DEPARTMENT OF HEALTH AND HUMAN SERVICES
NATIONAL INSTITUTES OF HEALTH
NATIONAL LIBRARY OF MEDICINE

MINUTES OF THE BOARD OF REGENTS
May 5-6, 2009

The 151st meeting of the Board of Regents was convened on May 5-6, 2009, at 9:00 a.m. in the Board Room, Building 38, National Library of Medicine (NLM), National Institutes of Health (NIH), in Bethesda, Maryland. The meeting was open to the public from 9:00 a.m. to 4:15 p.m., followed by a closed session for consideration of grant applications until 4:45 p.m. On May 6, the meeting was reopened to the public from 9:00 a.m. until adjournment at 12:00 p.m.

MEMBERS PRESENT [Appendix A]**:**
Dr. Cynthia Morton [Chair], Brigham and Women's Hospital
Dr Jordan Cohen, George Washington University
Dr. John Connolly, University of California, Irvine
Dr. Carol Friedman, Columbia University
Dr. O. Wayne Isom, New York Presbyterian-Weill Cornell Medical Center
Mr. Bruce James, Nevada New-Tech, Inc.
Dr. Louis Rossiter, The College of William and Mary
Ms. Eileen Stanley
Ms. Virginia Tanji, University of Hawaii at Manoa

EX OFFICIO AND ALTERNATE MEMBERS PRESENT:
Dr. Michael Corriere, U.S. Department of the Navy
Ms. Eleanor Frierson, U.S. Department of Agriculture
Ms. Gail Graham, Veterans Health Administration
RADM Carol Romano, Office of the Surgeon General, Public Health Service
Dr. Haym Hirsh, National Science Foundation
Ms. Kathryn Mendenhall, Library of Congress
Col. John Powers, U.S. Department of the Army
Dr. Charles Rice, Uniformed Services University of the Health Sciences
MGEN Kim Siniscalchi, U.S. Air Force

CONSULTANTS TO THE BOR PRESENT:
Dr. Tenley Albright, Massachusetts Institute of Technology
Dr. Marion Ball, Johns Hopkins School of Nursing/IBM Research
Dr. Holly Buchanan, University of New Mexico
Dr. Thomas Detre, University of Pittsburgh
Dr. H. Kenneth Walker, Emory University School of Medicine

SPEAKERS AND INVITED GUESTS PRESENT:
Dr. Charles Caldwell, University of Missouri
Dr. Raynard Kington, Acting Director, NIH

MEMBERS OF THE PUBLIC PRESENT:
Mary Lindberg, Public
Mr. Jon Retzlaff, Association of Independent Research Institutes
Dr. Archil Undilashvili, Emory University
Mr. Thomas West, Krasnow Institute

FEDERAL EMPLOYEES PRESENT:
Dr. Donald A.B. Lindberg, Director, NLM
Ms. Betsy Humphreys, Deputy Director, NLM
Dr. Milton Corn, Deputy Director for Research and Education, NLM
Dr. Michael Ackerman, High Performance Computing & Communications, NLM
Ms. Joyce Backus, Division of Library Operations, NLM
Ms. Kathy Cravedi, Office of Communications & Public Liaison, NLM
Ms. Celeste Dade-Vinson, Office of the Director, NLM
Mr. Todd Danielson, Executive Office, NLM
Ms. Darlene Dodson, Office of the Director, NLM
Ms. Kathel Dunn, Division of Library Operations, NLM
Ms. Gale Dutcher, Division of Specialized Information Services, NLM
Ms. Martha Fishel, Division of Library Operations, NLM
Dr. Valerie Florance, Division of Extramural Programs, NLM
Ms. Loren Frant, Division of Library Operations, NLM
Dr. Kin Wah Fung, Lister Hill Center, NLM
Dr. Zoe Huang, Division of Extramural Programs, NLM
Mr. Nicholas Ide, Lister Hill Center, NLM
Ms. Christine Ireland, Division of Extramural Programs, NLM
Ms. Lori Klein, Division of Library Operations, NLM
Ms. Paula Kitendaugh, Division of Library Operations, NLM
Mr. Sheldon Kotzin, Division of Library Operations, NLM
Ms. Lisa Lang, Division of Library Operations, NLM
Ms. Kelli Langley, Office of the Director, NLM
Dr. David Lipman, National Center for Biotechnology Information, NLM
Dr. Simon Liu, Office of Computer and Communications Systems, NLM
Dr. Robert Logan, Office of Communications & Public Liaison, NLM
Mr. Rodney Long, Lister Hill Center, NLM
Ms. Becky Lyon, Division of Library Operations, NLM
Dr. Clement McDonald, Lister Hill Center, NLM
Ms. Melanie Modlin, Office of Communications & Public Liaison, NLM
Mr. David Nash, Office of the Director, NLM
Dr. Stuart Nelson, Division of Library Operations, NLM
Dr. James Ostell, National Center for Biotechnology Information, NLM
Dr. Steven Phillips, Division of Specialized Information Services, NLM
Ms. Shana Potash, Office of Communications & Public Liaison, NLM
Dr. Barbara Rapp, Office of Health Information Program Development, NLM
Mr. Jerry Sheehan, Office of the Director, NLM
Mr. Mark Siegal, Division of Extramural Programs, NLM
Dr. Elliot Siegel, Office of Health Information Program Development, NLM
Dr. Fred Wood, Office of Health Information Program Development, NLM
Dr. Jane Ye, Division of Extramural Programs, NLM
Dr. Deborah Zarin, Lister Hill Center, NLM

I. OPENING REMARKS

Dr. Cynthia Morton, Chair, welcomed the Regents, alternates and guests to the 151st meeting of the Board. She noted that the first report would be presented by Rear Admiral Carol Romano, from the Office of the Surgeon General.

II. REPORT FROM THE OFFICE OF THE SURGEON GENERAL

Rear Admiral Romano said that Dr. Steven Galson, the United States Acting Surgeon General, was unable to attend and that she would present his remarks. She began by noting that former Kansas governor Kathleen Sebelius, had been confirmed Secretary of DHHS. RADM Romano said she had had the opportunity to meet the Secretary during her initial H1N1 influenza update briefing. Also, Dr. Howard Koh of Harvard University has been nominated for the position of Assistant Secretary for Health and is awaiting Senate approval. To date, there has been no announcement of a nominee for Surgeon General.

