DEPARTMENTS OF LABOR, HEALTH AND HUMAN SERVICES, AND EDUCATION, AND RELATED AGENCIES APPROPRIATION BILL, 2024

JULY 27, 2023.—Ordered to be printed

Ms. BALDWIN, from the Committee on Appropriations, submitted the following

REPORT

[To accompany S. 2624]

The Committee on Appropriations reports an original bill (S. 2624) making appropriations for Departments of Labor, Health and Human Services, and Education, and related agencies for the fiscal year ending September 30, 2024, and for other purposes, reports favorably thereon without amendment and recommends that the bill do pass.

Amounts to new budget authority

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
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<tr>
<td>Total of bill as reported to the Senate</td>
<td>$1,445,830,783,000</td>
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<tr>
<td>Amount of 2023 appropriations</td>
<td>1,430,661,909,000</td>
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<tr>
<td>Amount of 2024 budget estimate</td>
<td>1,470,554,232,000</td>
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Bill as recommended to Senate compared to:

- **2023 appropriations**: +15,168,874,000
- **2024 budget estimate**: −24,723,449,000
The Committee provides $49,224,000,000, an increase of $943,000,000, for the National Institutes of Health [NIH].

Within the total appropriation, the Committee provides $407,000,000 in budget authority authorized in the 21st Century Cures Act (Public Law 114–255). Per the Cures Act, $86,000,000 is transferred to the National Institute of Neurological Disorders and Stroke [NINDS] and $86,000,000 to the National Institute of Mental Health [NIMH] for the BRAIN Initiative; and $235,000,000 to the Office of the Director [OD] for the All of Us precision medicine initiative. The total also includes $1,412,482,000 in transfers available under section 241 of the PHS Act (Public Law 78–410 as amended).
More than 80 percent of NIH’s appropriated budget is awarded for extramural research each fiscal year. This funding supports more than 58,000 meritorious grants to more than 2,700 academic universities, hospitals, small businesses, and other organizations throughout the United States and internationally. This investment has allowed NIH to continue its mission to seek fundamental knowledge about the nature and behavior of living systems and the application of that knowledge to enhance health, lengthen life, and reduce illness and disability.

As in previous years, the Committee has targeted NIH funding in areas of promise of scientific advancement and urgency, while allowing NIH to maintain flexibility to pursue unplanned scientific opportunities and address unforeseen public health needs. The Committee increases support for mental health research by $100,000,000, provides an increase of $100,000,000 for research on Alzheimer’s disease and Alzheimer’s disease-related dementias research, increases support for cancer research by $60,000,000, and increases support for diabetes research by $10,000,000. The bill also includes an increase of $20,000,000 for the Helping to End Addiction Long-term or HEAL Initiative, $12,000,000 for a new palliative care research program, and an increase of $10,000,000 for the Implementing a Maternal health and Pregnancy Outcomes Vision for Everyone [IMPROVE Initiative] to combat recent alarming rates of maternal mortality. Finally, the bill provides $1,500,000,000 for the Advanced Research Projects Agency for Health [ARPA–H], the President’s bold and promising proposal to accelerate the pace of breakthroughs in medicine using the Defense Advanced Research Projects Agency as a model.

The Committee directs NIH to include updates on the following research, projects, and programs in the fiscal year 2025 Congressional Justification: metastatic breast cancer; future goals for each of the deadliest cancers (brain, esophagus, liver, lung, ovary, pancreas, stomach and mesothelioma); the link between obesity and endometrial cancer; melanoma; neuroblastoma; pediatric immunotherapy clinical trials; congenital heart disease; kidney transplant disparities; lower urinary tract symptoms; celiac disease; Maternal-Fetal Medicine Units Network; pelvic organ prolapse; Usher syndrome; indoor pollutants; amyloidosis; Childhood Post-Infectious Neuroimmune Disorders/Pediatric Acute-Onset Neuropsychiatric Syndrome [PANS]/Pediatric Autoimmune Neuropsychiatric Disorders Associated with Streptococcus [PANDAS]; Congenital Cytomegalovirus; Native Hawaiian Early Career Development; Von Hippel-Lindau Disease; NCTs plans to update the Surveillance, Epidemiology, and End Results Registry; pulmonary fibrosis; cellular immunity; and opportunities to enhance childhood cancer research efforts, including coordinating efforts already underway through the Trans-NIH Pediatric Research Consortium.

NATIONAL CANCER INSTITUTE

<table>
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<tr>
<th>Appropriations, 2023</th>
<th>$7,104,159,000</th>
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<td>Budget estimate, 2024</td>
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<tr>
<td>Committee recommendation</td>
<td>$7,380,159,000</td>
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The Committee recommendation includes $7,380,159,000 for the National Cancer Institute [NCI]. Of this amount, $30,000,000 is available for repairs and improvements to the NCI facility in Frederick, Maryland.

Alaska Native Colorectal Cancer.—The Committee is concerned the Alaska Native people are twice as likely to be diagnosed with colorectal cancer as the White population. A recent study shows that Alaska Natives have the world’s highest rate of colorectal cancer. Colorectal cancer often has no symptoms until later stage, but screenings help detect growth at earlier stages. These high rates have led the Alaska Native Tribal Health Consortium and the Alaska Native Medical Center to amend their guidelines to lower the screening age from 45 to 40 in order to detect early onset colorectal cancer. The Committee encourages NCI to expand research efforts to reduce Alaska Native cancer disparities and improve outreach.

Childhood Cancer Data Initiative [CCDI].—The Committee includes no less than $50,000,000 for the CCDI, including to support continued enhancement of the CCDI Molecular Characterization Initiative.

Childhood Cancer STAR Act.—The Committee includes $30,000,000, the same as the fiscal year 2023 enacted level, for continued implementation of the Childhood Cancer Survivorship, Treatment, Access, and Research [STAR] Act to expand existing biorepositories for childhood cancer patients enrolled in NCI-sponsored clinical trials to collect and maintain relevant clinical, biological, and demographic information on all children, adolescents, and young adults with cancer. The Committee has also included sufficient funding to carry out childhood cancer survivorship research and programs as authorized in the STAR Act, such as supporting research to inform best practices for the treatment of late effects of childhood cancers, research to improve collaboration among providers so that doctors are better able to care for this population as they age, and research to inform innovative models of care for childhood cancer survivors. This amount also includes $2,000,000 provided for the CDC’s ongoing efforts to enhance cancer registry case capture efforts for childhood and adolescent cancers.

Clinical Research Workforce Training.—The Committee is concerned that a shortage of staff who are qualified to support and administer cancer clinical trials has reached a crisis point and is slowing our Nation’s progress in developing new treatments. In some cases, trials have been delayed or even abandoned because the sponsor or cancer center conducting the trial could not hire enough staff to run them. The shortage is especially acute in trials involving cellular therapies, such as CAR–T, which are customized for each individual patient. Specialized skills are required to run trials that involve extracting a patient’s cells, re-engineering them in the lab, and infusing them back into the patient. Therefore, the Committee urges the NCI to address the shortage of clinical research staff by working with the academic community to support the training of highly specialized clinical research staff, including in the area of cellular therapy.
**Deadliest Cancers.**—The Recalcitrant Cancer Research Act [RCRA] of 2012 (Public Law 112–239) focuses on cancers with a 5-year survival rate below 50 percent, which account for over 40 percent of all U.S. cancer deaths. While advances in some cancers have made it possible to reduce the overall rate of cancer deaths over the last several decades, there has been limited progress reducing mortality for these diseases. In fiscal year 2020 (Public Law 116–94), Congress directed NCI to develop a scientific framework using the process outlined in the RCRA for stomach and esophageal cancers. In response, NCI formed a multi-disciplinary working group of its Clinical Trials and Translational Research Advisory Committee [CTAC] and has released a report listing suggested research focus areas. The Committee appreciates that NCI has transmitted its framework for gastric and esophageal cancers to Congress, emphasizing the important research efforts underway, as well as future opportunities. The Committee requests to be kept informed of NCI’s efforts on the pancreatic, lung, glioblastoma, esophageal and stomach cancer frameworks and directs NCI to start a similar process for primary liver cancer, including cholangiocarcinoma. Finally, given the devastating toll of all recalcitrant cancers and the lack of diagnostic and treatment resources currently available, the Committee urges NCI to identify future goals for each of the deadliest cancers (brain, esophagus, liver, lung, ovary, pancreas, stomach and mesothelioma) in the fiscal year 2025 CJ.

**Endometrial Cancer and Obesity.**—Endometrial cancer is the most common gynecologic cancer, and the fourth most common malignancy among women in the United States trailing only breast, lung, and colorectal. In fact, in 2023, it is estimated that 66,200 new cases of uterine cancer will be diagnosed, and about 13,030 women will die from the disease. Obesity is the strongest known risk factor for the most common type of endometrial cancer, and the disease is more than three times as common in people with obesity. The Committee recognizes that obesity is a growing public health issue, and as rates of obesity continue to increase, the number of women diagnosed with endometrial cancer is also expected to rise. Therefore, the Committee requests an update in the fiscal year 2025 CJ on collaborative research efforts across NIH, other NIH-supported extramural research projects, and research efforts focusing on the link between obesity and endometrial cancer.

**Geriatric Cancers.**—As our population ages and cancer treatments improve, more patients with cancer are living long into their late decades. Adults aged 65 and older currently account for 67 percent of cancer survivors but are projected to account for 73 percent by 2040. Survivorship programs, however, have primarily focused on the late effects of cancer diagnosed at younger ages rather than supporting older adults. In addition, older adults with cancer remain significantly underrepresented in clinical trials, making treatment of these patients challenging for oncologists. The Committee urges NCI to continue to support funding opportunities across the geriatric oncology research continuum. Investments in this area will allow clinicians to provide a higher quality of care to this vulnerable and growing cancer patient population.
Glioblastoma [GBM].—GBM is a cancer with less than a 5 percent 5-year relative survival rate. The average survival time from diagnosis has improved by only 6 months over the last 30 years. To date, only five drugs and one medical device have been approved by the FDA for treating GBM. With prior Congressional investment in NCI programs, glioblastomas have been molecularly characterized, resulting in a new and promising understanding of these tumors, including identifying potential clinical strategies and agents, trial designs, and imaging and pathology technologies. The Committee commends NCI for its establishment and implementation of the GBM Therapeutics Network [GTN] and requests an update on the status of the program’s implementation and progress. The GTN’s cross-cutting teams’ capabilities to conduct pre-clinical studies and early-phase clinical trials enable the careful evaluation of potential treatments, including small molecule drugs, immunotherapies, radiation, and devices. The overall goal of the GTN is advancing progress towards future cures and improved quality of life for GBM patients. The Committee urges NCI to continue to support the GTN so that this program can rapidly launch clinical trials that speed access to promising qualified treatments to patients consistent with NCI’s Glioblastoma Working Group recommendations in 2019.

Helping Cancer Patients Quit Smoking.—The Committee is concerned that not all cancer patients who smoke and are treated at NCI designated cancer centers are being offered tobacco cessation services. Research indicates that smoking cessation can lead to improved cancer treatment outcomes for all cancers. The Committee commends NCI for identifying this gap and launching the Cancer Center Cessation Initiative with the long-term goal of helping cancer centers and other hospitals build and implement tobacco cessation treatment programs for cancer patients. The Committee is eager to read new findings and publications from the pilot program and urges NCI’s continued support for this initiative to ensure its sustainability. The Committee also is aware that tobacco use and lung cancer rates are higher in rural areas. The Committee encourages NCI to provide input on Agency for Healthcare Research and Quality efforts to develop model tobacco cessation programs for cancer patients in rural hospitals to improve health outcomes.

Liver Cancer.—The Committee applauds NCI for seeking input on how best to address the need to prioritize early detection, screening, and prevention sciences for primary liver cancer. Primary liver cancer has a dismal 5-year survival rate of only 18 percent, is the third most common cause of cancer death in the U.S., and unlike most cancers the rate of liver cancer mortality continues to increase. The Committee urges NCI to continue to support a robust research portfolio in early detection, screening, and prevention of liver cancer. The Committee applauds the NCI for its Early Detection of Liver Cancer consortia initiatives as a means of fostering progress and collaboration. The Committee encourages NCI to continue such programs as well as Program Projects, R01 and U01 Cooperative Research to advance progress against liver cancer. Also, as hepatitis B is estimated to cause up to 60 percent of the cases of liver cancer, the Committee applauds NCI for its collaboration.
to implement the Strategic Plan for Trans-NIH Research to Cure Hepatitis B.

Maternal and Child Cancer Risks.—The Committee is concerned about knowledge gaps regarding the risk and impact of exposure to environmental carcinogens associated with common cancers in women and children, particularly in understudied and highly impacted populations such as communities of color and low-income populations. Additional research is needed to understand the windows of exposure and the relationships between multiple exposures to environmental contaminants and intermediate cancer risk to develop effective prevention programs for environmentally mediated cancers and address health inequities. The Committee encourages NCI to continue to support research to understand the impact of multiple exposures to environmental chemicals, pollutants, and social stressors across a diverse population of pregnant women and children.

Melanoma.—The Committee encourages NCI to continue support for research on mutagenesis, early detection and treatment. Continued study of gene expression profiling in melanoma and its precursors is needed to define patient subsets by their risk of melanoma and their prognosis, which will be able to guide management of early-stage disease as has been the case in breast cancer. Melanoma research over the last decade has produced groundbreaking advances in targeted therapy and immunotherapy that have not only led to a decline in melanoma mortality, but have been the foundation for advances in many other cancer types. The Committee encourages NCI to continue to support research on mechanisms of primary and secondary drug resistance, new drug targets and validation of predictive biomarkers that will allow selection of optimal therapy. Basic and translational goals should be facilitated through development and use of ever-improving models of human melanoma, including those involving rare subtypes. In addition, the Committee encourages NCI to explore opportunities for multicenter trials that will determine whether shorter courses of therapy will decrease toxicity while maintaining benefit, refine adjuvant therapies, and continue to develop neoadjuvant therapies. The Committee also encourages NCI to continue to further rare melanoma research through the use of patient data and biospecimen banks where populations are not adequate for randomized trials. The Committee requests an update on melanoma research efforts in the fiscal year 2025 CJ.

