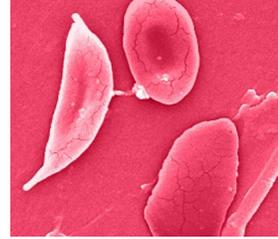




National Heart, Lung, and Blood Institute



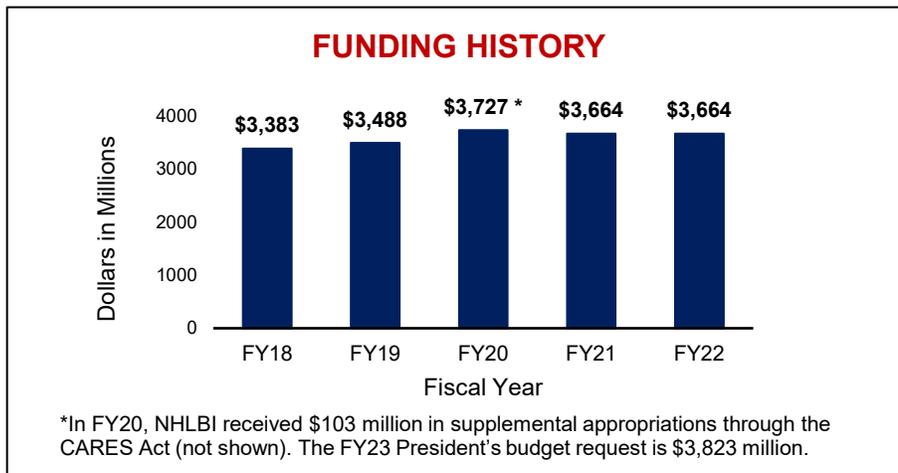
February 2022

ABOUT THE NHLBI

- The NHLBI is the nation’s leader in supporting research and training on the prevention and treatment of heart, lung, blood, and sleep disorders.
- We were established in 1948 to address rising rates of cardiovascular disease — which includes heart disease and stroke and has been the nation’s leading cause of death for 100 years.
- Our mission has expanded to lead NIH research efforts in lung diseases, including asthma and chronic obstructive pulmonary disease (COPD).
- We lead research on blood transfusion and blood diseases, such as sickle cell disease.
- In 1993, we became the home for the National Center on Sleep Disorders Research (NCSDR), which coordinates NIH programs related to sleep biology and disorders.
- NHLBI’s research advances scientific knowledge, improves public health, and saves lives.



Gary H. Gibbons, M.D., is director of the National Heart, Lung, and Blood Institute (NHLBI). He received his M.D. from Harvard Medical School and has served on the faculty at Harvard, Stanford University, and Morehouse School of Medicine in Atlanta. He received a 2021 Service to America Award.



Facts and Figures

Full-Time Staff**	863
Awards**	916
Principal Investigators**	1,259
ESI Success Rates***	32.4%
K Award Success Rates***	37.7%

Current Major Initiatives

- The NHLBI **Trans-Omics for Precision Medicine (TOPMed)** program aims to harness data science to develop personalized therapies for people with heart, lung, blood, and sleep disorders. TOPMed has assembled one of the world’s largest, most diverse collections of genomic, clinical, and environmental data, derived from participants in NIH-funded studies. The NHLBI **BioData Catalyst**, a secure cloud-based research ecosystem, hosts TOPMed and other large datasets and offers data analysis tools to support researchers.
- The NHLBI supports research to reduce **maternal morbidity and mortality**, especially among African American and American Indian/ Alaska Native women, who are at higher risk than white women. NHLBI’s approach takes into account women’s health across their lifespan — before, during, and after their reproductive years.

- **Because COVID-19 affects heart, lung, and blood health**, the NHLBI is leading clinical trials to identify life-saving treatments for people who get sick, as well as community engagement efforts to ensure that the hardest-hit communities are included in research and benefit from its findings.
- The NHLBI **Catalyze Program** helps researchers turn basic scientific discoveries into therapeutics, devices, and diagnostics ready for human testing.

** Full-time staff, awards, and extramural principal investigators are FY21 data. *** These success rates were averaged over 3 years (FY19,20,21) and calculated as (# awards/# of percentiled applications x 100). For more about percentiles, see <https://grants.nih.gov/grants/peer-review.htm#Summary>



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Accomplishments in...