With respect to H1N1, RADM Galson has been participating regularly in senior-level updates on that novel strain of the influenza virus. He has served as an Administration spokesperson on the outbreak, giving a State Department-coordinated address to the foreign press, discussing the government's response and what the public can do to reduce their exposure risk on the daytime TV show, "The Doctors," doing a national satellite tour with regional and local TV affiliates, and recording public service announcements about how to prevent the spread of the virus.

RADM Galson is leading an interagency committee to develop a proposal for allocation of the $650 million in American Recovery and Reinvestment Act (ARRA) stimulus monies dedicated to Prevention and Wellness initiatives. He is continuing his tour to promote "Healthy Youth for a Healthy Future," the childhood overweight and obesity prevention initiative of the Office of the Surgeon General (OSG). He has visited 37 states and held over 80 events. He continues another tour, on the prevention of underage drinking, and has visited 12 states to spread that important message. For the past year, RADM Galson has been producing a Surgeon General column in the *Public Health Reports*, on topics including mental health, prevention of pre-term birth and breastfeeding. He continues to promote the "Family Health History" (FHH) tool that will accompany the electronic health record, in an attempt to engage physicians in collecting comprehensive family health histories. Finally, a new "Call to Action on Healthy Homes" is scheduled to launch in June. OSG is collaborating on this campaign with the Centers for Disease Control and Prevention (CDC) and the Department of Housing and Urban Development (HUD).

III. REPORT FROM THE ACTING NIH DIRECTOR

Dr. Raynard Kington reported on the impact of the American Recovery and Reinvestment Act (ARRA) on NIH. NIH was pleased to receive $10.4 billion in support of biomedical research but first had to make the case that those funds would have an immediate economic impact and prove a worthy long-term investment in the nation. Happily, NIH met both criteria. Of the $10.4 billion total, $8.2 billion was allocated for extramural scientific research. Of that, $7.4 billion went directly to the Institutes, including NLM, allocated in proportion to the core funding of each Institute. About $800 million went to the Office of the NIH Director, to create a pool of funds to balance investments that cross Institutes. Another $1 billion was for extramural facility repairs and improvements. About $300 million was for shared extramural instrumentation, and $500 million was set aside for intramural facility repairs and

improvements. NIH also received $400 million for comparative effectiveness research. The amount of reporting for receipt of these funds will be extraordinary, but it will create useful information, too, documenting the depth and breadth of NIH research.

NIH's goal is to stimulate and accelerate biomedical research using a range of mechanisms, including funding some previously reviewed meritorious applications that did not receive awards due to lack of funds, the Acting NIH Director recounted. NIH will also use administrative supplements to accelerate ongoing research. The focus will be on NIH-wide mechanisms to make it easy for investigators to find out what the funding opportunities are, Dr. Kington said, but there will also be a few IC-specific programs. In terms of NIH-wide programs, some funds will go for Challenge Grants, "Grand Opportunity" or "GO" grants (supporting high-impact, well-defined and large-scale research), the recruitment of new faculty, the creation of summer jobs for students, and AREA (R15) grants.

The Challenge Grant Request for Applications (RFA) was the largest in NIH's history. It was 200+ pages, with a focus on 15 broad themes. A minimum total of $200 million will be allocated to Challenge Grants, but it could end up closer to $500 million. High-priority topics include bioethics and translational science.

NIH has also created opportunities for Institutes and Centers (ICs) to fund "Signature Initiatives" — scientific inquiry in areas considered especially promising, such as nanotechnology, genome-wide association studies and community-based research. NIH has received over 50,000 requests from students interested in the expanded summer internship program. In addition, NIH has the potential to help create new faculty by supporting additional years for newly trained scientists. With respect to IC-specific initiatives, the most significant one is $60 million for strategic autism research to address the heterogeneity in autism spectrum disorders.

Of the $800 million coming out of NIH/OD, $350 million is not yet committed to specific programs. NIH is still in the early stages of making decisions on spending the $400 million for comparative effectiveness research, Dr. Kington said. There is a trans-agency coordinating committee that will help coordinate research and decision making across agencies. For details and updates, he encouraged the Board to visit NIH's Recovery Act Web site: http://www.nih.gov/recovery.

NIH recently issued guidelines for human stem cell research, an area offering great promise for addressing diseases that have a dramatic impact on mortality and morbidity. The President issued an executive order March 9, 2009, stating that the NIH Director may support responsible and scientifically worthy stem cell research. The guidelines have been drafted and are on the NIH Web site for comment. They would allow funding for research using only human embryonic stem cells that were derived from embryos created by in vitro fertilization for reproductive purposes and no longer needed for that purpose.

Dr. Kington concluded his remarks by paying tribute to Dr. Donald Lindberg for 25 years of superb public service as Director of NLM. Dr. Lindberg enjoyed a long and distinguished career before coming to NLM, he said, but many consider his NLM service to be its pinnacle. Dr. Kington acknowledged Dr. Lindberg's numerous contributions and thanked him for his service to NLM, NIH and the nation.

Revisiting ARRA, Dr. Cohen asked how the two-year funding window will play out. Dr. Kington said that NIH is trying to avoid the situation followed by the doubling. He said that, of course, NIH needs to make scientific advances and that, if these dollars work the way they should; there will be lots of new

ideas and new applications. NIH had already started to see a drop in applications and this infusion of funds will help somewhat. But NIH is trying not to make out-year commitments. Dr. Connolly asked about summer jobs for students — how much do they pay and is it was too late to apply? Dr. Kington noted that payment was determined by each Institute and it is not too late to apply. Dr. Rossiter asked whether construction funds were available for the new NLM building. Dr. Kington replied, unfortunately, no. That structure is on the list of NIH facility priorities, to be sure, but not high on the list.

IV. CONSIDERATION OF FEBRUARY 2009 MINUTES AND FUTURE MEETINGS

The Regents approved without change the minutes from the February 10-11, 2009 meeting. The fall meeting is scheduled for September 15-16, 2009, the Winter Board meeting was changed to February 2-3, 2010, and a Spring Board meeting was approved for May 11-12, 2010.

V. REPORT FROM THE NLM DIRECTOR

Dr. Lindberg reported that on March 11, 2009, the President signed Public Law 111-8, making omnibus appropriations for the fiscal year ending Sept. 30, 2009. NLM received $338,971,000 for FY 2009 — an increase of $8 million, or 2.5% over FY2008. NLM's portion of the American Recovery and Reinvestment Act (ARRA) is almost $84 million.

He mentioned new NLM appointments and pointed out that NCBI Director Dr. David Lipman would make introductions later. Dr. Philip Teigen retired as Deputy Chief of the History of Medicine Division at the end of 2008 after 28 years of service, and Dr. Milton Corn has been named the new Associate Director for Research and Education.