Neuroblastoma.—The Committee encourages NCI to continue to support research on high-risk neuroblastoma, including continued support for an innovative treatment consortium that tests new therapies for relapsed and refractory patients in early phase clinical trials. The Committee requests an update on neuroblastoma research efforts in the fiscal year 2025 CJ.

Pediatric Cancer Immunotherapy.—The Committee encourages NCI to continue to support pediatric immunotherapy translational and clinical research. The Committee is aware of the transition from the Pediatric Immunotherapy Discovery and Development Network to the Pediatric Immunotherapy Network. The Committee requests an update on progress made in ensuring the continuation
of multi-site pediatric immunotherapy clinical trials in the fiscal year 2025 CJ.

Surveillance, Epidemiology, and End Results [SEER] Program.—The Committee recognizes NCI for recent efforts to modernize the SEER registry and bolster data collection, including innovative activities to better capture the prevalence and progression of metastatic cancers. NCI is directed to further support SEER modernization activities in a meaningful way, and to continue to update the Committee on progress and unmet needs in this area in the fiscal year 2025 CJ.

NATIONAL HEART, LUNG, AND BLOOD INSTITUTE

Appropriations, 2023 ............................................................................. $3,982,345,000
Budget estimate, 2024 ........................................................................... 3,985,158,000
Committee recommendation ................................................................. 3,982,345,000

The Committee recommendation includes $3,982,345,000 for the National Heart, Lung, and Blood Institute [NHLBI].

Community Engagement Alliance Against COVID–19 Disparities [CEAL] Initiative.—The Committee includes $30,000,000 for the CEAL initiative, consistent with the fiscal year 2023 enacted level. CEAL connects researchers with community organizations to foster trust in science, to conduct research and increase participation of people from underrepresented communities in clinical trials for treatments, vaccines, and research on critical areas of public health need.

Congenital Heart Disease [CHD].—The Committee commends NHLBI for its continued work to better understand causation, improve treatments and outcomes, support the growth of the clinical and research workforce, and integrate registry data and research datasets to facilitate research on congenital heart disease across the lifespan, including through the Pediatric Heart Network and the Pediatric Cardiac Genomics Consortium. The Committee encourages NHLBI to prioritize CHD activities outlined in its strategic plan, including improving understanding of outcomes and co-morbidities, improving treatment options across the lifespan, and accelerating discovery, analysis, and translation by leveraging CHD registries and networks. The Committee requests NHLBI include in its fiscal year 2025 CJ a report on steps being taken to close these research gaps.

Lung Health Research.—The burden of chronic lung diseases continues to rise. In order to accelerate progress in addressing these challenges for the approximately 15 million Americans diagnosed with chronic obstructive pulmonary disease [COPD] and other airway diseases such as non-cystic fibrosis bronchiectasis, the Committee encourages NHLBI to support critical research on these conditions including: (1) development of complex tissue and cellular systems to mimic the disease process in the lung to help identify molecular pathways of disease; (2) research to promote earlier diagnosis; (3) clinical research of early disease to identify appropriate targets to modulate disease progression before irreversible tissue damage has occurred; and, (4) proof-of-concept clinical trials including translational and experimental medicine studies. The Committee directs NHLBI to provide a report to the Committee within
180 days of enactment on the current and planned activities in these areas.

**Pulmonary Fibrosis.**—Many pulmonary fibrosis (PF) patients wait more than a year for diagnosis after symptom onset, and patients with some types of PF have a life expectancy of only three to 5 years. Therefore, the Committee encourages NHLBI to support research into biomarkers that can aid in earlier, safer diagnosis of PF, as well as tools that can help predict which patients will experience disease progression. The Committee commends NHLBI for hosting a Pulmonary Fibrosis Stakeholders Summit in November 2022 to develop a blueprint for PF-related research priorities over the next 5 years, and requests an update on the plan’s implementation in the fiscal year 2025 CJ. The plan’s priorities include a focus on early disease detection and improved diagnosis and innovative clinical trial designs. The Committee urges NHLBI to support the development of advanced research models and integrate these models into preclinical studies in order to facilitate faster drug development. The Committee also hopes the PF plan will lead to increased support for related research and coordination to address this deadly disease.

**Rare Blood Disorders.**—The Committee is encouraged by new leadership and emerging vision for the Division of Blood Diseases and Resources. NHLBI is encouraged to sustain its focus in immune thrombocytopenia, warm autoimmune hemolytic anemia and other rare blood disorders, including through community collaborations and partnerships with other Institutes and Centers, to sustain scientific progress in this important area.

**Sleep Disorders.**—The Committee applauds NHLBI and other NIH Institutes and Centers for the ongoing commitment to sleep and circadian research, and notes the wealth of opportunities for further progress in specific sleep disorders and the promotion of sleep health. The Committee encourages the National Center for Sleep Disorders Research (NCSDR) to advance the blueprint for ongoing and emerging activities outlined through the recent NIH Sleep Research Plan and to advise the Committee of any resources, infrastructure, or innovation needed to facilitate further progress.

**Thalassemia.**—Donated blood has a relatively short “shelf life” and is generally stored for only 42 days. However, stored blood begins to degrade before the end of that 42-day period, with possible stiffening of cell membranes as early as after 21 days. For patients in need of emergency blood transfusions, that degradation may not be significant; however, studies are needed to determine the impact of older red blood cells on patients who require chronic transfusion, such as those with thalassemia, especially in terms of iron loading in the heart and internal organs. The Committee urges NHLBI to continue to support research initiatives focused on this issue.

**Valvular Heart Disease Research.**—Many people in the U.S. have heart valve defects or disease but do not have symptoms. For some, the condition remains the same throughout their lives and does not cause significant or life-threatening problems. Unfortunately, about 25,000 people die each year in the U.S. from heart valve disease, primarily due to underdiagnoses and under-treatment of the condition. The Committee strongly supports more research into the causation of and risk factors for valvular heart disease. Such research
should focus on the use of advanced technological imaging and other relevant methods to generate data related to valvular heart disease, and assessing potential risk factors for sudden cardiac arrest or sudden cardiac death from valvular heart disease. Additionally, the Committee supports efforts by NIH to convene a workshop of subject matter experts and stakeholders to identify research needs and opportunities to develop recommendations for the identification and treatment of individuals with mitral valve prolapse, including individuals who may be at risk for sudden cardiac arrest or sudden cardiac death.

NATIONAL INSTITUTE OF DENTAL AND CRANIOFACIAL RESEARCH

Appropriations, 2023 ............................................................................. $520,163,000
Budget estimate, 2024 ........................................................................... 520,138,000
Committee recommendation ................................................................. 520,163,000

The Committee recommendation includes $520,163,000 for the National Institute of Dental and Craniofacial Research [NIDCR].

Dental Care.—The Committee reaffirms that dental care is integral to the medical management of numerous diseases and medical conditions and that the lack of medically necessary oral healthcare heightens the risk of costly medical complications. The Committee appreciates NIH’s support for research that has demonstrated that dental care is closely linked to and crucial to the clinical success of other covered medical services. The Committee urges NIH to fund additional research in this area and conduct trials to determine which oral care interventions are most effective for improving medical management and reducing the prevalence of malignant oral cancers, preventing pneumonia in hospitals, and lowering hospitalization and emergency department admission rates for non-traumatic oral conditions.

Dental, Oral and Craniofacial Tissue Regeneration Consortium.—
The Committee commends NIDCR for establishing a multidisciplinary Dental, Oral and Craniofacial Tissue Regeneration Consortium [DOCTRC] that will develop effective clinically-applicable strategies for regeneration of functional tissues of the human dental, oral and craniofacial complex. The goal of DOCTRC is to develop technologies based on cells, biologics, devices, combination products and associated protocols ready for the initiation of clinical trials and to prepare them for submission for FDA approval.

Oral Health in America Report.—The Committee commends NIDCR for publishing its 2021 report Oral Health in America: Advances and Challenges documenting 20 years of progress since the first Oral Health Report in 2000. The Committee encourages NIDCR to prioritize funding the research gaps that were identified in the report.

Temporomandibular Disorders [TMD].—The Committee encourages NIDCR to maintain a patient-centered approach in the implementation of the TMD–IMPACT Concept. The Committee is encouraged by NIDCR’s collaboration with agencies and institutes, and encourages further collaboration with other government agencies and Institutes, Centers, and Offices within NIH with appropriate scientific expertise. The Committee directs NIH to provide an update within 90 days of enactment on efforts to implement the next phase of the initiative including the recruitment of other NIH
ICs as partners, the role of the patient perspective, and NIDCR's use of the National Academies of Sciences, Engineering, and Medicine [NASEM] Report on TMDs and the TMJ Patient-led Roundtable.

NATIONAL INSTITUTE OF DIABETES AND DIGESTIVE AND KIDNEY DISEASES

Appropriations, 2023 ................................................................. $2,300,721,000
Budget estimate, 2024 ............................................................ 2,303,098,000
Committee recommendation ...................................................... 2,310,721,000

The Committee recommendation includes $2,310,721,000 for the National Institute of Diabetes and Digestive and Kidney Diseases [NIDDK].

Diabetes.—The Committee commends the efforts of NIDDK to prioritize the discovery and validation of biomarkers and urges NIDDK to continue to prioritize this important work that will accelerate the designing and conducting of clinical trials to prevent, treat, and cure type 1 diabetes. Given the growing prevalence of diabetes, the Committee provides an additional $10,000,000 for diabetes related research. The Committee is concerned that additional research is needed to determine how to improve the treatment of a common complication, diabetic foot ulcers to reduce amputations, and urges NIDDK to support such efforts. Further, given the aging population, the Committee urges NIDDK to work with the National Institute on Aging to explore the relationship between diabetes and neurocognitive conditions, such as dementia and Alzheimer’s disease in racially and ethnically diverse populations.

Hepatitis B.—The Committee applauds NIDDK efforts to create common resource services and materials for the research community and urges continued focus on clinical networks, data bank development and precision medicine approaches. The Committee further encourages the development of experimental animal and cell culture models to help advance cure research against the widest possible set of therapeutic targets and research focused on understanding the virology and immunology of people with low levels of HBsAg—a protein on the surface of the HBV virus—as this category of people are more responsive to therapy. The Committee is aware of the view within the scientific community that finding a cure for hepatitis B, as has been achieved for hepatitis C, is a winnable goal and is within reach in the near-term.

Kidney Transplant Disparities.—The Committee appreciates the ongoing efforts of NIDDK’s Health Disparities and Health Equity Working Group, particularly on disparities in the prevention, diagnosis, and treatment of kidney diseases through new studies to address disparities in kidney transplant care. The Committee reaffirms the importance of reducing health disparities and urges NIDDK to support health disparities research to improve kidney transplant care. The Committee requests an update on these efforts in the fiscal year 2025 CJ.

Lower Urinary Tract Symptoms.—Lower urinary tract symptoms [LUTS] describe symptoms related to the storage and voiding of urine. Conditions associated with LUTS include overactive bladder, stress urinary incontinence, as well as neurogenic and non-neurogenic voiding dysfunction. The effectiveness of treatment for these
conditions varies depending on patient characteristics and symptoms. Unfortunately, an established repository of patient phenotypes for LUTS does not exist. Knowledge in this area would enable the identification of symptom clusters to advance LUTS treatment. Therefore, the Committee urges NIDDK to conduct a workshop that will lead to the development of LUTS precision medicine approaches, including the characterization of LUTS clusters and their association to treatment responsiveness, identification of markers for phenotype clusters, development of functional and physiologic assessment measures specific to individual phenotype profiles to objectively correlate symptoms and treatment outcomes. The Committee requests an update on research activities to advance LUTS prevention and treatment in the fiscal year 2025 CJ.

Pancreatitis.—The Committee applauds NIDDK for featuring research into pancreatitis and conditions of the pancreas prominently through the 2023 Recent Advances and Emerging Opportunities report. Due to the lack of effective treatment options for patients impacted by pancreatitis and a variety of access challenges, NIDDK is encouraged to facilitate additional scientific progress in this important area.

NATIONAL INSTITUTE OF NEUROLOGICAL DISORDERS AND STROKE

Appropriations, 2023 ................................................................. $2,813,925,000
Budget estimate, 2024 .............................................................. 2,739,418,000
Committee recommendation ..................................................... 2,849,925,000

The Committee recommendation includes $2,849,925,000 for the National Institute of Neurological Disorders and Stroke [NINDS].

Alzheimer's Disease and Alzheimer's Disease-Related Dementias [AD/ADRD].—The Committee includes an increase of $100,000,000 across NIH for AD/ADRD research, including an increase of $10,000,000 in NINDS and $90,000,000 in NIA.

Brain Aneurysms.—The Committee remains concerned that an estimated 1 out of every 50 individuals in the United States has a brain aneurysm and an estimated 30,000 Americans suffer a brain aneurysm rupture each year, with little or no warning. Ruptured brain aneurysms are fatal in about 50 percent of cases. Despite the widespread prevalence of this condition and the high societal cost it imposes on our Nation, the Federal Government only spends approximately $2.08 per year on brain aneurysm research for each person afflicted with a brain aneurysm. The Committee encourages NINDS to increase its support for research focused on prevention and early detection of brain aneurysms.

Frontotemporal Degeneration [FTD].—The Committee encourages NIH to continue to support research to identify and validate biomarkers for FTD and other neurodegenerative diseases among racially and ethnically diverse cohorts. The Committee also urges NIH to support efforts to better understand the social determinants of health that lead to inequity in access to diagnosis and care for FTD and other dementias so that new treatments and best practices in care will be available to all, regardless of age, racial, ethnic, cultural, socioeconomic and geographic background. Equally critical is the development of a data biosphere that enhances secure sharing of clinical and research data and biological samples for FTD. Broad sharing of datasets will enable the larger commu-
nity of researchers to bring their expertise to bear on the challenge of treating and preventing FTD and other ADRDs. The Committee also encourages NIH to find ways to support more effective communication across researchers, and between clinical science and broader society, to ensure that the research advances driven by NIH can have maximum effect on improving health. FTD is rare and tends to occur at a younger age than other forms of dementia. This creates additional challenges for clinical trials and research. To overcome these challenges as well as recruitment and retention issues, the Committee urges NIH to continue to advance regulatory science and develop innovative clinical trial designs that recruit diverse populations so that potential therapies can be effectively tested.