Photos from the Jackson Heart, RURAL, and Strong Heart Studies.

Heart Health

- For more than 70 years, the **Framingham Heart Study (FHS)** has uncovered risk factors and prevention strategies for heart disease, and it is now examining links between heart and brain health.
- The SPRINT trial found that intensive blood pressure treatment can reduce the risk of death from cardiovascular disease among people over age 50. These findings helped change the 2017 national **hypertension guidelines**.
- Out-of-hospital **cardiac arrest** is often deadly. The ARREST trial showed that patients who received an advanced type of mechanical life support, extra corporeal membrane oxygenation (ECMO), early had improved survival rates (43%) compared with standard care (7%).
- The **Bench to Bassinet Program** supports research that has helped many children with congenital heart disease (CHD) thrive. It has amassed genomic data on 10,000+ patients and is being leveraged to conduct a 5-year study on **multisystem inflammatory syndrome in children (MIS-C)**, a rare condition affecting some children with COVID-19, as part of the NIH CARING for Children with COVID effort.

at NIH to support research on the **health impacts of climate change**.

- A newly released NIH **Sleep Research Plan** serves as a blueprint for sleep and circadian scientific priorities and collaborative research across federal agencies and external partners.

Blood Health

- The **Cure Sickle Cell Initiative** is working to bring new gene-based therapies into clinical trials, and a collaboration with the Bill & Melinda Gates Foundation will help bring these cures to low-resource settings.
- The **Recipient Epidemiology and Donor Evaluation Study (REDS)**, first launched 30+ years ago to help keep the blood supply safe from HIV, is now expanding the reach of antibody tests for COVID-19.
- For people with **hemophilia**, a rare genetic disorder that can cause severe bleeding, NHLBI-funded research helped develop factor replacement therapy — the infusion of clotting proteins into the blood.

Lung and Sleep Health

- Based on findings that unique types of asthma require unique therapies, the **Precision Interventions for Severe and/or Exacerbation-Prone Asthma (PrecISE)** Network is developing precision medicine approaches for severe asthma.
- In collaboration with federal and nonfederal partners, the NHLBI developed the **COPD National Action Plan**, which is guiding efforts to reduce the burden of COPD, especially in rural and underserved communities.
- **Climate change** and related environmental factors, such as pollution and wildfires, pose substantial threats to human health — for example, by increasing the risk and severity of asthma. The NHLBI is working with others

Health Disparities

- Modeled after FHS, the **Jackson Heart Study (JHS)** and **Strong Heart Study** are shedding light on heart disease risk in African Americans and American Indians, respectively. JHS has a new director as of September 2021.
- The newly established **Risk Underlying Rural Areas Longitudinal (RURAL) Cohort Study** seeks to understand the high rate of chronic heart and lung diseases in rural communities in the Southeastern U.S.
- The **Disparities Elimination through Coordinated Interventions to Prevent and Control Heart and Lung Disease Risk (DECIPHeR)** program is studying how to move evidence-based interventions into communities where the burden of chronic disease is high.

NHLBI'S COVID-19 RESPONSE

Because COVID-19 impacts heart, lung, and blood health, the NHLBI has taken an all-hands-on-deck approach to address the pandemic. The NHLBI established the **Collaborating Network of Networks for Evaluating COVID-19 and Therapeutic Strategies (CONNECTS)** to test therapies that may slow or stop COVID-19 progression. CONNECTS has played a major role in identifying both effective and ineffective treatments through the NIH **Accelerating COVID-19 Therapeutic Interventions and Vaccines (ACTIV) trials**. ACTIV-3 trials showed that monoclonal antibodies did not help hospitalized patients. ACTIV-4 trials found that blood thinners helped moderately ill patients but not those who were critically ill. The Institute also co-leads the following:

- The NIH **Community Engagement Alliance (CEAL) Against COVID-19 Disparities** network connects researchers with trusted community leaders across the country to reach people hardest hit by the pandemic, ensure research inclusion, and improve vaccine uptake and access.
- The NIH **Researching COVID to Enhance Recovery (RECOVER) Initiative** will follow tens of thousands of adults and children to help us understand Long COVID and other persistent complications that can follow SARS-CoV-2 infection.