The Health Information Technology for Economic and Clinical Health Act (HITECH) passed as part of the ARRA legislation on February 17. HITECH provides statutory authority for the Office of the National Coordinator of Health Information Technology and two federal advisory committees on policy and standards. The Omnibus Appropriations Act of 2009, signed into law on March 11, contains a provision making permanent the mandatory NIH public access policy. Dr. Detre chaired a Board committee tasked with determining whether the voluntary system of reporting was successful. Cong. John Conyers has introduced legislation that would effectively nullify the NIH Public Access Policy. No action has taken place on the bill. There is a Biological Resources for Cancer Research bill, introduced by Senator Edward Kennedy, with an interesting provision that would require that clinical trial data relating to cancer care and treatment be provided to the National Cancer Institute. The Federal Advisory Committee Act Amendments of 2009 would strengthen requirements related to conflicts of interest but, it is a House-only bill at this point. The Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) Programs Reauthorization bill was introduced by Sen. Russ Feingold in January; it would extend SBIR and STTR programs through FY2022 and 2023 respectively. It would also increase the minimum allocation of federal agency funding from 2.5 to 10 percent of agency extramural research budgets in 2012 and thereafter for SBIR, and from 0.3 to 1 percent for STTR in 2012 and thereafter. The usefulness of this program varies considerably from Institute to Institute.

Tab D details how ARRA impacts the NIH and NLM. NLM will have no difficulty spending the new money it has received. Dr. Kington spoke about "Signature" projects; for NLM, the primary one is the restoration of training grants — our highest priority.

Tab E describes a successful venture between NLM and the Robert Wood Johnson Foundation (RWJF), to provide training in public health informatics (PHI) to public health leaders. Four universities participated — Columbia, Johns Hopkins, the University of Utah and the University of Washington. During the four-year partnerships, each program: awarded pre- and post-doctoral fellowships to new trainees; developed curriculum content for PHI; arranged supervised practicum experiences for PHI trainees; and supervised research experiences for PHI trainees.

A conference on Personal Electronic Health Records (PEHRs) will be held May 20-21, 2009 at NIH's Natcher Conference Center. Open to the public, it is sponsored by the Friends of the NLM (FNLM) and organized to provide a comprehensive overview of critical issues and current standards of practice for this important emerging technology.

A new program developed by Dr. Robert Logan in the NLM Office of Communications and Public Liaison (OCPL) will bring six experienced health care journalists to the NIH campus for training September 14-17, 2009. The goal for this first class of Association of Health Care Journalists/NLM Journalism Fellows is to gain a better understanding of NLM and its resources, and to explore the workings of NIH.

Dr. Lindberg next enthusiastically endorsed *NIH Medline*Plus magazine. In February 2009, NLM introduced an improved online version of the magazine, allowing the public to download and print copies of individual articles. FNLM is working to increase the distribution, which is currently around 400,000, including the Spanish/English-language version of the magazine. NLM is partnering with the National Alliance for Hispanic Health to produce and distribute the bilingual version. The goal is to produce 4 million copies. Ms. Humphreys mentioned that the Board has asked for a report on the distribution of the magazine and she committed to providing it to them.

NLM is conducting research for an exhibition, "Native Concepts of Health and Illness," slated to open in 2010. The exhibition will feature Native healers and health providers speaking in their own voices, in a series of videotaped interviews conducted by NLM staff. Dr. Lindberg recently led a delegation to Hawaii for a series of interviews and cultural site visits, and he showed a video with excerpts from some of the interviews he conducted. The Library also has a great deal of information gathered in Alaska from previous trips.

Finally, Dr. Lindberg mentioned a proclamation signed by Mike Fahey, Mayor of the City of Omaha, proclaiming November 7, 2008 "Opening Doors" Day, in honor of an exhibition by the same name, celebrating the contributions of African American Academic Surgeons to medicine and medical education. "Opening Doors" was developed and produced by NLM and the Reginald F. Lewis Museum of Maryland African American History and Culture. Among others, it celebrates the career of the late Claude H. Organ, the first African American to chair a department of surgery at a predominantly white medical school, Omaha's Creighton University. Dr. Connolly commented on his association with – and admiration for – Dr. Organ.

VI. FACILITATING USE OF RXNORM AND OTHER TERMINOLOGY STANDARDS

NLM started work on a standard personal health record (PHR) about a year ago, Lister Hill Center staff scientist Dr. Kin Wah Fung said. A great challenge is how best to capture patients' medication

information. A controlled vocabulary is needed and the obvious choice is RxNorm.

RxNorm is the designated US national standard for unambiguous and uniform names and codes for clinical drugs. It poses challenges for data entry, however. RxNorm names can be long and complex for drugs with multiple active ingredients, and there can be many similar clinical drug names due to variations in a medication's dose form and strength. ("Amoxicillin," for example, is part of 49 different RxNorm standard names.) RxTerms was created to improve data entry efficiency; it has been available free of charge since November 2008. There are currently 140 registered users. The problem of the large number of drugs with very similar names is solved in RxTerms by segmenting the information; users pick the drug ingredient, and then the form and strength. Also, RxTerms excludes drugs not currently marketed in the US. Commonly used synonyms and abbreviations are added, to facilitate input, and unwieldy clinical drug names are suppressed or replaced with more user-friendly names.

Dr. Fung then described a recent evaluation of RxTerms. A test of the 200 most commonly prescribed drugs in the US showed that the coverage of RxTerms was excellent — over 99 percent for both branded and generic drug names. Studies also showed significant efficiency gain in data entry compared to the use of a full listing of unaltered RxNorm names.

Next, Dr. Fung discussed problem list vocabularies. The problem list is a powerful way to organize and communicate clinical data and reasoning. It has been recommended as an essential feature of electronic patient record systems. The problem list is often the first part of the clinical narrative in an electronic health record that is codified with some controlled vocabulary. Most institutions create their own problem list vocabularies; they may be derived initially from standard terminologies, such as SNOMED CT, but, as new terms are added to satisfy local needs, they generally diverge from the standard and from one another. Until solved, this lack of uniformity in problem list vocabularies will remain a hindrance to the effective exchange and aggregation of patient data.

Dr. Fung studied the problem list vocabularies, with associated frequency of use data, from six large health care institutions (including Kaiser Permanente and the Mayo Clinic) to measure their overlap with each other and with standard terminologies. The average overlap between local vocabularies was only about 40 percent. However, the terms that are common among institutions are also the terms more frequently used.