**Opioids, Stimulants, and Pain Management.**—The Committee provides no less than $290,295,000, an increase of $10,000,000, in NINDS for the HEAL Initiative. The Committee encourages NINDS to continue its efforts through the HEAL Initiative, with a focus on grant opportunities to support research and education for effective and non-addictive pain management to improve outcomes for people with pain in diverse settings across the United States.

**Pediatric-Onset Epilepsies Research.**—The Committee is aware of the enormous economic cost and toll in human suffering resulting from epilepsies and considers research in this area a high priority. While there are approximately 470,000 children currently living with epilepsy, there are many different kinds of epilepsies, and the number of children with one specific disease type is relatively small. A number of these types of epilepsy do not respond to existing medications. To develop and test more effective therapies, studies must precisely classify children with the same type of epilepsy for clinical trials. Large numbers of patients are critical to ensuring that study results are meaningful and result in improved patient outcomes. Using a collaborative research model and enrolling patients from many hospitals in the same system greatly increases the ability to detect meaningful differences due to interventions, can significantly accelerate therapy development, and expedites translation of research findings into standard clinical care. Therefore, the Committee encourages NIH to continue to enable cooperative research studies, accelerate the development of knowledge about epilepsies, and rapidly advance therapeutic options and their implementation to improve treatments and healthcare outcomes. Additionally, to better facilitate implementation of translational research, the Committee urges NINDS to prepare and submit a report to the Committee on progress and incorporate key findings and planned actions resulting from convenings of the Curing the Epilepsies conference.

**Undiagnosed Diseases Network (UDN).**—The Committee continues to provide $18,000,000 to fund UDN and directs the continuation of the coordinating center, all clinical sites, DNA sequencing core, central biorepository, model organisms screening center, and other necessary testing in the pursuit of diagnoses, including but not limited to: metabolomics, infectious and toxic exposures, and immune abnormalities.
The Committee recommendation includes $6,562,279,000 for the National Institute of Allergy and Infectious Diseases (NIAID).

Celiac Disease.—The Committee commends NIH for issuing a Notice of Special Interest to spur additional research on the study of celiac disease. Today, the only known treatment is a gluten-free diet; however, recent public and private sector research confirms that such a “treatment” is insufficient for many who suffer from celiac disease. The Committee encourages NIH to devote focused research on the study of celiac disease and continues to urge NIH to: support new research on celiac disease; better coordinate existing research; and focus new research efforts toward causation, diagnosis, management, treatment, and, ultimately, a cure of this disease. The Committee directs NIH to include updates on research, projects, and programs for celiac disease in the fiscal year 2025 CJ.

Centers for Research on Emerging Infectious Diseases (CREID).—NIAID works with partners in 30 countries to understand how and where viruses can emerge to develop diagnostic tests. The Committee urges NIAID to ensure the CREID Network is sufficiently supported to coordinate and conduct research on, and active surveillance for, emerging pathogens.

Equipping NIH Research Programs to Target HIV/AIDS Hotspots.—The Committee directs the NIH Office of AIDS Research to coordinate NIH-wide resources to focus on areas with the highest prevalence of HIV/AIDS, for example, utilizing Centers for AIDS Research (CFARs) to develop targeted interventions that increase the use of pre-exposure prophylaxis (PrEP) and better protect those communities from HIV transmission and its consequences.

Food Allergies.—The Committee recognizes the serious issue of food allergies which affect approximately 8 percent of children and 10 percent of adults in the United States. The Committee commends the ongoing work of NIAID in supporting a total of 17 clinical sites for this critical research, including seven sites as part of the Consortium for Food Allergy Research (CoFAR). The Committee encourages CoFAR to expand its clinical research network, identify new research centers, and conduct new, larger, and in-depth clinical trials and observational studies.

Gonorrhea.—The Committee continues to be concerned with recent reports from the World Health Organization (WHO) and U.S. public health officials, that antimicrobial resistant gonorrhea continues to increase, reducing the treatment options. The Committee commends NIAID for their continued efforts to develop new antibiotics to combat the bacterium that causes this disease and encourages NIAID to accelerate work to find new diagnostic tools and treatments for these new strains of bacterium.

Hepatitis B.—The Committee applauds NIAID for leading the effort to update the Strategic Plan for Trans-NIH Research to Cure Hepatitis B, so it remains a robust road map to find a cure. The Committee is aware of the widely held view in the scientific com-
munity that finding a cure for hepatitis B, as has now been achieved for hepatitis C, is a winnable goal and is within reach in the near-term. For these reasons, the Committee urges that research, based on the needs as identified in the updated Plan, be funded in fiscal year 2024 and beyond. The Committee urges NIAID to expand the use of Program Projects, R01 and U01 Cooperative Research Agreements, as was successfully used to discover cures for hepatitis C, as well as cooperative research programs modeled after the Martin Delaney Collaborations and applauds the success of the point of Care Technologies Research Network [POCTRN] and Rapid Acceleration of Diagnostics [RADx] programs and urges more use of these programs for development of point of care tests for HBV, HDV and the cancers caused by these viruses. Finally, the Committee understands that research to enhance the human immune system to control and cure hepatitis B is promising and the continued use of animal models is a research tool that needs to be continued.

Metabolism of Infectious Disease.—The Committee recognizes that research to understand how metabolic responses are altered by infection and connected with the immune response and comorbidities is increasingly important due to the prevalence of emerging and reemerging infectious diseases. As such, the Committee urges NIAID to fund as many meritorious proposals as possible.

Neglected Disease Research.—The Committee strongly supports NIAID’s neglected disease research programs. NIH is the world’s single largest funder of neglected disease research and has supported the development of high-impact technologies for health areas that receive little attention from industry. Many innovation gaps persist, and so these programs should remain a priority for NIAID leadership.

Regional Biocontainment Laboratories [RBLs].—The Committee continues to provide $52,000,000 to the 12 RBLs to support core and shared resources for BSL–3 containment enabling them to develop and maintain the research resources, facilities and personnel needed to meet national, regional and local biodefense and emerging infectious diseases research needs in the event of a bioterrorism or infectious disease emergency. Of this amount, the Committee directs that no less than $1,000,000 shall be provided to each of the 12 RBLs to support training and maintaining a capable research workforce with broad, relevant biomedical, technological, veterinary, and regulatory expertise, developing and contributing to an organizational structure to ensure the RBL network is prepared to respond effectively to national needs, and supporting operations, facilities, and equipment purchase costs. The Committee directs that the remaining funding shall go to the 12 RBLs to support: (1) research on biodefense, emerging infectious disease agents, and other infectious disease threats to global health; (2) training new researchers, including in biosafety level 3 practices; (3) maintaining a workforce skilled in BSL–3 research; and (4) establishing best practices for the safe, effective, and efficient conduct of research in BSL–3 facilities.

Research on Antimicrobial Resistance [AMR].—The Committee provides no less than $565,000,000 to fund NIAID research to com-
bat AMR and the training of new investigators to improve AMR research capacity as outlined in the 2020–2025 National Action Plan to Combat Antibiotic Resistant Bacteria.

*Syphilis.*—The Committee continues to be concerned with the rising syphilis rates, and correlation with the syphilis increase in women of childbearing age, which often leads to congenital syphilis. The Committee commends NIAID for their continued work in developing new diagnostic tests for both adults and newborns and encourages acceleration of vaccine development and new treatment options.

*Universal Flu Vaccine.*—The Committee includes $270,000,000 to support efforts to develop universal influenza vaccines that provides long-lasting protection against numerous flu strains, rather than a select few. Such vaccines would eliminate the need to update and administer the seasonal flu vaccine each year or could provide protection against newly emerging flu strains, potentially including those that could cause a flu pandemic.

*Viral Pathogen Research.*—The Committee supports investments in research on highly pathogenic zoonotic viruses with pandemic potential including filoviruses, flaviviruses, paramyxoviruses, and bunyaviruses. The Committee notes that research on high consequence zoonotic viruses requires high-containment BSL–4 labs. High-containment BSL–4 labs enable researchers to diagnose and investigate these types of pathogens, and develop rapid and reliable diagnostics, novel antiviral therapeutics and vaccines, without endangering the staff or population at large. Additional investments in BSL–4 infrastructure for research in highly pathogenic zoonotic viruses is critical.

*Warm Autoimmune Hemolytic Anemia* \( [wAIHA] \).—The Committee recognizes that wAIHA is a prototypical autoimmune disorder where the body’s immune system attacks healthy red blood cells and little is known about underlying causes or effective treatment beyond the use of immunosuppressive therapies. NIH is encouraged to advance wAIHA research and to consider key partnerships among Institutes and Centers that have an interest in or have shown progress in this area, such as NHLBI, NIAID, and the Office of Autoimmune Disease Research \( [OADR] \).

**NATIONAL INSTITUTE OF GENERAL MEDICAL SCIENCES**

Appropriations, 2023 .......................................................... $3,239,679,000
Budget estimate, 2024 .......................................................... 3,239,679,000
Committee recommendation .................................................. 3,239,679,000

The Committee recommendation includes $3,239,679,000 for the National Institute of General Medical Sciences \( [NIGMS] \), which includes $1,412,482,000 in transfers available under 241 of the PHS Act (Public Law 104–73 as amended).

*Increasing Diversity in Biomedical Research.*—The Committee strongly supports opportunities for the Nation’s next generation of researchers and efforts to enhance diversity in biomedical research. Early-stage researchers, particularly women and racial and ethnic minorities, spend longer periods of time in postdoctoral positions with lower salaries, receive inadequate mentorship, and are offered fewer opportunities for professional advancement, resulting in lower retention rates for those groups. Even with these obstacles,
many early-stage researchers tackle riskier projects and have contributed to research that has generated positive outcomes for the benefit of society. Grant programs offering support and opportunities for researchers at key career transition points requiring little or no preliminary data, are critical to ensuring innovative scientists from diverse backgrounds succeed in biomedical research. The Committee urges NIGMS to expand the Maximizing Opportunities for Scientific and Academic Independent Careers [MOSAIC] program and the Minority Access to Research Careers undergraduate programs that train the next generation of scientists while enhancing the diversity of the biomedical research workforce and enabling promising scientists to pursue high-risk, high-reward research.

Institutional Development Award [IDeA].—The Committee recognizes the importance of the IDeA program in enhancing geographical representation across NIH’s research portfolio, and provides no less than $425,956,000 for the program. In order to ensure that research investments from IDeA programs provide maximum benefit, the Committee urges NIH to examine ways to increase NIH IDeA state participation in major grant programs across NIH’s portfolio, including those that support biomedical research facilities, instrumentation, and training. The Committee notes the Biomedical Research Workforce Working Group report and supports growing the IDeA funding level to its minimum recommended level, which will allow NIH to take advantage of the full diversity of the Nation’s assets: diversity of individuals, diversity of institutions, and diversity of geography. Finally, the Committee opposes any efforts within NIH to change eligibility for the IDeA program to a system that would be based on States’ populations or to limit the number of awards per State. Currently eligible States have historically had low aggregate success rates for grant applications to NIH and rely on the IDeA program to help build a research infrastructure and enhance research capacity at institutions in those States.

Minority Serving Institutions.—Congress recognizes the importance of highly trained physician-scientists to serve diverse communities, decrease health disparities, and enhance the biomedical research workforce. The Committee encourages NIGMS to support medical scientist training at Minority Serving Institutions as defined in title III of the Higher Education Act. Such efforts should support dual degree programs that train students in medicine and biomedical research.

EUNICE KENNEDY SHRIVER NATIONAL INSTITUTE OF CHILD HEALTH AND HUMAN DEVELOPMENT

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The Committee recommendation includes $1,759,078,000 for the Eunice Kennedy Shriver National Institute of Child Health and Human Development [NICHD].

Andrological Health.—The Committee strongly supports translational and clinical research into andrological health, and urges NICHD to prioritize and expand these research programs.
Autism Research.—The Committee encourages NICHD to increase support for and prioritization of collaborations to build the methodological base and infrastructure for large scale longitudinal neuroimaging studies of autistic individuals with linkages to clinical data and outcomes. Projects supported by this investment could include proof of concept multicenter approaches to address major challenges for collaborative groups, such as linking longitudinal neuroimaging data with measures of behavioral change and outcomes, including information from clinical records, and to aggregate the resulting information into usable datasets that are harmonized across study sites and clinical centers. The Committee further encourages NICHD to support studies that allow for data to be collected across wide ranges in age.

Congenital Syphilis [CS].—The Committee continues to be concerned with the continued rise in the rates of congenital syphilis. CS can lead to life-long deformities and disabilities, but with preventative care and treatment, these outcomes can be avoided. The Committee encourages NICHD to coordinate efforts with NIAID on new testing, diagnosis, and treatment efforts.

Endometriosis.—The Committee is aware that endometriosis is a chronic disease originating in the female reproductive system affecting 10 percent of women of reproductive age worldwide and it has been linked to ovarian cancer. The Committee also recognizes that endometriosis is the third-leading cause of female infertility in the United States. The Committee encourages NIH to advance research to increase earlier detection, develop more accurate diagnostics and for education to inform healthcare providers and their patients regarding diagnosis and treatment of endometriosis.

Implementing a Maternal Health and Pregnancy Outcomes Vision for Everyone [IMPROVE] Initiative.—The Committee provides no less than $53,400,000 for this activity.

