I, Mary M. Langman, Director, Information Issues and Policy, **Medical Library Association** (MLA), submit this statement on behalf of MLA and the **Association of Academic Health Sciences Libraries** (AAHSL). MLA is a nonprofit, educational organization with 3,500 health sciences information professional members worldwide. AAHSL supports academic health sciences libraries and directors in advancing the patient care, research, education and community service missions of academic health centers through visionary executive leadership and expertise in health information, scholarly communication, and knowledge management. We thank the Subcommittee for the opportunity to submit testimony supporting appropriations for the National Library of Medicine (NLM), an agency of the National Institutes of Health (NIH), and recommend at least $412,097,000 for NLM in FY18.

Working in partnership with the NIH and other Federal agencies, NLM is the key link in the chain that translates biomedical research into practice, making the data and results of research readily available to all who need it. NLM is taking on additional responsibilities for NIH-wide efforts in big data and data science. As health sciences librarians who use NLM's programs and services every day, we can attest that NLM resources literally save lives making NLM an investment in good health.

NLM Leverages NIH Investments in Biomedical Research

NLM's budget supports intramural services and programs that sustain the nation's biomedical research enterprise and more—it builds, sustains, and augments a suite of almost 300 databases which provide information access to health professionals, researchers, educators, and the public. It also supports the acquisition, organization, preservation, and dissemination of the world's biomedical literature. In FY18 and beyond, NLM's baseline budget must be augmented to support expansion of its information resources, services, and programs which collect, organize, and make readily accessible rapidly expanding biomedical knowledge resources and

data. NLM maximizes the return on investment in research conducted by the NIH and other organizations. It makes the results of biomedical information accessible to researchers, clinicians, business innovators, and the public, enabling such data and information to be used more efficiently and effectively to drive innovation and improve health. NLM also plays a critical role in NIH's big data and data science initiatives and in accelerating nationwide deployment of health information technology, including electronic health records (EHRs). NLM leads the development, maintenance and dissemination of key standards for health data interchange that are now required of certified EHRs. NLM also contributes to Congressional priorities related to drug safety through expansion of its ClinicalTrials.gov registry and results database and enhances the nation's ability to prepare for and respond to disasters.

Growing Demand for NLM's Basic Services

NLM delivers more than 50 trillion bytes of data to millions of users daily that helps researchers advance scientific discovery and accelerate its translation into new therapies; provides health practitioners with information that improves medical care and lowers its costs; and gives the public access to resources and tools that promote wellness and disease prevention. Every day, medical librarians across the nation use NLM's services to assist clinicians, students, researchers, and the public in accessing information to save lives and improve health. Without NLM, our nation's medical libraries would be unable to provide quality information services that our nation's health professionals, educators, researchers and patients increasingly need.

NLM's data repositories and online integrated services such as GenBank, dbGaP, Genetics Home Reference (GHR), PubMed, and PubMed Central are revolutionizing medicine and ushering in an era of personalized medicine. GenBank is the definitive source of gene sequence information. Some 2 million users accessed consumer-level information about genetics

from GHR which contains more than 2,500 summaries of genetic conditions, genes, gene families, and chromosomes. PubMed, with more than 27 million references to the biomedical literature, is the world's most heavily used source of bibliographic information with almost 1.2 million new citations added in FY16 and more than 2.4 million users each day. PubMed Central is NLM's digital archive which provides public access to the full-text versions of more than 4.2 million biomedical journal articles, including those produced by NIH-funded researchers. On a typical weekday approximately 1.4 million users download more than 2.8 million articles.

NLM's traditional print and electronic collections increase steadily each year, standing at more than 21 million items—books, journals, technical reports, manuscripts, microfilms, photographs and images. NLM ensures the availability of this information for future generations, making it accessible to all Americans, irrespective of geography or ability to pay, and guaranteeing that citizens can make the best, most informed decisions about their healthcare.

Encourage NLM Partnerships

NLM's outreach programs are essential to MLA and AAHSL membership and to the profession. Through the National Network of Libraries of Medicine (NNLM), with over 6,500 members nationwide, the NLM educates medical librarians, health professionals, and the general public about its services and provides training in their effective use. The NNLM serves the public by promoting educational outreach for public libraries, secondary schools, senior centers and other consumer settings, and its outreach to underserved populations helps reduce health disparities. NLM's "Partners in Information Access" provides local public health officials with online information that protects public health.

NLM's MedlinePlus provides consumers with trusted, reliable health information on 1,000 topics in English and Spanish. It attracts more than 1 million visitors daily. NLM continues

to enhance MedlinePlus and disseminate authoritative information via the website, a web service, and social media. MedlinePlus and MedlinePlus en español have been optimized for easier use on mobile phones and tablets. *NIH MedlinePlus Magazine* and *NIH MedlinePlus Salud* are available in doctors' offices nationwide, and NLM's MedlinePlus Connect enables clinical care organizations to link from their EHR systems to relevant patient education materials.

Emergency Preparedness and Response

NLM's Disaster Information Management Research Center collects and organizes disaster-related health information, ensures effective use of libraries and librarians in disaster planning and response, and develops information services to assist responders. NLM responds to specific disasters worldwide with specialized information resources appropriate to the need, including information on bioterrorism, chemical emergencies, fires and wildfires, earthquakes, tornadoes, and pandemic disease outbreaks (e.g., Zika). MLA and NLM continue to develop the Disaster Information Specialization program to build the capacity of librarians and other interested professionals to provide disaster-related health information outreach. Working with libraries and publishers, NLM's Emergency Access Initiative makes free full-text articles from hundreds of biomedical journals and reference books available to medical teams responding to disasters. MLA and AAHSL ask the Subcommittee to support NLM's role in this crucial area.

Health Information Technology and Bioinformatics

NLM supports informatics research, training and the application of advanced computing and informatics to biomedical research and healthcare delivery. Many of today's biomedical informatics leaders are graduates of NLM-funded informatics research programs at universities nationwide. A number of the country's exemplary electronic and personal health record systems benefit from findings developed with NLM grant support. A leader in supporting the

development, maintenance, and free, nationwide dissemination of standard clinical terminologies, NLM works closely with the Office of the National Coordinator for Health Information Technology to promote the adoption of interoperable EHRs. NLM continues to develop tools to make it easier for EHR developers and users to implement accepted health data standards and link to relevant patient education materials.

Dissemination of Clinical Trial Information

ClinicalTrials.gov, the world's largest clinical trials registry now includes more than 238,000 registered studies and summary results for more than 24,500 trials. As health sciences librarians who fulfill requests for information from clinicians, scientists, and patients, we applaud the NIH and NLM for implementing the requirements for clinical trials registration and results submission consistent with the FDA Amendments Act of 2007 and for applying them all NIH-supported clinical trials. These efforts enhance the transparency of clinical trial results and provide patients and clinicians with information to guide health care decisions. They also ensure biomedical researchers have access to results that can inform future protocols and discoveries.

Improving Public Access to Funded Research Results

The Department of Health and Human Services (DHHS) announced a common policy approach to expand public access to the results of HHS-funded scientific research. Its operating divisions will use NLM's PubMed Central (PMC) as a common repository for peer-reviewed publications. Other Federal agencies will also use PMC to provide access to articles resulting from their research. NLM's experience with PMC and related tools and engagement with health sciences libraries is essential to effectively implementation.

We look forward to continuing this dialogue and thank you for your efforts to support funding of at least $412,097,000 for NLM in FY18, with additional increases in future years.