To reduce variability and encourage sharing of problem list data, Dr. Fung and colleagues have created a UMLS subset, CORE (Clinical Observations Recording and Encoding). Its benefits are high coverage of heavily used terms and a relatively small number of concepts and links to standard terminologies. The identification of this core set, its clear identification as a subset of the UMLS, and the promotion of its use will help reduce variability among problem list data and enhance data interoperability. In addition, the CORE subset can be used to help identify the SNOMED CT concepts that are most frequently used — this is called the S-CORE. (Most institutions use only a fraction of the 300,000 or so concepts in SNOMED CT in their problem lists.) A future project, Dr. Fung continued, will be to study that portion of the CORE *not* covered by SNOMED CT and to add these to SNOMED CT as appropriate.

Dr. Friedman said that the Board's Working Group on Health Data Standards had viewed both of these projects favorably. She concurred with Dr. Fung that most problem lists feature lots of unique terms, which are highly specific but rarely used. Dr. Fung noted that sometimes the terms are too detailed and

explicit, such as "Type 2 diabetes mellitus with end-stage renal failure requiring dialysis." There must be a balance between specificity and standardization.

Dr. Cohen asked whether large vendors of clinical information systems were using RxTerms yet. Dr. Fung replied that he thought some of them had access to it, and he hoped it would be of help to them, but he had no concrete information.

Ms. Graham said that the VA and DOD were working on a consolidated health informatics effort, and had adopted Kaiser Permanente's SNOMED subset for that. They found that they needed a process of rapid turnaround for the inclusion of new terms, so that if a provider couldn't locate a term and wanted it added, that could be accomplished, system-wide, in 24 hours. Dr. Stuart Nelson, NLM's head of MeSH, asked whether most of the institutions studied constrained providers to use a coded set of controlled vocabulary for their data entries. Dr. Fung said that they were allowed free-text entry for terms not included. Ms. Graham noted that the VA reviews all free-text entries to determine whether the person inputting data couldn't find the correct term or whether it constituted an omission and that term should be added. Dr. Walker, quoting problem-oriented medical records expert Dr. Larry Reed, said that all data on a patient's chart should be geared to that person's individual case. Ms. Stanley said that the value of the core set of terms was to aid institutions starting new EHR systems. They can take something that exists and has been tested, and customize it to their own circumstances, saving time and eliminating stress.

VII. REPORT OF THE BOARD WORKING GROUP ON HEALTH DATA STANDARDS

Dr. Carol Friedman presented the final report, on behalf of Regents Graham and Harris, who also served on the group, its chair William Stead of Vanderbilt University, who also formerly chaired the Board of Regents, and members Stanley Huff of Intermountain Health Care, Martin Laventure of the Minnesota Department of Health and Joyce Mitchell of the University of Utah. She began with a quick review of information presented by Dr. Stead in a preliminary report at the February Board meeting.

The Working Group was charged with reviewing NLM's current health data standards activities and identifying opportunities to advance the development and deployment of robust standards. It was asked to respond to the following questions: (1) Are NLM's current standards activities useful? Yes; (2) Are they worth the resources devoted to them? Yes; and (3) Are they adequately funded? No.

The Group was also asked to consider: (1) Which opportunities to advance standards development and deployment play to NLM's strengths and capabilities?; and (2) What resources would NLM need to pursue these opportunities?

The final report of the Working Group, submitted to the Board in April 2009 identified four major priorities: (1) Reorient the NLM standards agenda to focus on interoperable health information to address key deficiencies in current electronic health records; (2) Implement an active feedback loop and enhanced support for UMLS and standards users, activities deemed especially important now, during a time of increased health IT implementation; (3) Promote clinical and translational research use of standards adopted for routine health care; and (4) Integrate genetic and clinical standards that are needed for personalized health care.

The report suggested a set of immediate steps toward meeting these priorities: (1) Establish an NLM Office for Health Information Inoperability; (2) Work with federal partners and manufacturers of drugs, devices and test kits, to achieve standardized identifiers in labels and packaging, and all data outputs of devices and test kits; (3) Work with standards developers, federal partners and users, to define and test how information models, clinical data elements and value sets can work together to achieve health improvements in the near term; (4) Provide additional tools and services to help vendors and users incorporate standards where they will have a positive impact; and (5) Initiate "UMLS Phase 2" R&D effort to revisit original UMLS goal (helping computer systems "understand" biomedical meaning) in the current EHR context.

The resource requirements suggested to the Board to implement these recommendations are:

- $10 million per year about FY2008 budget, divided thus:
  - ✓ $3.6 million for research, development and demonstrations
  - ✓ $6.4 million for coordination, outreach to vendors and users, tools and services to help implementers, and rapid enhancement to terminology standards in response to feedback

For FY2009 and FY2010, ARRA funding (NLM and HITECH) could supply all or part of this requested funding amount.

The Board discussed the ideas presented. Lister Hill Center Director Dr. McDonald asked whether the intent was for equipment vendors to generate new codes. No, Ms. Humphreys replied, they would be including standard codes in their output but not generating new ones. Dr. Lindberg asked whether existing codes are being used by vendors and answered his own question by saying, "no," regrettably. The Library, he suggested, should fire up the UMLS again and devote sufficient funds to following up on who's using it and, if they're not, why not. That was the problem with RxNorm — it is so large and complicated that it proved unwieldy for data entry. That's why RxTerms and other refinements are important. The bottom line of this proposal is, UMLS was very successful, so let's fire it up again and fund enough research to find out whether it's adequate and, if not, what needs to be done to fix it.

Dr. Rossiter asked whether the Centers for Medicare & Medicaid Services (CMS) would play a role in promoting standardization of data. Ms. Humphreys replied that that office will provide incentive funding to look at the "meaningful use" of electronic health records, but that what is constituted by "meaningful use" is not clear. Certainly, it will include the ability to exchange health information and have it understood by both sides, and that will require standardization of data.

Dr. Cohen suggested that, in light of Dr. Lindberg's comments, it might be reasonable to suggest a *minimum* of $10 million for this effort, because the costs of the various activities are unknown.

Mr. James asked from where the $10 million would come. Ms. Humphreys explained that the $3.6 million for research could come from NLM's $84 million in stimulus funding. The $6.4 million for outreach, tool building, etc. could come out of the health IT funding available from the Office of the National Coordinator. NLM is in a good position because the preliminary report of the Board's Working Group came out before the stimulus package was approved. However, NLM can't mount new research contracts, as proposed here, without an approval of the concept by the Board. That's what's requested today, Ms. Humphreys continued — a concept review.