Maternal Fetal Medicine Units.—The Committee appreciates NICHD’s continued support of research focused on improving maternal and infant health outcomes. A critical part of this work is the Maternal-Fetal Medicine Units Network [MFMU]. Since 1986, the MFMU Network has been performing multi-site clinical research focused on gathering data needed to ensure obstetric patients across the country and the world are receiving evidence-based and cost effective care. The Committee was pleased to see NICHD release a request for applications in 2022 for a new funding cycle for the MFMU Network that maintains the Network’s existing infrastructure, ensuring high-quality, high-impact multi-site clinical studies continue. However, unlike the prior funding cycles, clinical study proposals for the MFMU Network will now undergo NIH peer review to assure greater rigor and transparency. In addition, the Network infrastructure will now be made available to the entire community of researchers. The Committee requests an update in the fiscal year 2025 CJ on the total funding for MFMU Network supported clinical trials awarded in each of fiscal years 2010—2022. This update should detail amounts spent on clinical trials and separately account for base funding for the MFMU Network clinical sites and data coordinating center. Further, NICHD should include in the update plans to ensure that NIH will con-
continue to fund clinical research conducted by the MFMU at the appropriate levels based on scientific need.

**Pelvic Organ Prolapse.**—Pelvic organ prolapse [POP] occurs when the pelvic floor muscles and connective tissue supporting the pelvic organs no longer support these organs, causing one or more of the pelvic organs to fall downward into the vagina. POP is a common problem, with 1 out of 8 women undergoing surgery for prolapse at some point in their life. Symptomatic POP is associated with urinary incontinence, depression, anxiety, sleep disturbance, sexual dysfunction, deteriorating physical function and diminished socialization. No effective preventative strategies for POP have been identified and the development of novel preventative strategies related to pregnancy is needed. Therefore, the Committee urges the NICHD to convene a workshop to assess peripartum, intrapartum, and postpartum preventative strategies for POP including ways to decrease pelvic floor trauma/denervation during delivery, with the goal of reducing the risk of subsequent POP and its complications. The Committee requests an update on this issue and on research activities to advance POP prevention and treatment in the fiscal year 2025 CJ.

**Population Research.**—The Committee commends NICHD for fulfilling its statutory authority by supporting a robust population research portfolio that includes population representative longitudinal surveys, research centers and networks, training programs, and grant mechanisms. Over the decades, these investments have yielded numerous scientific advances regarding the causes and consequences of population change on human and child development, maternal health, and the health and well-being of individuals across the life course. Most recently, the Baby’s First Years Study and Panel Study of Income Dynamics Child Supplement Survey provided key insights into the impact of COVID mitigation strategies and economic relief measures on infant and child development. The Committee encourages NICHD to enhance its support of these and its other large-scale longitudinal surveys to help, among other things, elucidate the pandemic’s impacts on child and adolescent development. In addition, the Committee commends NICHD for supporting initiatives that facilitate collaborations and resource sharing between the Population Dynamics Research Centers and outside institutions and for funding the innovative Data Sharing for Demographic Research data repository, which makes high-quality demographic data widely available to the scientific research community.

**Reproductive Medicine Network [RMN].**—Infertility, defined as the inability to conceive within 1 year of unprotected intercourse, affects an estimated 19 percent of reproductive aged couples. In addition, about 26 percent of women have difficulty getting pregnant or carrying a pregnancy to term. The RMN, which has since been replaced by the Consortia for Infertility and Reproductive Medicine [ConFIRM] Clinical Trial Program of linked R01s, had a proven track record of supporting infertility research by providing a single hub that supported multiple substudies and secondary analyses. Most importantly, it informed major changes to clinical practice and supported the training of young investigators in the field. While the Committee understands that NICHD has moved away
from the U01/U10 mechanism the RMN utilized, it is noted that the ConFIRM Clinical Trial Program may not be supporting coordination or a pipeline of young investigators in this field in the same manner as the RMN. The Committee urges NICHD to report on its plans to support clinical trials on infertility within 180 days of enactment.

Women’s Reproductive Health Research [WRHR] Program.—The Committee encourages NICHD to fund additional scholars, with the goal of increasing the diversity of the scholars, sites, and research supported by the program. The Committee recognizes the effectiveness of the WRHR program, which provides an opportunity for obstetrician/gynecologists who recently completed postgraduate clinical training to further their training in basic, translational and clinical research.

Youth Tobacco Cessation Research.—The Committee recognizes that despite two million youth using at least one tobacco product, there are no FDA-approved tobacco cessation therapies for people ages 17 and under and few well-studied, evidence-based behavioral interventions for youth tobacco use. The Committee encourages NIH to continue to support research on effective tobacco cessation modalities for youth under age 18, including pediatric studies of the safety and effectiveness of cessation treatments currently approved for adults. Studies should account for the broad range of tobacco products used by youth, including cessation options for individuals interested in quitting cigarettes, e-cigarettes, smokeless tobacco, and cigars. The Committee urges NIH to consider research recommendations published by the U.S. Preventive Services Task Force.

NATIONAL EYE INSTITUTE

Appropriations, 2023 .............................................................. $896,549,000
Budget estimate, 2024 ............................................................ 896,136,000
Committee recommendation .................................................... 896,549,000

The Committee recommendation includes $896,549,000 for the National Eye Institute [NEI].

Usher Syndrome.—The Committee encourages NIH to enhance and prioritize Usher syndrome research at NEI. The Committee requests an update in the fiscal year 2025 CJ. The update should include efforts to stimulate the field and to accelerate viable human treatment options for those with Usher syndrome.

NATIONAL INSTITUTE OF ENVIRONMENTAL HEALTH SCIENCES

Appropriations, 2023 .............................................................. $913,979,000
Budget estimate, 2024 ............................................................ 938,807,000
Committee recommendation .................................................... 913,979,000

The Committee recommendation includes $913,979,000 for the National Institute of Environmental Health Sciences [NIEHS].

Disaster Research Response Program.—The Committee urges NIEHS to support research and community engagement activities related to the health of individuals affected by the train derailment in East Palestine, Ohio, including first responders and local residents in both Ohio and Pennsylvania.

Environmental-related Health Conditions.—The Committee urges NIEHS to expand efforts to support and coordinate research on the
rise in and exacerbation of a wide range of health conditions related to the environment, which may include infectious disease, injury and trauma, chronic conditions such as asthma, mental health, and health disparities. Such research may include evaluation of both preventative and intervention strategies for such conditions.

**Environmental exposures and Cancer in Firefighters.**—The Committee encourages NIH and CDC/NIOSH to continue their efforts to better understand the cancer risks firefighters may experience, including efforts to measure environmental exposures in firefighters and determine the mechanisms that lead to increased cancer incidence, morbidity, and mortality. The Committee also encourages NIH to continue to support research to improve health equity among firefighters to evaluate potential differences and exposure risk.

**Indoor Air.**—Health outcomes from the use of combustion indoors depend on individual health characteristics, the fuel used, and mitigations. The Committee encourages NIEHS to research and collaborate with appropriate partners to understand effects of indoor emissions on health and the degree to which mitigation strategies reduce exposures and other impacts. Research should include the impacts of other indoor pollutants to fully understand the indoor air landscape. The Committee requests an update on these activities in the fiscal year 2025 CJ.

**NATIONAL INSTITUTE ON AGING**

Appropriations, 2023 ................................................................. $4,407,623,000
Budget estimate, 2024 .............................................................. 4,412,090,000
Committee recommendation ..................................................... 4,509,623,000

The Committee recommendation includes $4,509,623,000 for the National Institute on Aging [NIA].

**Alzheimer's Disease/Alzheimer's Disease-Related Dementias [AD/ADRD].**—Since fiscal year 2015, Congress has increased research funding for AD/ADRD by more than 500 percent, making it the largest expenditure of its kind in NIH. By 2050, the cost to treat and care for those suffering from Alzheimer’s disease is expected to rise to as high as $1,100,000,000,000 a year. Without a medical breakthrough to prevent, slow, or stop the disease, Medicare- and Medicaid-related costs could rise more than four-fold. NIH-funded research offers hope for finding solutions to manage this disease successfully in the future. Therefore, the Committee continues to support Alzheimer’s disease research, including multi-disciplinary approaches into the basic science and pathology of the disease, which builds upon the funding goals needed to prevent and effectively treat Alzheimer’s by 2025 identified in the National Plan required by the National Alzheimer’s Project Act (Public Law 111–375). The Committee previously directed NIA to collaborate with NINDS and NASEM to pinpoint research priorities for preventing and treating AD/ADRD, including identifying barriers to advancing large-scale precision medicine approaches in this space. Of the approximately 6.5 million Americans over age 65 with AD, more than half have genetic risk variants linked to glial cell function, which makes them a key target for precision therapeutics. The Committee encourages NIA to increase support for research focused on miti-
gating immune dysfunction with precision inspired therapeutics for AD/ADRD and directs NIA and NINDS to provide a joint report to the Committee within 120 days on its progress in advancing these efforts.

Clinical Trials.—Although Alzheimer’s disease and other dementias disproportionately affect Black Americans, Hispanic Americans, Asian American and Pacific Islanders, and Native Americans, they continue to be underrepresented in AD/ADRD clinical trials. The Committee directs NIA to work with the Alzheimer’s Disease Research Centers and other organizations to promote participation in clinical trials within underrepresented populations and, to the maximum scientifically-feasible extent, reduce the burden of participating. These efforts should include expanding community engagement and outreach to these populations, incentivizing trial locations in areas of unmet need, encouraging the diversity of clinical trial staff, allowing appropriate flexibility in trial design and inclusion and exclusion criteria, and utilizing technology like remote patient monitoring, where appropriate, to facilitate clinical trial participation and retention.

Geroscience.—Recent advances in geroscience suggest it may be possible to prevent or treat a wide range of adult-onset health concerns, including functional declines such as frailty and lost resilience, and overt diseases such as Alzheimer’s Disease, cancer, cardiovascular diseases and many others. This could be achieved by slowing or reversing certain genetic, molecular and cellular hallmarks of aging discovered through research on the basic biology of aging. The Committee strongly urges NIA to prioritize funding for geroscience research. The Committee also understands that the enormous promise of this field is limited by a shortage of investigators with expertise in the biology of aging and the clinical translation of basic research findings. Therefore, NIA should increase support for early career investigators, especially postdoctoral researchers and junior faculty, to help attract, retain, and develop top talent in the field of geroscience. Finally, the Committee encourages NIA to increase funding for basic and translational research in aging to provide more options and test more treatments as quickly as possible.

Palliative Care Research.—Palliative care is specialized medical care for people living with a serious illness and is focused on treating the discomfort, symptoms, and stress of such illness. Palliative care has the potential to improve patient care, patient-clinician communication, and patient-centered outcomes while decreasing unwanted and/or burdensome treatments and enhancing quality of life for people with serious illness, their loved ones, and their care partners. The Committee provides $12,500,000 for NIA to implement a trans-Institute, multi-disease strategy to focus, expand, and intensify national research programs in palliative care. NIH is directed to establish a comprehensive multi-Institute and multi-Center initiative aimed at a wide variety of palliative care research, training, dissemination, and implementation of projects to intensify the strategic coordination of palliative care research efforts. Funding is provided to establish an extramural-based palliative care research consortium with no less than three sites to provide technical assistance, pilot and exploratory grant funding, research dissemi-
nation, data repositories, data analytics, and career development support for interdisciplinary palliative care. NIH shall prioritize grantees with a recognized expertise and leadership in palliative care. The Committee encourages NIH to fund several multi-year, early-career development grants modeled after NIA's GEMSSTAR program. Appropriations provided in fiscal year 2024 for training are expected to cover 2 years of funding for career development awards. The Committee requests a briefing within 120 days of enactment on how this strategy will be established and implemented, including timelines on when funding opportunities will be issued and when funding will be awarded.

Population Research.—NIA supports a rigorous population aging research portfolio that includes research grants, centers, networks, and population representative longitudinal surveys examining how demographic, social, and economic factors impact the health and well-being of older adults over the life course. The Committee is pleased to learn that in fiscal year 2024 NIA will be renewing several transdisciplinary research networks devoted to studying issues such as rural aging, psychosocial stress measurement, and social genomics. The Committee encourages the NIA to stimulate additional research projects addressing high priority areas such as rising midlife mortality rates, socioeconomic disparities, and the unique impacts of climate change on older individuals. Further, the Committee urges the Institute to explore how multidisciplinary nationally representative studies, such as the Health and Retirement Study, can improve the representation of Asian American sub-populations.

NATIONAL INSTITUTE OF ARTHRITIS AND MUSCULOSKELETAL AND SKIN DISEASES

Appropriations, 2023 ................................................................. $685,465,000
Budget estimate, 2024 .............................................................. 687,639,000
Committee recommendation ..................................................... 685,465,000

The Committee recommendation includes $685,465,000 for the National Institute of Arthritis and Musculoskeletal and Skin Diseases [NIAMS].

Musculoskeletal Regenerative Medicine.—The Committee recognizes the increasingly fundamental role that extracellular vesicles [EVs] play as a mechanism of communication between cells, organs, organ systems, and organisms in providing a snapshot of a wide range of disease processes including musculoskeletal disorders. The Committee also understands that the field of regenerative medicine is in the early stage of exploring the potential of EVs to help treat patients, including veterans, living with significant musculoskeletal injuries such as osteoarthritis, tendon, and ligament diseases. The Committee therefore encourages support for research to optimize regenerative medicine through analyzing EVs and other approaches through partnerships that bring together scholars, creators, and entrepreneurs to work in a collaborative space to discover and deliver solutions that utilize the body's healing capacity to improve the lives of those living with musculoskeletal disorders.

Thalassemia.—Individuals with thalassemia frequently develop low bone mass issues, often several decades earlier than is typical
in the general population. Most currently recognized treatment options for low bone mass issues have been developed for populations that develop these issues at an older age than in thalassemia, and which may not have the same characteristics as those with thalassemia. More research in treatments for and prevention of low bone mass for this population may be warranted.

NATIONAL INSTITUTE OF DEAFNESS AND OTHER COMMUNICATION DISORDERS

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The Committee recommendation includes $534,333,000 for the National Institute of Deafness and Other Communication Disorders [NIDCD].

NATIONAL INSTITUTE OF NURSING RESEARCH

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The Committee recommendation includes $197,693,000 for the National Institute of Nursing Research [NINR].

