



The National Library of Medicine (NLM) is a global leader in biomedical informatics and computational health data science and the world's largest biomedical library. As 1 of the 27 Institutes and Centers at NIH, NLM's research and information services support scientific discovery, health care, and public health.

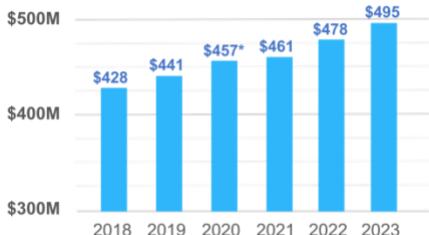
## A PLATFORM FOR BIOMEDICAL DISCOVERY

The 2017-2027 NLM strategic plan includes three goals:

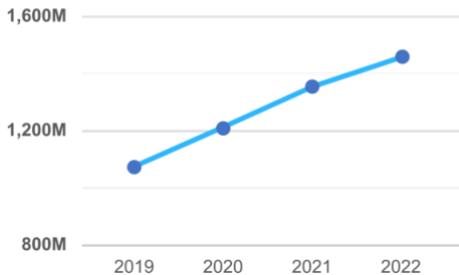
1. Accelerate discovery and advance health through data-driven research;
2. Reach more people in more ways through enhanced dissemination and engagement; and
3. Build a workforce for data-driven research and health.

Implementation of the strategic plan enables NLM to support and respond to NIH-wide priorities and support discovery and public health globally.

### Funding History



### Annual Users of NLM Services



**Patricia Flatley Brennan, R.N., Ph.D.**

As Director of the NLM since 2016, Dr. Brennan spearheaded the development of a 10-year strategic plan that envisions NLM as a platform for biomedical discovery and data-powered health. Combining her background in engineering, information technology, and clinical nursing practice, Dr. Brennan positions NLM and its world-class genomic databases, innovative research and information services, and vast literature resources to serve science and society, and to guide advances in data science and data-driven discovery.

## NLM CONDUCTS AND FUNDS RESEARCH

NLM's vibrant intramural research program conducts innovative research and training in computational biology and computational health sciences. NLM's extramural grants support original research projects and advanced training in biomedical informatics and data science.

### Intramural Researchers at NLM



Explore novel applications of artificial intelligence that advance interpretation of medical images to detect health issues.



Apply network analysis approaches to protein-protein interactions to predict interactions between individual molecules in human diseases.



Study and assess features that can predict and mitigate bias in clinical data sets, and design algorithms to reduce bias in research data sets.

### Extramural Researchers Across the Nation



Incorporate machine and artificial intelligence into tools and resources that benefit health care providers, scientists, and the public.



Develop approaches to curate biomedical knowledge and data, including integration of structured and unstructured data, to make data findable and usable for scientific discovery.



Conduct research that supports integration and linking of all available data relating to a person's health to support health risk assessments.



## 21st-CENTURY LIBRARY

Every day, millions of scientists, health professionals, and members of the public use NLM's online information resources to translate research results into new treatments, access NLM's collections, develop new products, inform clinical decision making, and improve public health.

### ClinicalTrials.gov

The world's largest clinical trial registry and results database, with nearly 430,000 clinical studies and nearly 56,000 results summaries.

### MedlinePlus

NLM's trusted and authoritative source of consumer health information, accessed by more than 430 million users annually.

### PubMed

The most heavily used biomedical literature citation database in the world, containing nearly 35 million citations.

### PMC PubMed Central

Digital archive of more than 8 million freely accessible, full-text biomedical and life sciences journal articles, including more than 290,000 coronavirus-related articles and more than 3,500 preprint articles featuring NIH-funded research.

### Sequence Read Archive

The world's largest publicly available repository for high-throughput sequencing data, comprising more than 60 petabytes of data which are also freely available through commercial cloud services.

### Terminology Standards

NLM is the central coordinating body within HHS for clinical terminology standards for health data interoperability.

## BIOMEDICAL INFORMATICS TRAINING

NLM funds research training programs in biomedical informatics and data science at 18 universities across the country that enroll approximately 200 predoctoral and postdoctoral trainees.



NLM launched a new research experience training program to attract undergraduate, post-baccalaureate, and master's-level students from underrepresented groups to biomedical informatics and data science doctoral programs, and to promote scientific workforce diversity.

NLM provides research training experiences for short-term, summer, and fellowship trainees at the high school, pre- and post-baccalaureate, and pre- and post-doctoral levels to work with its intramural investigators in computational biology or computational health research.

## OUTREACH AND ENGAGEMENT

NLM leverages its Network of the National Library of Medicine (NNLM®) of more than 8,800 academic health science libraries, hospital and public libraries, and community organizations to improve access to health information for all. NNLM offers training to support effective use of NLM information resources by librarians, health professionals, researchers, and the public. NNLM currently operates through seven regions across the United States.



## FUTURE INITIATIVES

NLM will continue to lead the development of advanced biomedical data and information systems to support research, clinical care, and public health, as well as novel analytical approaches to uncover new patterns and biomedical phenomena from biomedical and health data. NLM will:



**Support sustainability and open science.** NLM will leverage its expertise in creating high-quality, sustainable, and secure databases to make biomedical research information accessible through innovative information services that engender trust.



**Advance biomedical informatics and computational health data science.** NLM will sustain its research investment in methods to analyze different data types, improve disease detection and diagnosis, and understand the structure and function of genes, and continue to train the next generation of biomedical informatics and data science researchers.



**Modernize NLM infrastructure and organization.** NLM will continue to build a 21st-century digital library that offers literature, data, analytical models, and new approaches to scientific communications that are accessible, sustainable, and available 24 hours a day, 7 days a week.



**Contribute to NIH and government-wide priorities.** NLM will continue to provide critical data management and guidance to support NIH and government-wide efforts, and to share its scientific knowledge and program expertise in data science, data management, infrastructure, security, and workforce development to support these efforts.