Dr. Lindberg observed that HHS has been extremely supportive of NLM's efforts on standards. When

NLM and others proposed taking the proprietary SNOMED and making it available to all, Sec. Thompson added $2 million to that enterprise himself. But, simply having terminology standards is not enough, Dr. Lindberg continued. Comparing standards to the Internet, he said that there is constant change and considerable monitoring is required. Unfortunately, there is no appropriation from Congress for the maintenance of these standards. Ms. Humphreys added that NLM assumed this responsibility at a time when NIH funds were doubling. Now, after six years of flat funding, we're still obligated to do it. NLM has fulfilled its commitment, and supported SNOMED, LOINC and RxNorm, but the piece that's been sacrificed is to engage actively with the user community, and develop tools to make it easier for them to implement standards.

Mr. James asked whether NLM was the only place in the government coordinating these efforts to create meaningful, usable vocabulary standards for medical records. Ms. Humphreys said that's true. Ms. Graham added that the American Medical Informatics Association (AMIA) has also recommended a strong, unified federal effort to create usable standards. Dr. Friedman asked what the R&D investment was, when UMLS debuted. Ms. Humphreys replied that, factoring in inflation, it was probably close to the $3.6 million proposed for this second UMLS wave. Dr. Cohen asked how David Blumenthal, the President's National Coordinator, would be involved in this effort. Ms. Humphreys said she'd recently been in a meeting with him at HHS and that the Office of the National Coordinator would undoubtedly be involved in efforts on standards implementation.

Acting on the Working Group's recommendations, the Board: (1) Unanimously accepted and endorsed its report and suggested it be transmitted to the Secretary of HHS; (2) Unanimously approved in concept a UMLS Phase 2 R&D Initiative to revise the goal of effective retrial, integration and analysis of information from disparate sources to aid clinical decision making, in light of current UMLS resources, health data standards and electronic health records. It would also create multiple multidisciplinary teams, at NLM and several external sites, involving junior and senior investigators and a combination of joint tasks and site-specific research activities; and (3) Unanimously approved in concept a group of smaller demonstration projects, the number and overall cost to be determined, to promote implementations, testing and feedback on use and impact of UMLS, terminology standards, subsets and other tools designed to facilitate adoption and use.

VIII. PRESENTATION OF FRANK B. ROGERS AWARD AND NLM DIRECTORS' AWARD

Dr. Lindberg presented Dr. Cynthia Morton with a remembrance for her superb service as Chair of the Board.

He then presented the NLM Director's Award to Dr. Valerie Florance of the Office of Extramural Programs, stating that it was "in recognition of sustained excellence in the administration of NLM's informatics research training programs and outstanding leadership and development of a creative plan of action in response to the American Recovery and Reinvestment Act of 2009."

Next, he presented the Frank B. Rogers Award to Stacey Arnesen of the Division of Specialized Information Services, noting that it was given "in recognition of innovative and exceptional contributions to NLM's disaster information resources and activities."

IX. CLINICALTRIALS.GOV PUBLIC MEETING AND REPORT FROM THE WORKING GROUP ON CLINICAL TRIALS

Dr. Rebecca Williams, assistant director, ClinicalTrials.gov, updated the Board on ClinicalTrials.gov, the clinical trial registry and basic results database. To date, NLM has met all the deadlines outlined in the Food and Drug Administration Amendment Act of 2007, which requires mandatory registration and results reporting for certain clinical trials of drugs, biologics, and devices. Dr. Williams said ClinicalTrials.gov receives between 300 and 350 new registrations each week, and approximately one-third of those are believed to fall within the scope of the law. The law requires that trials of FDA-approved or cleared medical products submit results within 12 months of the primary completion date of the trial. There is a mechanism allowing for delayed submission of results with certification and extensions for "good cause." NLM's Board of Regents' Working Group on Clinical Trials is helping develop criteria for what would and would not be considered a good cause for extension. More than 760 results records have been submitted to the results data entry system since it was launched in September 2008. Currently, about 40 new results records a week come in and the ClinicalTrials.gov team anticipates that number to grow to 150 per week. Williams noted that there is a learning curve for entering data into the system, but data providers are getting up to speed very quickly. The ClinicalTrials.gov team is exploring using academic medical centers to help review the results records.

Williams then updated the Board on the public meeting required by law; it was held April 20, 2009 at the NIH Clinical Center. Williams said people representing industry, clinical, and consumer organizations attended the meeting, and most of the comments focused on two key issues — results reporting for trials of unapproved products and narrative summaries in technical and non-technical language. Williams said people seemed to agree that the scope of results reporting should be expanded but differed on how that should be done. Speakers also had differing opinions as to whether narrative summaries would be useful. Williams also noted that no significant concerns were raised about the current requirements or quality standards. The docket is still open and comments from the public can be made until June 22, 2009.

In discussion following the presentation, Dr. Rossiter noted there did not appear to be many submissions from NIH. Ms. Humphreys responded that clearer instructions have been going out to grantees and the tide is now turning. Dr. Cohen asked about the public meeting and reasons people gave for wanting the database expanded to include results for unapproved products. Williams said there were several viewpoints including ethical, scientific and business concerns.

X. TRENDS IN INTERNET USAGE OF HEALTH INFORMATION

Dr. Fred Wood, computer scientist and science program leader, OHIPD, and Paula Kitendaugh, head of the Reference and Web Services section, PSD, reported on trends in online consumer health information.

Using information from internal and external sources, Wood described the online consumer health information landscape and what it could mean for NLM. About 140-150 million US adults go online for health information and approximately 80 percent of the US adult population has used the Internet for health information. While we are starting to reach a saturation point with the US adult population, there is still an opportunity to reach people because only about 15-20 percent of that group are heavy users, meaning once a month or more. In terms of consumers reached and their satisfaction level, doctors and other health care providers receive the highest level of satisfaction as a source of health information, but

the Internet has moved up in terms of both reach and satisfaction. People are going deeper in their search for health information, such as using health-related electronic newsletters, or searching for more specific health information. Also, changes in media and technology are creating more ways people can send and receive health information (e.g., growth in iPods, MP3s, broadband interconnectivity, mobile computing, and social networking). Globally, NLM and NIH have a lot of traction with Web users outside the United States, which Wood said is not typically the case for other US-based Web sites in the health information arena. Of leading consumer health Web sites in the US and around the world, MedlinePlus.gov is not in the top tier, but is in a competitive position in the second tier in the range of MSN and Yahoo, for example. MedlinePlus consistently ranks first among US Government information Web sites participating in the American Customer Satisfaction Index online survey.