Health Disparities Research.—The Committee continues to provide $10,000,000 for NINR to support research related to identifying and reducing health disparities.

NATIONAL INSTITUTE ON ALCOHOL ABUSE AND ALCOHOLISM

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The Committee recommendation includes $595,318,000 for the National Institute on Alcohol Abuse and Alcoholism [NIAAA].

Alcohol and Polysubstance Use.—The Committee is pleased to see NIH supporting research on alcohol and polysubstance use, and urges NIH to increase research in this area through more comprehensive centers across the United States. The Committee is concerned by the high rates of alcohol misuse and alcohol-related morbidity and mortality in the United States, particularly in Indigenous, frontier, and rural communities. The Committee encourages NIH to support studies, and form multi-tier prevention programs for R1 Research Centers, that focus on rural and minority communities with high rates of alcohol and polysubstance use mortality. These centers could develop, test, and implement prevention programming to reduce alcohol misuse, including through social media as well as web-based and mobile applications. These programs could also train community health providers in delivering person-centered brief interventions to help reduce alcohol misuse and alcohol-related harms.

NATIONAL INSTITUTE ON DRUG ABUSE

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The Committee recommendation includes $1,672,695,000 for the National Institute on Drug Abuse (NIDA).

**Barriers to Research.**—The Committee is concerned that restrictions associated with Schedule I of the Controlled Substances Act effectively limits the amount and type of research that can be conducted on certain Schedule I drugs, especially opioids, psychedelics, marijuana or its component chemicals, and new synthetic drugs and analogs. At a time when we need as much information as possible about these drugs and antidotes for their harmful effects, we should be addressing regulatory and other barriers to conducting this research. The Committee appreciates NIDA’s completion of a report on the barriers to research that result from the classification of drugs and compounds as Schedule I substances including the challenges researchers face as a result of limited access to sources of marijuana, including dispensary products.

**Cocaine.**—The Committee remains concerned about the drug addiction public health crisis and the surge in overdose deaths involving stimulants, including cocaine. The Committee recognizes that NIDA is prioritizing research and development of treatments which can rapidly reverse cocaine toxicity and reduce mortality rates, addressing the severe gap in this unmet medical need. Due to the unavailability of an FDA-approved cocaine overdose reversal medication, the Committee encourages NIDA to continue prioritization of additional research and development to advance a life-saving treatment for overdoses caused by cocaine.

**Investments in Basic Research.**—The Committee is aware that basic research is the foundation for clinical research, both of which pave the way to new or improved treatments for substance use disorders. Basic research can focus on the causal mechanisms underlying the functioning of the human body and provides a critical understanding of the short- and long-term impacts of drug use. The discoveries that are made through basic research can be translated directly into improved patient care, including novel medications, fewer drug-related fatalities, and science-based methods for preventing addiction. The Committee encourages NIDA’s continued investments in investigator-initiated grants in basic research and support for training of young investigators to ensure a healthy and growing population of researchers.

**Medication for Methamphetamine Use Disorder.**—The Committee is concerned with the rise in methamphetamine use and addiction in the United States. While there are currently approved medication treatments for alcohol and opioid addiction there remains no approved medication for methamphetamine addiction. The Committee urges the Institute to continue their ongoing trials in order to expeditiously find and approve a medication for methamphetamine.

**Methamphetamine and Other Stimulants.**—The Committee is concerned that, according to predicted provisional data released by CDC, overdose deaths involving drugs in the categories that include methamphetamine and cocaine increased by 41 and 40 percent respectively between 2021 and 2022. The sharp increase has led some to refer to stimulant overdoses as the “fourth wave” of the current drug addiction crisis in America following the rise of opioid-related deaths involving prescription opioids, heroin, and fentanyl.
related substances. No FDA-approved medications are available for treating methamphetamine, cocaine, and other stimulant use disorders. The Committee continues to support NIDA’s efforts to address the opioid crisis, has provided continued funding for the HEAL Initiative, and supports NIDA’s efforts to combat the growing problem of methamphetamine and other stimulant use disorders and related deaths.

**Opioid Initiative.**—The Committee continues to be concerned about the high mortality rate due to the opioid overdose epidemic and appreciates the important role that research plays in the various Federal initiatives aimed at this crisis. Approximately 174 people die each day in this country from drug overdose (over 100 of those are directly from opioids), making it one of the most common causes on non-disease-related deaths for adolescents and young adults. The Committee is also aware of increases in opioid deaths from 2020 to 2021, with the primary driver being the increased overdose deaths involving synthetic opioids, primarily fentanyl. More research is needed to find new and better agents to prevent or reverse the effects caused by this class of chemicals and to provide improved access to treatments for those with addiction to these drugs. To combat this crisis, the Committee has provided within NIDA’s budget no less than $365,295,000, an increase of $10,000,000, for the Institute’s share of the HEAL Initiative and in response to rising rates of stimulant use and overdose. The Committee encourages NIDA to support research on the development of safe and effective medications and new formulations and combinations to treat substance use disorders and prevent or reverse overdose, and to support research on comprehensive care models in communities nationwide to prevent opioid misuse, expand treatment capacity, enhance access to overdose reversal medications, and enhance prescriber practice; test interventions in justice system settings to expand the uptake of medication treatment and methods to scale up these interventions; and develop evidence-based strategies to integrate screening and treatment for opioid use disorders in emergency department and primary care settings. The Committee has included language expanding the allowable use of these funds to include research related to stimulant use and addiction.

**Overdose Analogs.**—Recognizing the increasing severity of the National opioid crisis and the need to better our options for responding to, treating, and preventing overdoses, the Committee encourages NIDA to prioritize research to expedite treatments for and prevention of overdose from fentanyl and related analogs. Grant recipients should be able to develop and advance additional treatment and overdose prevention options such as a human IgG1 monoclonal antibody specific for fentanyl and structurally related fentanyl analogs to be delivered by intravenous, subcutaneous, and/or intramuscular (i.e., auto-injection) routes of administration.

**Raising Awareness and Engaging the Medical Community in Drug Use and Addiction Prevention and Treatment.**—Education is a critical component of any effort to curb drug use and addiction, and it must target every segment of society, including healthcare providers (doctors, nurses, dentists, and pharmacists), patients, and families. Medical professionals must be in the forefront of ef-
forts to curb the opioid crisis. The Committee continues to be pleased with the NIDAMED initiative, targeting physicians-in-training, including medical students and resident physicians in primary care specialties (e.g., internal medicine, family practice, emergency medicine, and pediatrics). The Committee encourages NIDA to continue to provide clinical resources to providers to help identify and treat patients with substance use disorder.

Youth E–Cigarette Use.—The Committee understands that electronic cigarettes (e-cigarettes) and other vaporizing equipment remain popular among adolescents, and requests that NIDA continue to fund research on the use and consequences of using these devices. The Committee is pleased that NIDA continues to support the Monitoring the Future survey and Population Assessment of Tobacco and Health studies, which provide timely data on tobacco products and other drug use. Finally, with more than 4 million young people using e-cigarettes, there is a greater need for research into therapeutic options for nicotine cessation among youth who have developed addiction to nicotine. The Committee encourages NIDA to support research to develop therapies, including both pharmacologic and behavioral therapies, to combat nicotine addiction in pediatric populations.

NATIONAL INSTITUTE OF MENTAL HEALTH

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The Committee recommendation includes $2,437,843,000 for the National Institute of Mental Health [NIMH].

Autism Spectrum Disorder [ASD].—The Committee encourages NIH to support greater investment in research on autism, particularly in areas outlined in the Interagency Autism Coordinating Committee's [IACC] Strategic Plan for ASD. The Committee urges NIMH to work in close partnership with the other Institutes that serve on the IACC to provide an update on the level of research investment for each of the priority areas outlined in the IACC Strategic Plan for ASD. While significant progress has been made in the understanding of autism, large gaps remain in the ability to improve outcomes and access to services for autistic individuals across their life span. Research has shown that autistic individuals have higher rates of some co-occurring physical and mental health conditions, impacting quality of life and increasing medical utilization and costs. Additionally, there are significant unaddressed racial, ethnic, and socioeconomic health equity challenges experienced by autistic individuals across their life span and by their families. As such, the Committee encourages NIMH to work collaboratively with NIMHD to support research on the socioeconomic, racial, and ethnic health disparities associated with ASD, and to work collaboratively with other institutes including NIA, NIEHS, and NINDS to support research on the impact of neurological, social, and environmental factors leading to co-occurring health conditions.

Cost of Serious Mental Illness [SMI].—Despite increased spending on mental health services, the prevalence of SMI has grown by almost fifty percent since 2008. In response to Congressional direction included with the Consolidated Appropriations Act, 2023, NIH
developed a professional judgement budget setting the stage for near- and intermediate-term improvements in mental healthcare to address the Nation’s growing mental health crisis. The agenda outlines a 15-year vision for four independent but complementary projects that will address different needs in the prevention, diagnosis, and treatment of SMI. To develop this budget, NIMH considered input from the National Academy of Medicine Fora on Mental Health and Substance Abuse and Neuroscience; the National Advisory Mental Health Council; and NIMH-sponsored convenings over the past 3 years. The Committee urges NIMH to launch the four projects proposed under the initiative, and NIMH is directed to brief the House and Senate Committees on Appropriations on how these time-limited, goal-driven investments will accelerate emerging science and support high-risk/high-reward research.

Mental Health Research.—In recognition of the country’s unprecedented mental health crisis, the Committee provides a $100,000,000 increase for mental health research. This funding is provided to support research focused on developing targeted prevention of and treatment for mental illness. The Committee expects this funding will be used to accelerate better diagnostics, improved therapeutics and behavioral treatments, and enhanced precision of mental healthcare; develop a new Precision Psychiatry Initiative; and support studies of social media’s impact on mental health. The Committee supports NIMH efforts to launch a new depression biomarker development effort to guide treatment decisions for major depression and identify research gaps and opportunities for understanding relationships among social media behavior, social media engagement, and youth mental health. These initiatives will combine innovative physiological and behavioral methods to better predict patient prognosis and optimize treatment.

Suicide Prevention.—The Committee is concerned by alarming rates of suicide, particularly among youth between the ages of 10 and 24 year old, which climbed to the highest point in more than 20 years during the pandemic. Data show that the groups that experience higher rates of suicide or suicide attempts include veterans, people who live in rural areas, sexual and gender minorities, middle-aged adults, people of color, and Tribal populations. Suicide is complex, and multiple factors—biological, psychological, social, and environmental—play a role. The Committee encourages NIMH to direct additional attention to suicide prevention research across all of these areas, as well as the application of novel measurement techniques, statistical analysis, digital initiatives and information systems. The Committee also encourages NIMH to promote greater collaboration with other NIH Institutes and Centers supporting research in areas that can contribute to suicide prevention, including NIA, NICHD, NHGRI, NIAAA, NIDA and NINDS.

NATIONAL HUMAN GENOME RESEARCH INSTITUTE

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The Committee recommendation includes $663,200,000 for the National Human Genome Research Institute [NHGRI].
Proteomics.—The Committee recognizes the promise of research into the proteome in the study of biological systems. The ability to effectively and efficiently analyze protein patterns and their changes over time has potential to provide valuable insights into a person’s real-time state of health including identifying existing disease, understanding the biological drivers of that disease, predicting near-term health events, and guiding effective therapeutic interventions. The Committee urges NHGRI to utilize existing resources to engage with academia and domestic industry partners to expand its research into this cutting-edge field.

NATIONAL INSTITUTE OF BIOMEDICAL IMAGING AND BIOENGINEERING

Appropriations, 2023 ................................................................. $440,627,000
Budget estimate, 2024 ............................................................... 440,625,000
Committee recommendation ...................................................... 440,627,000

The Committee recommendation includes $440,627,000 for the National Institute of Biomedical Imaging and Bioengineering [NIBIB].

NATIONAL CENTER FOR COMPLEMENTARY AND INTEGRATIVE HEALTH

Appropriations, 2023 ................................................................. $170,384,000
Budget estimate, 2024 ............................................................... 170,277,000
Committee recommendation ...................................................... 170,384,000

The Committee recommendation includes $170,384,000 for the National Center for Complementary and Integrative Health [NCCIH].

Pain Management.—The Committee includes $5,000,000 to support research into non-pharmacological treatments for pain management and urges NCCIH, along with DOD and VA, to continue to support research, including comorbidities such as opioid misuse, abuse, and disorder among military personnel, veterans, and their families. The Committee urges NIH, VA, and DOD to expand research on non-pharmacological treatments for veterans and service members.

NATIONAL INSTITUTE ON MINORITY HEALTH AND HEALTH DISPARITIES

Appropriations, 2023 ................................................................. $524,395,000
Budget estimate, 2024 ............................................................... 525,138,000
Committee recommendation ...................................................... 524,395,000

The Committee recommendation includes $524,395,000 for the National Institute on Minority Health and Health Disparities [NIMHD].

Research Centers at Minority Institutions [RCMI] Program.—The Committee encourages NIMHD to continue investing in this program to provide more opportunities for health professions institutions with historical missions and precedence of serving minorities and building research infrastructure to conduct minority health and health disparities research.

Research Endowment Program.—The Committee is pleased with NIMHD’s reinvigoration of the Research Endowment Program and has provided $12,000,000 for fiscal year 2024 to implement the revitalized program. The Committee urges NIMHD to work swiftly on its implementation to expand and assist eligible institutions re-
receiving grants with this additional funding through a competitive process.

JOHN E. FOGARTY INTERNATIONAL CENTER FOR ADVANCED STUDY IN THE HEALTH SCIENCES

Appropriations, 2023 ................................................................. $95,162,000
Budget estimate, 2024 ........................................................... 95,130,000
Committee recommendation ..................................................... 95,162,000

The Committee recommendation includes $95,162,000 for the Fogarty International Center [FIC].

