCIL
(ARRANGED NUMERICALLY BY PROGRAM)

COUNCIL DATE: JAN./FEB. 1987

INSTITUTE/DIVISION: NATIONAL LIBRARY OF MEDICINE

APPLICATION NUMBER	PROJECT TITLE	AMOUNTS RECOMMENDED
3 G07 LM04195-02S1	MEDICAL LIBRARY RESOURCE IMPROVEMENT GRANT	02S1 9,850
1 G07 LM04634-01	MEDICAL LIBRARY RESOURCE IMPROVEMENT GRANT	01 4,300
1 G07 LM04639-01	MEDICAL LIBRARY RESOURCE IMPROVEMENT GRANT	01 3,967
1 G07 LM04645-01	MEDICAL LIBRARY RESOURCE IMPROVEMENT GRANT	01 4,000
1 G07 LM04647-01	MEDICAL LIBRARY RESOURCE IMPROVEMENT GRANT	01 4,328
1 G07 LM04650-01	MEDICAL LIBRARY RESOURCE IMPROVEMENT	01 4,000
1 G07 LM04653-01	MEDICAL LIBRARY RESOURCE IMPROVEMENT GRANT	01 4,785
1 G07 LM04661-01	MEDICAL LIBRARY RESOURCE IMPROVEMENT GRANT	01 4,000

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

APPLICATIONS APPROVED BY COUNCIL
(ARRANGED NUMERICALLY BY PROGRAM)

COUNCIL DATE: JAN./FEB. 1987

INSTITUTE/DIVISION: NATIONAL LIBRARY OF MEDICINE

APPLICATION NUMBER	PROJECT TITLE	AMOUNTS RECOMMENDED
1 G07 LM04676-01	MEDICAL LIBRARY RESOURCE IMPROVEMENT GRANT	01 3,686

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

APPLICATIONS APPROVED BY COUNCIL
 (ARRANGED NUMERICALLY BY PROGRAM)
 PROG. CLASS: COUNCIL DATE: JAN./FEB. 1987
 INSTITUTE/DIVISION: NATIONAL LIBRARY OF MEDICINE

APPLICATION NUMBER	PROJECT TITLE	AMOUNTS RECOMMENDED
2 R01 LM03651-06A2	FORMAL ANALYSIS OF A PATIENT DATA INDEX BY COMPUTER	06A2 126,826 07 129,608 08 137,886
2 R01 LM04334-04	DERIVING KNOWLEDGE FROM CLINICAL DATABASES	04 99,878 05 107,321 06 115,900
1 R01 LM04580-01A1	DEEP AND SHALLOW MODELS IN THE MEDICAL KNOWLEDGE BASE	01A1 91,528 02 95,194 03 99,044
1 R01 LM04619-01	CHINESE HERBS: PHARMACOLOGICAL AND THERAPEUTICAL USES	01 15,840 02 16,288
* 1 R01 LM04635-01	A LASER DISK MEDICAL ARCHIVE	01 247,450 02 219,168 03 232,319
1 R01 LM04640-01	THE TRANSFORMATION OF A MEDICAL STUDENT INTO A PHYSICIAN	01 23,000
1 R01 LM04643-01	AN ANNOTATED VIRCHOW BIBLIOGRAPHY	01 4,000 02 4,000 03 4,000
1 R01 LM04648-01	PUBLICATION OF MEYER'S "DE PRAESTIGIIS DAEMONUM" - 1583	01 10,200

* AMENDED APPLICATION RECEIVED

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

APPLICATIONS APPROVED BY COUNCIL
 (ARRANGED NUMERICALLY BY PROGRAM)
 INSTITUTE/DIVISION: NATIONAL LIBRARY OF MEDICINE
 COUNCIL DATE: JAN./FEB. 1987

APPLICATION NUMBER	PROJECT TITLE	AMOUNTS RECOMMENDED
1 R01 LM04649-01	NEW DISEASES IN THE SIXTEENTH CENTURY	01 4,800 02 33,193
1 R01 LM04651-01	SILENT TRAVELERS: GERMS, GENES, AND NATIVISM, 1880-1940	01 21,062
1 R01 LM04655-01	ADOLESCENT FERTILITY: THE EVOLUTION OF SOCIAL POLICY	01 15,031
1 R01 LM04656-01	PHYSICAL THERAPIES IN GYNECOLOGY FROM ARETAEUS TO FREUD	01 2,075
1 R01 LM04657-01	EXPERT SYSTEMS FOR DIAGNOSTIC IMAGING	01 117,150 02 119,825 03 127,103 04 134,844
1 R01 LM04664-01	PSYCHIATRY IN BOSTON, 1900-1925	01 15,877
1 R01 LM04665-01	FELDSHERS AND RURAL HEALTH CARE IN RUSSIA, 1864-1936	01 21,198
1 R01 LM04673-01	A COMPARATIVE HISTORY OF PSYCHOANALYSIS	01 39,162

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

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

COUNCIL DATE: JAN./FEB. 1987

INSTITUTE/DIVISION: NATIONAL LIBRARY OF MEDICINE

APPLICATION NUMBER	PROJECT TITLE	AMOUNTS RECOMMENDED
1 R01 LM04677-01	SEMANTIC & PRAGMATIC RETRIEVAL OF INFORMATION	01 28,118 02 36,155
1 R01 LM04680-01	IMPACT ANALYSIS OF RESEARCH FUNDING: A BIBLIOMETRIC APPR	01 17,478 02 19,998