Ms. Kitendaugh noted the number of people using MedlinePlus.gov has grown over the past six years, but there's been a drop in the number of page views since 2007. Part of the drop may be attributed to the change in metrics used to record page views, and the implementation of a better search engine, but she said 80-90 percent of the drop likely has to do with what's happening in the competitive online health information space. She described several types of competitors. For example, there are megasites like MSN, Yahoo, and AOL that offer email as well as sports, health and other information so users never have to leave the site. MedlinePlus, on the other hand, links out to other organizations producing health information — and one competitor, MayoClinic.com, gets six percent of its traffic referred by MedlinePlus. Wikipedia is another strong competitor. Kitendaugh showed a Wikipedia page containing primarily content she said was taken from MedlinePlus. Ad networks are another competitor. Ad networks sell advertising space over a group of Web sites that are in their network. It's an arena in which NLM can't compete. Pharmaceuticals are another competitor because of the Web sites they are creating.

Kitendaugh outlined steps MedlinePlus is taking to drive traffic to the site. The team is working to make sure search engines find MedlinePlus and that MedlinePlus appears in the first page of results. The MedlinePlus e-newsletter is being made more inviting. A mobile version of MedlinePlus is in the works. NLM will be moving into social media as well.

Following the presentation, Mr. James questioned the use of the term "competitors" when referring to other sites and suggested using focus groups to help figure out why people are choosing other Web sites over MedlinePlus. From the audience, Lister Hill Center Director Dr. Clement McDonald suggested that NLM put a line on our materials suggesting that users give NLM credit. There also was discussion about advertising — that NLM can't advertise and sites that do are ranking higher than MedlinePlus. Ms. Stanley suggested finding other spaces, such as Facebook, where NLM could have a presence.

XI. WHAT IS EPIGENETICS?

Dr. Charles Caldwell, director of the Ellis Fischel Cancer Center at the University of Missouri and principal investigator and director of the NLM Graduate Training Program for Research and Biomedical Informatics, gave a presentation on epigenetics and human health. Epigenetics was first described in the 1940s. There are interactions of genes and their environment that bring about changes in the functions of the genes and therefore how our cells and bodies function and how we live. Many of these changes that are occurring are not changes in the sequence of the DNA itself, but by chemical modifications to the DNA that cause changes in its function. It's a dynamic process that affects all of us in a variety of ways that we don't fully yet understand. While our genome does not change much during our lifetime, our

epigenome does change dramatically. And this may be something that predicts what diseases we will develop at different points in our lives. The good news is there are potentially pharmaceutical manipulations we can do to reverse some the changes considered to be bad.

Dr. Caldwell described epigenetic changes that occur in DNA that can even be passed down through generations. He described a study in related mice that had epigenetic changes — some mice had different color hair, some were fat, some were prone to diabetes. He also discussed diet. Elements such as folic acid and vitamin B12 are compounds involved in producing new DNA methylation. So if you have an alteration in the diet, it could affect the epigenome. He noted epigenetic changes occur over time. Dr. Caldwell described a study of identical and non-identical twins. Early in life, the identical twins had a similar epigenome. The non-identical twins had differences in their epigenome. Over time, the identical twins' epigenomes began to diverge, which suggests environment as a factor.

Dr. Caldwell discussed DNA methylation that occurs in cancer. He said it's important to note that DNA methylation and histone modifications are pharmacologically reversible. So, if abnormal epigenetic changes can be reversed, we might be able to treat underlying diseases. There's a disease model that's been proposed that your epigenome early in life may set you up for what diseases you develop later in life. He said there are epigenetic studies going on for numerous diseases.

Dr. Caldwell wrapped up by saying he thinks epigenetics will be the most important thing that's happened in medicine in many years. Dr. Cohen thanked Dr. Caldwell for a terrific summary of complex and promising research. He noted the computational implications of epigenomic studies will give the Library work to do for a long time.

XII. EXTRAMURAL PROGRAMS REPORT

Dr. Valerie Florance, Acting Associate Director for Extramural Programs, gave an update on the extramural programs funding situation, noting that previous speakers already covered a lot of material related to the American Recovery and Reinvestment Act (ARRA). NLM made estimates of how many ARRA grants they might award in a two-year period. Florance said NLM might award 12-15 challenge grants and 38 previously reviewed (but not funded) grants. In the category of supplements to existing research grants, they estimate 30 awards to speed up or extend planned work and 24 awards to expand the scope of funded work during the two-year ARRA period. NLM also plans to award several research and development contracts using Recovery Act funds.

NLM's 13 priority topics for the NIH challenge grants included advanced information retrieval, clinical support, health disparities and more. Dr. Florance also addressed communication and reporting, noting that NLM has a Recovery Act Web site, and the Extramural Programs staff has communicated with hundreds of interested applicants about Recovery Act opportunities.

She addressed accomplishments to date. As of May 2009, about 166 NIH Challenge Grant applications had been assigned to NLM. In the budget approval process for ARRA grants, NLM's first 12 awards have been authorized for funding by the White House.

In addition to the ARRA-funded grants, NLM's appropriation budget includes roughly $9 million dollars for new research grants.

Dr. Florance then turned to concept clearance for two research and development contracts that would be part of NLM's spending plan for the recovery act funds. She asked NLM Assistant Director for High Performance Computing and Communication Dr. Michael Ackerman to summarize the projects for the Board before asking the Board for concept clearance that would allow NLM to move ahead with developing the contract proposal for these.

Dr. Ackerman said both projects relate to the Visible Human. The first project, which is the ITK software tool kit, was approved by the Board about 10 years ago. The tool kit has been out since 2003 and is being used in 45 countries in hundreds of labs. But with advances in computers, the NLM team has decided internally it needs a complete rewrite in order for it to use the kind of hardware and the kind of software that's available today but was not in the original plan, such as graphics processors and multi-core CPUs. Dr. Ackerman said this is an opportunity for NLM to do a fourth version (there were three other versions in intervening years). The fourth version would have the same general functionality, but would take into account all the new hardware so it would probably run about an order of magnitude faster. That's significant, he noted, because we're talking about a 10-minute run versus a one-minute run. The Board approved the concept.

Dr. Ackerman explained the second project, Algorithms Adaptors and Data Distribution (A2D2). A similar project was done when ITK came out. At that time, NLM challenged the community to find applications that would really exercise the package. Recognizing that graduate students have written software that's undocumented, good, and not being used, Ackerman said NLM sought out applications that already have been written, and offered up to $100,000 to rewrite it according to our software standards so we can maintain it and make it part of the ITK package. Participants had to prove that it works by showing NLM a scientific paper containing data demonstrating its use. Dr. Ackerman said his team wants to do a similar challenge targeted toward the new version of the tool kit. People will be offered up to $150,000 to exercise the new version.