Fogarty International Center [FIC].—The Committee recognizes the need to support resources for FIC for its work in strengthening health research systems, training infectious disease researchers, and improving pandemic preparedness in low- and middle-income countries [LMICs]. These programs improve national and global health security and produce health interventions that can improve public health and reduce costs in low-resource settings everywhere, including in the United States. The Committee supports expanding FIC’s role in pandemic preparedness and research capacity building, including by strengthening international coordination, increasing capacity for computational modeling and outbreak analytics, and supporting research to reduce health disparities and improve implementation of health interventions in low-resource settings.

NATIONAL LIBRARY OF MEDICINE

Appropriations, 2023 ................................................................. $497,548,000
Budget estimate, 2024 ........................................................... 495,314,000
Committee recommendation ..................................................... 497,548,000

The Committee recommendation includes $497,548,000 for the National Library of Medicine [NLM].

NATIONAL CENTER FOR ADVANCING TRANSLATIONAL SCIENCES

Appropriations, 2023 ................................................................. $923,323,000
Budget estimate, 2024 ........................................................... 923,323,000
Committee recommendation ..................................................... 923,323,000

The Committee recommendation includes $923,323,000 for the National Center for Advancing Translational Sciences [NCATS].

Addressing All Rare Diseases.—The Committee directs NCATS to host a public workshop convening rare disease expert stakeholders including scientists, Federal agency representatives including FDA, patient advocacy leaders, clinicians, therapy and diagnostics developers, and regulators. Developing a therapy for conditions occurring in very small populations involves overcoming unique regulatory and research hurdles due to their small patient populations. The workshop will address current research and treatment efforts for rare diseases, including focusing on commonalities across diseases and therapeutic platforms, the outcome of which would also be applicable for rare diseases with small patient populations, and rare diseases with no path to commercialization.

Clinical and Translational Science Awards (CTSA) Program.—The Committee provides $629,560,000 for the CTSA program. The Committee once again emphasizes that allocated resources shall be used to provide additional support to CTSA hubs and further en-
hance ongoing activities. The Committee maintains its strong support for the CTSA program and reaffirms previous language preserving the size, scope, and historic mission of the CTSA program, including the direction that no competitively funded hub shall receive less than 95 percent of the resources that were provided prior to fiscal year 2022. The CTSA program has helped modernize the Nation’s approach to effective and efficient medical research and will continue to be fully supported to facilitate further scientific progress through this critical infrastructure. Finally, the CTSA program is encouraged to catalyze emerging opportunities in AI, big data, and other areas, while maintaining the commitment to critical activities, such as training the next generation of cutting-edge physician scientists.

*Collaboration with Business Incubators.*—The Committee urges NCATS to continue proactive outreach to redouble its efforts to leverage its mission by exploring opportunities or potential collaborations with business incubators that host small to midsize science, research and pharmaceutical companies that use service-based approaches to nurture and guide their member companies to success.

*National Clinical Cohort Collaborative [N3C].*—The Committee continues to support NCATS N3C’s open-science privacy-preserved data-sharing platform to accelerate biomedical research and discovery. N3C combines electronic health record data with imaging, mortality, viral genome sequences, and Medicare and Medicaid data from CMS to answer key research questions on a variety of diseases. The Committee encourages NCATS to expand use of its virtual data research infrastructure to accelerate research and cures for a variety of diseases through re-use of NCATS repositories, other NIH repositories including clinical trial data, and readily available real-world data including Federal agency data such as CMS claims data.

*Rare Disease Research.*—The Committee encourages NCATS to leverage the investments made in NCATS rare disease research to accelerate the development of new treatments for the 95 percent of rare diseases with no approved treatment, to strengthen the innovation of diagnostics to shorten the average 6.3 year-long diagnostic odyssey, and to lower the nearly $1,000,000,000,000 annual economic burden of rare diseases. The Committee urges NCATS to increase funding for rare disease research, helping to grow the newly created Division of Rare Diseases Research Innovation.

OFFICE OF THE DIRECTOR

Appropriations, 2023 ................................................................. $2,655,514,000
Budget estimate, 2024 ............................................................... 2,903,379,000
Committee recommendation ......................................................... 2,834,514,000

The Committee recommendation includes $2,834,514,000 for the Office of the Director [OD]. Within this total, $722,401,000 is provided for the Common Fund, and $12,600,000 is included for the Gabriella Miller Kids First Research Act (Public Law 113–94).

*ADRD Clinical Trial Diversity/Health Equity.*—The Committee recommends that NIH fund or conduct Black/African American-, Latino/Hispanic- and women-only research studies to better understand the underlying etiology of cognitive impairment and men-
tia in these groups that have disproportionately higher prevalence of disease.

**ALS Research, Treatments, and Expanded Access.**—The Committee continues to provide funding for ALS research to reduce the burdens of people with ALS as quickly as possible. It is crucial for people living with ALS and people diagnosed with ALS in the future, that NIH dramatically grows its ALS portfolio and the research workforce with additional grant funding and increases its focus on research that will lead to measurable changes in the lives of people living with ALS. The Committee directs NIH to handle funding of expanded access grants as authorized by the Accelerating Access to Critical Therapies [ACT] for ALS (Public Law 117–79) as separate, not competitive with, funding for other research on ALS and includes $75,000,000 for this purpose. Expanded Access Grants support scientific research utilizing data from expanded access to investigational drugs for people with ALS who are not eligible for clinical trials. The Committee requests NINDS include ALS clinics across the country in an ALS Clinical Research Network to increase capacity for research utilizing data from expanded access and other clinical research at geographically distributed sites. The Committee continues to direct NINDS and OD to brief the Committees prior to any execution of expanded access grants or programmatic funding. Once awards are announced, the Committee directs NINDS and OD to provide the Committees with an explanation of the funded grants, including a clear breakdown of what the funding is to be used for. Furthermore, after the review and awards of meritorious applications under Section 2, the Committee directs NIH to apply any unused funds to programs authorized under ACT for ALS including Section 3 public-private research partnership. Finally, if sufficient eligible applications are not received, or NINDS and OD have any reason to believe any funding should lapse, the ICs are directed to notify the Committees prior to notifications of awards. This notification shall include: (1) a detailed explanation as to why applications cannot be funded; (2) the technical assistance provided to applicants to assist them in submitting eligible grant applications; and (3) a proposed plan to award funding for other ALS research identified by the NIH ALS Strategic Priorities prior to the end of the fiscal year.

**Amyloidosis.**—The Committee urges NIH to expand its research efforts in amyloidosis, a group of rare and often fatal diseases. Amyloidosis is characterized by abnormally folded protein deposits in tissues. Federal and foundation support over the past years has given hope for successful new treatments. However more efforts are needed to accelerate research and awareness of the disease and to help patients with amyloidosis related multi-organ dysfunction. The Committee directs NIH to provide an update in the fiscal year 2025 CJ on the steps NIH has taken to expand research into the causes of amyloidosis and the measures taken to improve the diagnosis and treatment of this devastating group of diseases.

**Artificial Intelligence/Machine Learning [AI/ML].**—The Committee provides $135,000,000 to support NIH’s efforts to build capacity to leverage AI, ML and data science to accelerate the pace of biomedical innovation. The Committee supports NIH’s efforts to build AI-based analytical tools to help NIH optimize investments in
biomedical research by identifying emerging topics and predicting which ones will produce transformative breakthroughs. To build upon NIH's progress in this area, the Committee encourages NIH to continue expanding the application of AI, ML, and data science across its research portfolio, with a particular emphasis on activities that bring together research grants and the Office of Data Science [ODSS] as it implements the NIH Strategic Plan for Data Science. To increase AI, ML, and data science expertise on NIH review panels, the Committee encourages ODSS to partner with the Center for Scientific Review to increase outreach to the AI, ML, and data science community. Finally, the Committee continues to support collaboration between NIH and the Department of Energy [DOE] to bring together biomedical scientists with computer scientists, computational scientists and other data science experts. The Committee directs NIH to be consistent with the ODSS policies regarding use of AI/ML in biomedical and behavioral sciences research when carrying out AI/ML initiatives. The Committee requests an update within 180 days of enactment on NIH-wide ethical standards when biomedical research utilizes AI/ML.

Autoimmune and Immune Mediated Diseases.——The Committee recognizes the important role the new Office of Autoimmune Disease Research within the Office of Research on Women's Health will play in coordinating and fostering collaborative research across Institutes and Centers. As the office develops a strategic research plan, the Committee strongly encourages it to seek input from external stakeholders particularly patient advocacy organizations that represent the populations affected by autoimmune and immune-mediated diseases.

Biosecurity in Synthetic Nucleic Acid Synthesis.——The Committee urges NIH to develop additional policies to advance the adoption of strong biosecurity practices for synthetic biology technologies. Specifically, NIH should explore approaches to encourage grantees receiving NIH research dollars to prioritize the purchase of domestically produced synthetic genetic materials and tools from companies that have implemented appropriate biosecurity practices, including but not limited to the 2010 HHS Screening Framework Guidance for Providers of Synthetic Double-Stranded DNA or when available, an updated version of this guidance. In creating and implementing any such approaches, the Committee encourages NIH to coordinate with the Administration for Strategic Preparedness and Response.

Brain Research through Advancing Innovative Neurotechnologies [BRAIN] Initiative.——The Committee continues to support the BRAIN Initiative which is revolutionizing our understanding of the brain and fostering discoveries, collaborations, and partnerships that will lead to treatments and cures for brain diseases, disorders and injuries. The Committee provides $680,000,000 for the BRAIN Initiative. The Committee requests the BRAIN Initiative to communicate about the progress and achievements of the key projects and studies it is supporting with these funds by reporting on their objectives and anticipated/actual outcomes within 90 days of enactment.

Cannabis Research.——The Committee is concerned that marijuana policies on the Federal level and in the States (medical mari-
juana, recreational use, etc.) are being changed without the benefit of scientific research to help guide those decisions. The Committee recognizes the increased interest and need to study cannabis and its constituent cannabinoids. The Committee encourages NIH to expand its current research agenda across its Institutes and Centers, including additional research on higher potency THC, alternative cannabis formulations and extracts, and additional minor cannabinoids. The Committee also encourages NIH to expand research on the potential medical uses of cannabis, such as for chronic pain, appetite stimulation, immune diseases, cancer, metabolic and digestive disorders, epilepsy, glaucoma, MS, sleep disorders, and a variety of mental health conditions such as anxiety and PTSD. The Committee encourages NIH to continue to take an integrated approach to cannabis research across its Institutes and Centers. Finally, the Committee encourages NIH to continue supporting a full range of research on the health effects of marijuana and its components, including research to understand how marijuana policies affect public health.

_Cephalopod Research._—The Committee recognizes that there are no federally required welfare standards for the use of cephalopods in federally-funded research because all invertebrate animals are excluded from the Public Health Service [PHS] Policy on the Humane Care and Use of Laboratory Animals, which provides certain welfare standards for vertebrate animals. The Committee acknowledges that other countries have established oversight requirements for cephalopods when used in government-funded research. Due to cephalopods’ current exclusion in Federal regulations, there is limited oversight of their involvement in research. The Committee recognizes that researchers must still justify their use and numbers when proposing research seeking NIH funding. As interest in the welfare of these animals in research is increasing, the Committee encourages the NIH to consider developing guidance for the humane care and use of cephalopods in NIH-supported research, including possibly expanding the current definition of “animal” in the PHS Policy.

_Choildhood Post-Infectious Neuroimmune Disorders/PANS/PANDAS._—The Committee is concerned that although NIH supports research on Pediatric Acute-Onset Neuropsychiatric Syndrome [PANS] and Pediatric Autoimmune Neuropsychiatric Disorders Associated with Streptococcus [PANDAS], significantly more needs to be done to fully understand causes, diagnosis, and treatment of these devastating disorders. Research and physician education are essential to early identification and intervention, thereby reducing the risk of chronic illness and associated costs to families, school systems, healthcare systems, and insurers. The association between neuropsychiatric illness and infections has become even more evident because of SARS CoV–2 and provides increasing opportunities for breakthroughs in research and treatment. The Committee encourages NIH to increase prioritization of research in this area, and report to the Committee in the fiscal year 2025 CJ on the progress being made on the understanding of the causes, diagnostic criteria, and treatment of these conditions.

_Chimera Research._—The Committee supports NIH’s funding limitation regarding the introduction of human pluripotent cells into
non-human vertebrate animal pre-gastrulation stage embryos. The Committee takes seriously the bioethical considerations regarding the creation of human-animal chimeras and the continuation of research using these cells.

**Congenital Cytomegalovirus [cCMV].**—cCMV is the most common viral infection infants are born with in the United States and the leading non-genetic cause of hearing loss. cCMV can cause stillbirth or miscarriage, visual impairment, developmental delays, and other health complications. Current anti-viral and prevention strategies for cCMV that have been clinically studied are based on outdated innovations. The Committee encourages NIH to support research on the development of lower-cost and high-sensitivity prenatal (fetal) diagnosis and newborn screening technologies; the design, evaluation, and acceleration of clinical trials for vaccines; strategies to prevent CMV-related stillbirth and miscarriages; cCMV disparities research; effectiveness studies of risk reduction measures during pregnancy; treatment trials for those who are pregnant to reduce transmission and fetal disease; and intervention trials to assist those infants born with CMV. The Committee directs NIH to submit an update in the fiscal year 2025 CJ on the development of this research.

**Common Fund.**—The Gabriella Miller Kids First Research Act authorized $126,000,000 for a 10-year Pediatric Research Initiative. These funds are used to advance research for pediatric birth defects and childhood cancer. As authorized by the act, $12,600,000 is provided to support pediatric research.

**Common Data Elements [CDEs].**—The Committee recognizes the continued need to develop CDEs in disease areas where they currently do not exist, particularly in complex autoimmune and immune-mediated conditions. The Committee encourages the Office of Data Science Strategy [ODSS] to collaborate with the Office of Research on Women’s Health and Institutes and Centers that oversee research on autoimmune and immune-mediated conditions to prepare a roadmap for developing CDEs for these conditions. The Committee encourages ODSS to engage outside stakeholders, including professional societies and patient organizations, in this work, as appropriate.