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

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

COUNCIL DATE: JAN./FEB. 1987

INSTITUTE/DIVISION: NATIONAL LIBRARY OF MEDICINE

APPLICATION NUMBER	PROJECT TITLE	AMOUNTS RECOMMENDED
1 R29 LM046641-01	DEVELOPING A STANDARDIZED MEDICAL DIAGNOSTIC TERMINOLOGY	01 49,200 02 44,414 03 47,079 04 49,903
1 R29 LM046658-01	UTILITY OF COMPUTERIZED SYSTEM FOR DRUG INFORMATION	01 56,159 02 68,983 03 52,419
1 R29 LM046659-01	REPRESENTATION OF PHYSIOLOGIC KNOWLEDGE USING AI TOOLS	01 45,030 02 47,255
1 R29 LM046667-01	EPIDEMIOLOGIC SYSTEMS IN MEDICAL DECISION MAKING	01 58,973 02 63,749 03 69,468 04 75,100 05 81,163
1 R29 LM046670-01	COMMUNICATION BARRIERS IN BASIC BIOMEDICAL RESEARCH	01 44,859 02 36,424 03 78,298 04 82,919

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

AFFILIATION APPROVED BY COUNCIL
 (ARRANGED NUMERICALLY BY PROGRAM)
 PROG. CLASS: COUNCIL DATE: JAN./FEB. 1987
 INSTITUTE/DIVISION: NATIONAL LIBRARY OF MEDICINE

APPLICATION NUMBER	PROJECT TITLE	AMOUNTS RECOMMENDED
2 U50 LM04178-04	EXPANDING THE INFORMATION SYSTEM FOR BIOETHICS	04 264,886 05 328,630 06 297,960 07 304,553 08 316,239

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

APPLICATIONS APPROVED BY COUNCIL - DUAL REVIEW
(ARRANGED NUMERICALLY)

COUNCIL DATE: JAN./FEB. 1987

PROG. CLASS:

INSTITUTE/DIVISION: NATIONAL LIBRARY OF MEDICINE

APPLICATION NUMBER	PROJECT TITLE	AMOUNTS RECOMMENDED
1 R01 GM37963-01	DUALS SECONDARY REVIEW: LM	01 97,602
		02 104,530
	COMPUTER-ASSISTED STRUCTURE ELUCIDATION	03 112,012

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

APPLICATIONS APPROVED BY COUNCIL - DUAL REVIEW
 (ARRANGED NUMERICALLY)
 INSTITUTE/DIVISION: NATIONAL LIBRARY OF MEDICINE
 COUNCIL DATE: JAN./FEB. 1987

APPLICATION NUMBER	PROJECT TITLE	AMOUNTS RECOMMENDED
1 R29 GM38082-01 DOCUMENT FILTERING SYSTEM	DUALS SECONDARY REVIEW: LM	01 76,068
		02 57,014
		03 62,818
		04 77,458
		05 70,303
1 R29 HL38157-01 DECISION ANALYSIS IN VENOUS THROMBOEMBOLISM	DUALS SECONDARY REVIEW: LM	01 70,811
		02 52,701
		03 48,518
1 R29 HL38333-01 MULTIMODALITY CARDIAC IMAGE UNDERSTANDING	DUALS SECONDARY REVIEW: LM	01 85,645
		02 91,036
		03 88,111
		04 84,983

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

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

EXTRAMURAL PROGRAMS SUBCOMMITTEE MEETING

January 28, 1987

1:30 to 3:45 p.m.

A T T E N D E E S

Subcommittee Members Present:

Dr. Grant V. Rodkey, Chairman
Ms. Nina W. Matheson
Dr. Ann K. Randall

Subcommittee Members Absent:

Dr. Jay P. Sanford
Dr. Eugene A. Stead, Jr.

NLM Staff Present:

Mr. Arthur J. Broering, Acting Associate Director, EP
Mrs. Ruth Bortz, Grants Management Specialist, EP
Dr. Jeanne L. Brand, Chief, International Programs Branch, EP
Mr. Brian Campbell, Grants Management Officer, EP
Mrs. Dawn Carlisle, Management Assistant, EP
Mr. Peter Clepper, Program Officer, EP
Mrs. Karin K. Colton, Committee Management Assistant, EP
Dr. Roger W. Dahlen, Chief, Biomedical Information Support Branch, EP
Ms. Beth Danner, Grants Clerk, EP
Ms. Rose Marie Holston, Program Analyst, EP
Mrs. Frances E. Johnson, Program Officer, EP
Mrs. M. Kathleen Nichols, Grants Management Specialist, EP
Mr. Randall Worthington, Program Officer, International Programs Branch, EP

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

PROGRAM OUTREACH SUBCOMMITTEE MEETING

January 28, 1987

2:00 to 3:00 p.m.

A T T E N D E E S

Subcommittee Members Present:

Mr. H. Robert Cathcart
Dr. Lois E. DeBakey (Consultant)
Ms. Karen Renninger

Subcommittee Members Absent:

Dr. Faye G. Abdellah
Mr. John K. Lopez

NLM Staff Present:

Mr. Kent A. Smith, Deputy Director
Mr. Robert Mehnert, Chief, Office of Inquiries and Publications Management

Mr. Mehnert opened the meeting by summarizing sesquicentennial activities since the last Board meeting, and he showed a video tape of the events that had taken place. He distributed packets containing all public media articles about the Library that appeared during 1986.

The Subcommittee discussed upcoming special events in the public affairs area, including two special conferences planned in 1987.