Ms. Stanley asked whether it would be possible for these things to be done concurrently. Dr. Ackerman said yes. The Board approved the concept.

XIII. MEDLINEPLUS GO LOCAL EVALUATION

Lori Klein, a librarian with the Reference & Web Services section, began with an overview of Go Local, which brings information about local health services to patients, health care providers, families and friends. It is a sister site of MedlinePlus and its contents are prepared locally. For example, if seeking information on breast cancer from the MedlinePlus site, a user would find the basics on symptoms, treatment and coping, news articles on the topic, tutorials, PubMed references, listings of clinical studies from ClinicalTrials.gov and any relevant information in Genetics Home Reference. In Go Local, the search would lead to health screening services, cancer care facilities, support groups, oncologists and other nearby services and providers. You get to Go Local from the MedlinePlus home page and from the various Health Topic pages.

The University of North Carolina at Chapel Hill created the first Go Local site, NC Health Info, in 2003. Today, 32 Go Local programs cover 44 percent of the US population.
In 2007, NLM received an NIH evaluation grant, to probe Go Local's effectiveness and possible areas for improvement.

Why evaluate? Go Local can be an expensive proposition, in terms of staff and services. NLM provides start-up funding via its Regional Medical Libraries but, as Ms. Klein noted, that is often just a drop in the bucket of what's needed. Most Go Local institutions devote the time of .3 to 1.5 staff to Go Local creation and maintenance, and Go Local is a project that engages five NLM computer programmers, although none works on the project full time. Go Local participants, RML Directors, NLM staff, and states and localities thinking about joining Go Local all had a thirst for information on the project's successes and challenges.

A user survey was conducted by the American Customer Satisfaction Index (ACSI) from November 2007 to November 2008, with questions popping up randomly on the Go Local site. Interviews were also conducted with project managers to determine institutional characteristics and the overall impact of Go Local. The ACSI survey revealed an overall satisfaction rate for Go Local of 72, compared to 74 for the main NLM Web site and 85 for MedlinePlus.

Who is using Go Local? Seventy-six percent were first-time visitors and few were regular visitors. (This stands in contrast to MedlinePlus, for which 27 percent of users are there for the first time.) The high rate of first timers might be due in part to the fact that a number of Go Local sites were launched during the survey period, and publicity spiked the use of each new site as it was released. Go Local users are largely female, well-educated and 35 years of age and older. Most are patients or friends and family members of patients. Twenty-eight percent of users found Go Local via a search engine and 18 percent from MedlinePlus. Interestingly, and somewhat disconcertingly, nearly half reported that they visited Go Local to expand their knowledge of a disease or condition. As one way of addressing this, Go Local changed its search engine during the survey period, inserting links to relevant MedlinePlus health topics at the top of each search results page in Go Local.

Joyce Backus, Deputy Director, Public Services Division, described the telephone survey of Go Local project managers at 32 sites. Eleven were identified to be "strong projects," that is, sites with a strong commitment to consumer health or community service *prior* to their implementation of Go Local. All shared one or more project champions at their site, too — committed project directors and/or strong backing from the institution.

Among the positive outcomes of being a Go Local site was increased recognition in the community and within the institution. Go Local proved to be a good reference tool for staff and increased consumer contact was often a positive result.

The ACSI findings on Go Local largely mirror those of MedlinePlus, except for the fact that many users are first-time visitors. In the interviews, we heard many concerns about sustainability of the project. States are tightening their belts and positions are in jeopardy. NLM would like to do more evaluation. What do users want? What should we expand or diminish?

Ms. Tanji said that Hawaii is still a "basic" state, without Go Local coverage. This is a value-added service to MedlinePlus and the survey will help guide states like hers in considering whether to join the Go Local ranks. She asked whether the states and localities can prioritize health concerns, giving great play to certain ones. Ms. Backus said that they generally follow the federal government's Healthy People 2010 goals, but they can be customized.

Dr. Cohen asked whether Go Local made physician and hospital referrals. Hospitals only, he was told. Ms. Buchanan said that her state of New Mexico has two Go Local sites. This really relates to personalized medicine. Resource libraries participating get an entrée to new partners, and can extend their services out into the state. She noted that, because Go Local is a federal program, it should consider standards for quality and funding of the programs. She noted great variability among the states. Asked by Ms. Stanley, Ms. Backus said that NLM has shared survey results with all the Go Local sites, via conference calls and other methods. They also receive their own user statistics from NLM monthly. Dr. Walker asked where Go Local could be in 10 years, with sufficient resources, and Ms. Backus said it would be helpful, as suggested earlier, to standardize quality of content among the sites and offer more programming and database support to the sites, so that more local organizations and resources could be listed. Dr. Ball suggested Go Local be included in nursing and pharmacy school curricula, and that it be used to help with discharge planning. Dr. Rossiter suggested a partnership with CMS, to assist with discharge planning for Medicare and Medicaid recipients. Dr. Walker thought social workers would be another critical group to reach about Go Local. The Board recognized the great value Go Local can offer to returning combat veterans. Dr. Albright thought that Go Local could be added to the Information Rx program. She also said she would check with Dr. Linda Davis, to make sure that Go Local is featured in a resource she compiles called *The Yellow Book*, with resources for members of the military and their families. Ms. Graham said she would explore with the VA and DOD the possibility of adding Go Local to the Veterans Online Benefits portal. Dr. Morton and Mr. James suggested an outreach program to teenagers, to do community service projects using Go Local. Partnerships with the Boy Scouts and Girl Scouts might bear fruit, too, especially in the area of disaster preparedness.

XIV. REPORT FROM THE SUBCOMMITTEE ON OUTREACH AND PUBLIC INFORMATION

Subcommittee Chair Ms. Stanley recounted the major points from yesterday morning's meeting.