**Compensation for Trainees and Early Career Researchers.**—The Committee appreciates that the future of U.S. economic competitiveness and our Nation’s ability to address national, economic, and health security threats depends on sustaining a robust STEM workforce. Ensuring individuals from communities that are underrepresented in the STEM field can enter and sustain a career as part of the STEM workforce is essential to strengthening the research workforce going forward. The Committee is deeply concerned that entrenched financial barriers are increasingly deterring graduate and postdoctoral students, particularly those from underrepresented communities, from pursuing STEM careers. The lack of Cost-of-Living Adjustments [COLAs] can make it financially unrealistic for postdoctoral students to accept positions, particularly in high-cost areas; areas in which academic medical centers are located. The Committee is aware of NIH’s concerns about instituting COLAs for postdoctoral students, however, the Committee believes attracting and retaining New and Early-Stage Investigators and in-
creasing diversity in biomedical science are paramount goals. The Committee directs NIH to evaluate the adequacy of compensation for trainees and early career researchers, including COLAs, supported through fellowships, training grants, and research awards. Within 180 days of enactment, the Committee directs NIH to provide a report on this analysis, and such a report shall include the estimated budgetary needs of instituting COLAs for postdoctoral students.

Creutzfeldt-Jakob Disease.—The Committee encourages NIH to continue to fund projects investigating Creutzfeldt-Jakob Disease [CJD] and other prion diseases, which are rapidly progressive and fatal neurodegenerative diseases, including projects that are also relevant to Alzheimer's Disease and Related Dementias [ADRD]. CJD is caused by the abnormal folding of the prion protein in the brain, and closely resembles ADRDs.

Developmental Delays.—The Committee continues to provide $10,000,000 for research on developmental delays, including speech and language delays in infants and toddlers, characterizing speech and language development and outcomes in infants and toddlers through early adolescence. The Committee urges NIH to support research including longitudinal studies, translation of research into clinical practice, and novel approaches to study children with speech and language delays to provide parents, teachers, pediatricians, and other caregivers with the information they need to help late talking children grow and thrive in school and other social environments.

Diet and Chronic Disease Research.—The Committee recognizes the importance of ongoing activities to better understand the impact of food and diet on the development of mucosal immunity and the relevance of this topic to Crohn’s disease and ulcerative colitis and to other digestive and autoimmune or immune-mediated diseases. The Committee encourages NIH to convene a scientific workshop, supported by multiple Institutes, Centers or Offices, including the Office of Nutrition Research, and to report to the Committee the outcomes of the workshop, including possible future research opportunities.

Duchenne and Becker Muscular Dystrophy.—The Committee supports the research conducted by the Wellstone Muscular Dystrophy Research Network Centers of Excellence program established in 2003. The Committee directs NIH to provide a report to Congress and the public on the key scientific accomplishments of the Centers to date and their current activities. The NIH also should use this information to update its website content regarding the program.

Eating Disorders.—The Committee commends NIH for supporting multi-Institute research on the chronic, serious, and fatal mental illness of eating disorders impacting nearly 30 million Americans during their lifetimes. More than seventy percent of people with eating disorders have comorbid mental health conditions including anxiety disorders, mood disorders, and trauma-related symptoms. Lifetime prevalence of comorbid substance use disorder among individuals with eating disorders was recently reported as 27.9 percent. The Committee remains concerned about the lack of research surrounding binge-eating disorder, the most common eating disorder in the United States and encourages NIH
to increase eating disorder research across all sub-types to better reflect the U.S. population, including historically underrepresented populations. The Committee requests an update within 180 days of enactment on steps NIH is taking to diversify research across all eating disorder sub-types and resources needed to address gaps in genetics, prevention, diagnosis, and treatment of eating disorders.

Encouraging Innovation and Experimentation.—The Committee recognizes that there are many ideas for how NIH could improve its operations and funding models—such as lotteries for funding mid-range proposals, funding the person rather than the project, and more—yet there is not enough evidence to directly mandate any of these ideas. The Committee urges NIH to examine how best to create or empower a team that would engage in NIH-wide experimentation with new ideas regarding peer review, funding models, and others, so as to enhance NIH’s operations and ultimately to improve biomedical progress. The Committee directs NIH to provide a report within 1 year on these efforts.

Endotoxemic Septic Shock.—The Committee encourages NIH to convene a stakeholder workshop to discuss research needs to inform the development of diagnostic criteria for characterizing endotoxemic septic shock in recognition of clinical advances in knowledge and emerging medical technologies to assess and treat this condition.

Environmental Influences on Child Health Outcomes [ECHO].—The Committee includes $180,000,000, for the ECHO program. ECHO currently funds the Navajo Birth Cohort Study. The Committee encourages expanding the study to include a larger representation of Navajo children in the cohort to allow for a better understanding of the impacts of environmental exposure in the Navajo Nation.

Expanding Support for Young Investigators.—NIH has been criticized for funding too many late career scientists while funding too few early career scientists with new ideas. The Committee is concerned that the average age of first-time R01 funded investigators remains 42 years old. More than twice as many R01 grants are awarded to investigators over 65 than to those under 36 years old. The Committee appreciates NIH’s efforts to provide support for early-career researchers through several dedicated initiatives, including the NIH Director’s New Innovator Award, Next Generation Researchers Initiative, Stephen Katz award, and the NIH Pathway to Independence Award. The Committee encourages NIH to continue supporting these important initiatives and to expand support for early career researchers by increasing the number of award recipients for these programs in future years. Finally, to better understand what is needed to advance these efforts, the Committee directs NIH to provide a report within 180 days of enactment on its full range of programs for early career scientists including the annual cost per program over the last five fiscal years and the average number of recipients per year by award. Such report shall include a “professional judgement” budget to estimate the additional funding needed to grow and retain the early career investigator pool, accelerate earlier research independence, and ensure the long term sustainability of the biomedical research enterprise.
Firearm Injury and Mortality Prevention.—The Committee provides $12,500,000 to conduct research on firearm injury and mortality prevention. Given violence and suicide have a number of causes, the Committee recommends NIH take a comprehensive approach to studying these underlying causes and evidence-based methods of prevention of injury, including crime prevention. All grantees under this section will be required to fulfill requirements around open data, open code, pre-registration of research projects, and open access to research articles consistent with the National Science Foundation’s open science principles. The Director is to report to the Committees within 30 days of enactment of this act on implementation schedules and procedures for grant awards, which strive to ensure that such awards support ideologically and politically unbiased research projects.

Foreign Influence.—To support NIH’s efforts to expeditiously complete grant compliance reviews, the Committee continues to include $2,500,000 for this activity within the Office of Extramural Research. The Committee directs NIH to provide biannual briefings on compliance, oversight, and monitoring reviews where non-compliance has been identified.

Full Spectrum of Medical Research.—The Committee recognizes the growing importance of supporting the full spectrum of medical research at NIH, to ensure breakthroughs in basic science are translated into innovative therapies, diagnostic tools, and health information with a tangible benefit to the patient and professional communities. The Committee encourages NIH to support the flagship CTSA program and to catalyze emerging opportunities in AI, big data, and other areas, while maintaining the commitment to critical activities, such as training the next generation of cutting-edge physician-scientists.

Fund the Person, Not the Project.—While many labs are funded by R01-equivalent grants, the R35 mechanism arguably allows scientists more flexibility and freedom to pursue the best possible science. At present, only NIGMS uses the R35 to a significant extent (more than four times as often as the rest of NIH put together), with its Maximizing Investigators’ Research Award [MIRA] program. The Committee directs NIH to convene an expert panel on expanding the R35/MIRA grant type such that it is more widely used across NIH Institutes and Centers, and to report back to the Committee within 1 year on NIH’s plans for expanding the R35 along with its plans for evaluating the impact on scientific progress.

Funding Replication Experiments and/or Fraud Detection.—The Committee recognizes that many biomedical research studies have turned out to be irreproducible or even outright fraudulent. The recent Reproducibility Project in Cancer Biology showed that cancer biology studies in top journals often failed to be replicable, and a prominent line of Alzheimer’s studies was recently found to be based on an allegedly fraudulent study funded by NIH in the early 2000s. Given the importance of detecting both reproducibility and fraud, the Committee provides $10,000,000 to establish a program to fund replication experiments on significant lines of research, as well as attempts to proactively look for signs of academic fraud. The Committee directs NIH to brief the Committee within 180 days
of enactment on the establishment, staffing and plans for this effort in fiscal years 2024 and 2025.

Genomic Data.—The Committee encourages NIH to support development of technology that would allow biomedical researchers to manage and analyze genomic clinical data for research, in a user-friendly way, independent of bioinformaticians in an environment for users without coding skillsets.

Harassment Policies.—The Committee is concerned by recent reports that despite being disciplined for sexual harassment against multiple trainees and co-investigators, NIH allowed the transfer of a principle investigator from one academic institution to another, where he continued to harass trainees, and was later awarded an additional $2,500,000 grant from NIH. The Committee directs NIH to provide a full reporting of this incident to the Committees, including an update on how NIH will rectify this particular case. In addition, NIH is directed to provide an update to the Committees on how it intends to prevent enabling “pass the harasser” in the future, and make clear to institutions and researchers that harassment is not acceptable and that both institutions and researchers will be held accountable, including through the loss of Federal funding, for such incidents.

HEALing Community Study.—The Committee supports the goals of the HEALing Communities study to test the integration of prevention, overdose treatment, and medication-based treatment to combat the opioid crisis, and encourages NIH to continue funding the study to completion.

Health Impacts on Children of Technology and Social Media Use.—The Committee remains concerned about the impacts of technology use and media consumption on infant, children, and adolescent development. The Committee appreciates NIH’s ongoing engagement on this important topic and encourages NIH to prioritize research into the cognitive, physical, and socioemotional impacts of young people’s use of technologies as well as long-term developmental effects on children’s social, communication, and creative skills. The Committee also encourages NIH to study potential correlations between increased use of digital media and technologies and suicidal thoughts and ideation among children. The Committee encourages NIH to consider different forms of digital media and technologies, including mobile devices, smart phones, tablets, computers, and virtual reality tools, as well as social-media content, video games, and television programming. The Committee encourages collaboration between NIMH and NICHD for these activities.

Improving Clinical Trials.—The clinical trial enterprise has been criticized for conducting too many clinical trials where small size may lead to the production of limited evidence relevant to clinical outcomes. The Committee directs NIH to convene an independent panel (at least 51 of whom must be non-Federal employees) in order to assess the rate at which NIH-funded clinical trials are not of sufficient size or quality to be informative. The panel should randomly sample at least 300 NIH-funded trials from each of the years between 2010 and 2020, and should make recommendations as to how to fund fewer non-informative trials in the future. The Committee directs NIH to provide a report within 1 year as to the independent panel’s findings.
INCLUDE Initiative.—The Committee includes no less than $90,000,000, the same as the fiscal year 2023 enacted level, within OD for the INCLUDE Initiative. The Committee encourages NIH to make further investments in health equity-focused research and care for African Americans and other underrepresented groups with Down syndrome. The Committee remains pleased with a focus on large cohort studies across the lifespan, novel clinical trials, and multi-year, NIH-wide research driving important advances in understanding immune system dysregulation, Alzheimer’s disease, and leukemia that is contributing to improvements in the health outcomes and quality of life of individuals with Down syndrome as well as millions of typical individuals. The Committee requests that NIH provide an updated plan within 60 days of enactment of this act that includes a timeline and description of potential grant opportunities and deadlines for all expected funding opportunities so that young investigators and new research institutions may be further encouraged to explore research in this space. This plan should also incorporate and increase pipeline research initiatives specific to Down syndrome.

Kleine-Levin Syndrome.—The Committee commends NIH for its December 2021 publication of the Sleep Research Plan. The Committee encourages the inclusion of Kleine-Levin Syndrome (KLS), a complex neurological disorder characterized by long, recurring episodes of excessive sleep and derealization, as a sleep disorder requiring attention and study in the next publication of the Sleep Research Plan. The cause of KLS is still unknown, and there are no known treatments. Because KLS shares symptoms with other sleep disorders and mental health conditions, the Committee encourages NIH to expand its support for research about KLS, which could provide the KLS community and many others with critical information and answers.

Low-Code Application Development.—The Committee encourages NIH to continue to utilize commercially available tools to expand Low-Code Application Development and that NIH also seek to bring that increased efficiency and effectiveness to the entire NIH enterprise with the intent to improve cybersecurity posture, reduce Operation and Maintenance costs associated with legacy applications, reduce open-ended reliance upon external services vendors, and train and empower personnel to create solutions that can be replicated at lower cost by other users across the enterprise, utilizing Low-Code Application development technologies.

Lyme Disease and Related Tick-Borne Illnesses.—The Committee urges NIH to develop new tools that can more effectively prevent, diagnose, and treat Lyme disease, including its long-term effects, and other tick-borne diseases. The Committee encourages the promotion and development of potential vaccine candidates for Lyme disease and other tick-borne diseases. The Committee urges NIH to conduct research to better understand modes of transmission for Lyme and other tick-borne diseases, including vertical transmission. The Committee encourages NIH to incentivize new investigators to enter the field of Lyme disease and other tick-borne disease research. The Committee encourages NIH to coordinate with CDC including through the HHS Tick-borne Disease Working Group on publishing reports that assess diagnostic advancements,
methods for prevention, the state of treatment, and links between tick-borne disease and psychiatric illnesses.

Mitochondrial Disease Research.—The Committee is aware of the efforts by NIH to advance research on mitochondrial disorders and translate advances in mitochondrial research to therapies for mitochondrial disorders and their secondary diseases, such as Alzheimer’s disease, Parkinson’s disease, muscle myopathies, and cancer. It is noteworthy progress that the first treatment for a primary mitochondrial disease—Freidereich’s Ataxia—was very recently approved by the FDA. The Committee is also aware of considerable evidence implicating the impairment of mitochondrial function resulting from infection with SARS–CoV–2 in the causation of so-called “Long COVID” disease. Accordingly, the Committee encourages NIH to promote interest in primary mitochondrial disease research, continue its ongoing outreach and collaboration with FDA related to research that may lead to future mitochondrial disease-related drug approvals, ensure that support for Long COVID research includes opportunities for studies to explore the role of mitochondrial impairment, and fund collaborative research on mitochondrial disease to centralize a critical mass of research, clinical care, and provider education.