The Clinical Trials public meeting on April 20th had almost 250 attendees and was quite successful. It had an outreach component by offering a live Webcast of the proceedings. Dr. Steve Phillips of SIS reported on the Bethesda Hospital Emergency Preparedness Partnership (BHEPP), which is working to provide a template of its community-based disaster plan and perhaps a tool kit, to help replicate that program. The AHCJ journalism fellows will be at NLM in September and the Outreach Subcommittee will schedule time to talk with them. NLM celebrates its 175th anniversary in 2011. This can have broad impact inside and outside NLM, and offer countless outreach and partnership possibilities. The Subcommittee suggested a forward- not backward-looking anniversary, which would also reach out to young people. The White House's involvement will be sought and a product is being put together, featuring the Library's historical holdings; it will be available in multimedia formats. Dr. Ball suggested that the Board be given three slides that they could use, promoting the anniversary to all groups and individuals with whom they meet. Ms. Humphreys said that she liked Mr. James' idea of asking the President to do a taped tribute to the Library. Mr. James said that the anniversary should focus on how the Library makes a difference in people's lives and Dr. Albright said it would be good to play up the notion of NLM as a worthy recipient of taxpayer dollars. Dr. Detre said he would still like to see Board members and others supplied with a succinct set of talking points about NLM's programs and services. This short document should also appear in every issue of *NIH Medline*Plus magazine, and on the NLM Web site. This could also be used to inform Congress of the Library's mission. Ms. Humphreys concurred and promised to follow through.

Dr. Hirsh suggested that the 175th anniversary be a good excuse for implementing a better NLM brand "identity." It would be helpful to try to get rights to shorter URLs, like health.gov or medicine.gov. Also, NLM should make sure that its name appears clearly on all of its Web pages.

XV. REPORT FROM THE NOMINATING COMMITTEE FOR BOR CHAIR

Speaking for Chair Dr. Deanna Marcum, Katherine Mendenhall from the Library of Congress announced the Nominating Committee's choice of Dr. Martin Harris to chair the Board. He has agreed to accept the position, in absentia. The nomination was made, seconded and unanimously approved.

XVI. NCBI: LATEST DEVELOPMENTS

NCBI Director Dr. David Lipman gave a brief overview of the H1N1 virus and its genetic makeup. He then introduced Dr. Jim Ostell, chief of NCBI's Informatics Engineering Branch, to discuss MyBibliography. MyBibliography, a component of the MyNCBI feature within PubMed, is being expanded to include citations to publication types beyond those currently indexed in PubMed. MyBibliography will store the bibliographic citations of a wide variety of source materials, such as articles, books and book chapters, patents and meeting abstracts, as well as many other items commonly found in curricula vitae. MyBibliography will be accessible from the NIH's eRA (Electronic Research Administration) Commons and will allow other Principal Investigators (PIs) to populate progress reports and grant applications with citations stored in their MyBibliography account. NIH plans to require all extramural-funded researchers to use MyBibliography as a tool for effort reporting. Because the bibliographies in MyBibliography likely will be required for grant reporting for three major biomedical funding agencies and linked to an authoritative login identifying the PI, the system will effectively connect a unique AuthorID with a valid bibliography of that author's publications. This will lay the foundation for a broader AuthorID initiative under consideration within NLM and NCBI. The planned development for MyBibliography will directly benefit NIH staff, program officials, authors, PIs and the general users of PubMed.

Dr. Bart Trawick, NCBI staff scientist, who led efforts to develop the NIH manuscript submission system and MyBibliography, described how it keeps track of the status of your submitted manuscripts, even if they're not yet published. MyBibliography can also advise you when an item's in PubMed Central, too. They aim to expand the program to accept information on patents, lectures, Grand Rounds, etc. — items not contained in Pub Med itself. Right now, completing eRA Commons forms requires a lot of typing, and errors can creep in. When MyBibliography is connected to eRA Commons, authors can pull the information out and simply e-mail it to that central NIH grants information site.
This is an easy-to-use system, with lots of flexibility. In MyBibliography, collaborators can share information on an article they produced together, saving effort. Authors can also enter journal citations not in PubMed, keying it in manually. (If the citation *is* already in PubMed, they'll get a notice of that fact with a question, asking them whether this is the same article.) Researchers can appoint a "delegate" to help update their bibliography, too. If citations come up which appear to fit into your bibliography profile, you'll get a message, "Suggestions for Your Bibliography," when you log in. You can accept or reject those. There's also a "Related Articles" field, as in PubMed, that will suggest other references that cite your paper or are closely aligned with your subject matter. This should be up and running in early fall. Asked by Ms. Tanji, Dr. Trawick said that, yes, information in MyBibliography can be exported to EndNote.

AuthorID is, in effect, a database, Dr. Lipman explained. At some point, it might become public, but not authors' personal information, of course. Dr. Hirsh asked whether a Freedom of Information Act request could ever be filed, for this AuthorID information. Dr. Lipman replied that he thought this information would be classified non-FOIA-able. Dr. Ostell said that these resources are probably in a gray zone, on that score. Publications are in the public domain and authors usually want fame and fortune. But someone might object to that kind of exposure, for whatever reason.

Dr. Rossiter said that Community of Science does something similar, and all University of Virginia faculty are required to list public grants there. Dr. Morton and Ms. Stanley asked how many MyNCBI users there are — there are 1.8 million accounts, Dr. Lipman reported. Once NIH eRA makes it mandatory for grantees, numbers should skyrocket, Dr. Trawick noted. The user can change formats of entries, to suit different documents. There are several styles.

The Board expressed approval at these developments, and Dr. Morton said she was reminded of the old DuPont slogan, "Better living through chemistry," but thought it should be updated to "Better living through NCBI."

XVII. NCBI'S 20TH ANNIVERSARY VIDEO AND ADJOURNMENT

A tribute film from NCBI's 20th Anniversary was shown. The meeting adjourned at 12:00 p.m.

ACTIONS TAKEN BY THE BOARD OF REGENTS:

- Approval of the February 10-11, 2009 Regents' Minutes
- Approval of February 2-3, 2010 and May 11-12, 2010 Meeting Dates
- Accepted and Endorsed the Final Report from the Working Group on Health Data Standards and suggested it be transmitted to the Secretary of HHS
- Approved in concept a UMLS Phase 2 R&D Initiative, to revise the goal of effective retrial, integration and analysis of information from disparate sources to aid clinical decision making, in light of current UMLS resources, health data standards and electronic health records.
- Approved in concept a group of smaller demonstration projects, the number and overall cost to be determined, to promote implementations, testing and feedback on use and impact of UMLS, terminology standards, subsets and other tools designed to facilitate adoption and use.
- Approved two projects in concept related to the Visible Human Project: Algorithms Adaptors and Data Distribution (A2D2) and the ITK Software Toolkit.
- Nomination and election of a new Chair of the Board of Regents, Dr. C. Martin Harris.

Appendix A - Roster - Board of Regents

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

Donald A.B. Lindberg, M.D.	Cynthia C. Morton, Ph.D.
Director, National Library of Medicine	Chair, NLM Board of Regents