National Primate Research Centers.—The Committee includes $30,000,000 in funding to expand, remodel, renovate, or alter existing research facilities or construct new research facilities for non-human primate resource infrastructure, as authorized under 42 U.S.C. section 283k.

Native Hawaiian Early Career Development.—The Committee acknowledges the underrepresentation of Native Hawaiian health research-related activities across the agency and within the Native Hawaiian community. The Committee encourages NIH to continue to explore NIH-wide early career development awards that provide support for early-career investigators from populations underrepresented in the U.S. research enterprise, including Native Hawaiian investigators, and encourages outreach to entities with a proven track record of working closely with Native Hawaiian communities. The Committee requests an update on progress in the fiscal year 2025 CJ.

National Security.—The Committee believes that NIH should consider relevant national security issues when developing and executing the NIH–Wide Strategic Plan.

Near-Misses.—The Committee recognizes that in many cases, top biomedical scientists (even Nobel winners) attest that they struggled to get NIH funding for the work leading up to their major discoveries. The failure of the NIH peer review process to recognize and award groundbreaking science is separate from the issue of hypercompetition, and warrants investigation. The Committee urges NIH to fund a major, independent study of how often this phenomenon happens, the possible reasons behind it, and potential reforms that could alleviate the problem in the future.

Neurofibromatosis [NF].—The Committee supports efforts to increase funding and resources for NF research and treatment at multiple Institutes, including NCI, NINDS, NIDCD, NHLBI, NICHD, NIMH, NCATS, and NEI. Children and adults with NF are at elevated risk for the development of many forms of cancer,
deafness, blindness, developmental delays and autism. The Committee encourages NCI to continue to support a robust NF research portfolio in fundamental laboratory science, patient-directed research, and clinical trials focused on NF-associated benign and malignant cancers. The Committee also encourages NCI to continue to support preclinical research and clinical trials. Because NF can cause blindness, pain, and hearing loss, the Committee urges NINDS and NIDCD to continue to support fundamental basic science research on NF relevant to restoring normal nerve function. Based on emerging findings from numerous researchers worldwide demonstrating that children with NF have a higher chance of developing autism, learning disabilities, motor delays, and attention deficits, the Committee encourages NINDS, NIMH, and NICHD to continue their support of research in these areas. Since NF2 accounts for some genetic forms of deafness, the Committee encourages NIDCD to expand its investment in NF2-related research. NF1 can cause vision loss due to optic gliomas. The Committee encourages NEI to expand its investment in NF1-focused research on optic gliomas and vision restoration.

**NIH Support for Pediatric Research.**—The Committee commends NIH for its efforts to coordinate pediatric research across its Institutes and Centers through the recently established Trans-NIH Pediatric Research Consortium. The Committee understands NCI participates in the Consortium, and that childhood cancer research is an important part of the pediatric research portfolio across NIH. The Committee requests an update in the fiscal year 2025 CJ on efforts underway through the Trans-NIH Pediatric Research Consortium to enhance pediatric research across NIH, including efforts to strengthen the pediatric research workforce. The Committee desires NIH to maintain a robust pediatric research portfolio spanning basic, translational and clinical research, to adequately support researchers at all career stages, particularly early career investigators focused in pediatrics, and to ensure pediatric components are included within larger NIH research priorities. The Committee includes $1,500,000 for the National Academies of Science, Engineering, and Medicine to assess the current NIH pediatric research portfolio and structure, including how projects are categorized as pediatrics, how pediatric components have been included or excluded from larger NIH initiatives, structural or process impediments to pediatric applicants, how pediatric research priorities are established, and how pediatric research activity is coordinated across Institutes and Centers and to make recommendations to address deficiencies and improve NIH’s overall support of child health research.

**Office of the Chief Officer for Scientific Workforce Diversity (COSWD).**—The Committee continues to provide $22,415,000 to the Office of COSWD.

**Office of Nutrition Research (ONR).**—The Committee recognizes that understanding the complex factors that affect the nutritional needs of older adults is critical to informing the Dietary Guidelines for Americans, which serves as the foundation for Federal food assistance and meal programs, including the Older Americans Act Nutrition Program, which serves millions of older adults each year. However, there is limited research examining older adult nutrition.
The Committee encourages ONR and NIA to coordinate and to study the nutritional needs of older adults, particularly those ages 85 and older. Bolstering older adult nutrition research will support older adults in adequately meeting their dietary needs, which can contribute to improved health outcomes and quality of life and reduce the need for long-term care services and supports. In addition, the Committee encourages ONR and NIA to review all research currently underway at the NIH as it pertains to older adult nutrition and submit a report on the status of such research, as well as gaps in research, to the Committees on Appropriations no later than 270 days after enactment.

Office of Research on Women's Health [ORWH].—The Committee notes bill language that was included in the Consolidated Appropriations Act, 2022 that funding for ORWH be made available for direct grant making to address women’s health research needs that are not being addressed by Institutes and Centers. The Committee provides $76,480,000 for ORWH. This Office ensures women’s health research and research on the biological and sociocultural influence of sex and gender are included within the NIH scientific framework. Congress recognizes ORWH’s critical leadership in promoting women’s health research and spearheading research programs like the Building Interdisciplinary Research Careers in Women’s Health [BIRCWH] program, which aims to increase the number and skills of investigators who conduct research on sex and gender influences on health and disease, and the Specialized Centers of Research Excellence on Sex Differences, a program designed to expedite the development and application of new knowledge to human diseases that affect women, to learn more about the etiology of these diseases, and to foster improved approaches to treatment and/or prevention. The Committee recognizes persistent gaps remain in the knowledge of women’s health. Within the total for ORWH, the Committee provides $7,000,000, an increase of $2,000,000 above the fiscal year 2023 enacted level, to expand the BIRCWH program. ORWH is encouraged to support additional researchers focused on women’s health and sex differences, including research focused on cancer and maternal health.

Osteopathic Medical Schools.—The Committee recognizes that osteopathic medicine is one of the fastest growing healthcare professions in the country and osteopathic medical schools educate 25 percent of all medical students. The Committee understands that osteopathic medical students receive 200 hours of additional training in the musculoskeletal system and learn the value of osteopathic manipulative treatment as a non-pharmacological alternative to pain management. Over half of osteopathic physicians’ practice in the primary care specialties of family medicine, internal medicine, and pediatrics, and a disproportionate share of osteopathic medical graduates locate in rural and underserved areas. Osteopathic research is needed to enhance primary care and improve healthcare for rural and underserved populations. Over the past 5 years, osteopathic medical school applications have seen similar success rates as seen in NIH overall. The Committee recognizes that increased access to research funding for the osteopathic profession will significantly bolster NIH’s capacity to support robust recovery from the COVID–19 pandemic, address health dis-
parities in rural and medically-underserved populations, and advance research in primary care, prevention, and treatment. The Committee urges NIH to consider how best to incorporate colleges of osteopathic medicine into research activities and involvement of their researchers on NIH National Advisory Councils and study sections to have better representation of the osteopathic medicine field.

*Pain and Addiction.*—The Committee commends NIH, NIDA, and NINDS for their focus on addressing addiction and developing alternatives to opioids for safe and effective pain management strategies that reduce reliance on opioids. In particular, NIDA and NINDS’ commitment to research on improved pain management and prevention or recovery from opioid addiction as part of NIH’s HEAL Initiative continues to help fuel the next generation of scientists and clinicians focused on mitigating chronic pain with non-addictive therapies and prevention and treatment of drug addiction. The Committee encourages NIH, NIDA, and NINDS to continue their efforts through the HEAL Initiative in fiscal year 2024, with a focus on grant opportunities to support research and education to improve outcomes for people with both chronic pain and addiction in diverse settings across the United States, particularly those located in areas with high incidence of people living with chronic pain.

*Peripheral Neuropathy.*—The Committee is concerned about the lack of research funding for peripheral neuropathy, a condition that affects 30 million Americans and can cause considerable pain and disability in those diagnosed with the disease. The Committee encourages NIH to develop a coordinated approach to better understand the causes of and find potential new treatments for peripheral neuropathy. Among other things, research could focus on developing a natural history database, collecting serial blood biomarkers and creating a tissue bank, and identifying genetic risk factors and other strategies to facilitate the diagnosis and treatment of various types of peripheral neuropathy. The Committee also encourages NIH to support research on idiopathic peripheral neuropathy, which affects 10 million Americans.

*Polycystic Ovary Syndrome [PCOS].*—PCOS is a common female endocrine disorder that affects women across the lifespan. The Committee recognizes the significant and pervasive health and economic burden of PCOS, which may have reproductive, metabolic, cardiovascular, maternal, and mental health effects. Therefore, the Committee encourages NIH to continue to prioritize PCOS research and to devote additional resources to support research on cardiometabolic, endocrine, and other comorbidities that impact the health and quality of life of patients with PCOS such as insulin resistance, hirsutism and dermatologic conditions, cardiovascular diseases and their risk factors, mental health disorders, stroke, and cancer; as well as resources on research focused on ethnic and racial differences. The Committee directs NIH to submit an update to the Committee within 180 days of enactment on the findings from the 2021 NIH workshop on the cardiovascular risks across the lifespan in PCOS and the recommendations and plans to address identified gaps.
Postural Orthostatic Tachycardia Syndrome [POTS].—The Committee requests an update within 90 days of enactment on the NIH’s work to establish a new multi-institute Notice of Special Interest to spur new research on POTS as directed in fiscal year 2023.

Psychedelic Research.—The Committee recognizes the increased interest and need to study psychedelics, including MDMA, ketamine, and psilocybin, and their potential therapeutic effects. The Committee encourages NIH to expand its current research agenda across its Institutes and Centers, potentially by forming a cross-Institute research group, and to encourage psychedelic research at the NIH Clinical Center. The Committee also encourages NIH to work with FDA in developing and supporting public-private collaborations to advance all forms of psychedelic research for therapeutic purposes.

Research on Enhanced Potential Pandemic Pathogens [ePPPs].—The Committee supports the recommendations outlined in the March 2023 National Science Advisory Board for Biosecurity [NSABB] Report on Proposed Biosecurity Oversight Framework for the Future of Science. Periodic reassessment of NIH’s biosafety and biosecurity oversight ensures that the agency effectively addresses existing and emerging safety and security concerns surrounding the research it funds while preserving scientific progress and innovation. In accordance with the NSABB recommendations, NIH is directed to articulate specific roles, responsibilities, and expectations for investigators and institutions in the identification, review, and evaluation of research for potential involvement of ePPPs in its terms and conditions of awards. NIH is urged to prioritize resources for the independent review of such research identified by institutions that receive NIH support for life sciences research either directly or indirectly, and ensure that the conduct of ePPP research at international institutions receiving NIH support is subject to oversight requirements that are equivalent to domestic U.S. policies and procedures. Finally, in preparation for the Office of Science and Technology Policy’s updated December 2023 Federal policy governing the review and oversight of ePPP research, the Committee provides $1,000,000 for NIH to establish an implementation office to serve as a resource for the research community. The implementation office shall serve as the main point of contact within NIH that provides technical assistance for research institutions regarding the ePPP policy. The office shall also develop tools and training guidance for the extramural research community to strengthen risk-assessment, safety, security, and ethical considerations surrounding proposed ePPP research at research institutions. NIH is directed to provide an update on the implementation of these activities within 120 days of enactment. Finally, NIH is directed to deliver with the fiscal year 2025 CJ a professional judgement budget on the funding required to support facilities and administration costs, including additional inspections and review of policies and procedures, at its high containment laboratories in addition to the grant funding it provides. This budget should estimate additional funding needed to support biosafety training and safeguard research involving pathogens to protect laboratory workers, public health, and national security.
Research with Non-Human Primates.—The Committee recognizes the critical role of non-human primate [NHP] research in virtually all areas of biomedical research. Research with unique animal models makes irreplaceable contributions to understanding the biological processes that cause disease, which is necessary for the development, safety and efficacy testing of new therapeutics before clinical trials. NHP research will be vital to studying both the underlying mechanisms and potential cures for costly and emergent diseases. The Committee is concerned about the condition and availability of critical Federal research assets outlined in the 2023 National Academies report on the State of the Science and Future Needs for Nonhuman Primate Models in Biomedical Research. In particular, the Committee is alarmed that NIH has no central data management or reporting structure for tracking the number of NHPs required to meet current and future research needs. The Committee directs NIH to develop a strategic management plan for NHP research resources to bolster cooperative efforts, data sharing, purposeful planning, and data-driven care and management methods. The Committee urges NIH to award funding to meritorious research proposals using NHPs to study neurological diseases as well as research into preventing the next pandemic. NIH is also encouraged to continue the development and validation of new approach methodologies that reduce the need for, enhance the utility of, and mitigate shortages and costs of NHP models in the future.

Research Transparency.—As demonstrated over the past several years, the Committee remains committed to funding NIH research and ensuring that our Nation’s researchers, particularly our early career scientists, have the support to make the scientific breakthroughs that may transform healthcare. However, it is critical that NIH can ensure funds are used for the best possible research that fulfill the core research mission of NIH. NIH is encouraged to justify, in writing made available on a publicly accessible website, that each grant or agreement promotes efforts to seek fundamental knowledge about the nature and behavior of living systems and/or the application of that knowledge to enhance health, lengthen life, and reduce illness and disability.

Sex as a Biological Variable [SABV] Policy.—The appropriate analysis and reporting of data by sex can enhance the rigor and applicability of preclinical biomedical research. The NIH SABV Policy was necessary because historical research data that only uses one sex has been misleading and ungeneralizable to another sex. Furthermore, studying only one sex may lead to false conclusions due to hidden sex-specific effects that, left unreported, can have serious health consequences. To track and analyze NIH’s progress in integrating SABV into biomedical research across its Institutes and Centers, the Committee encourages NIH to explore options for assessing policy implementation and how well studies are satisfactorily incorporating SABV into research designs, analyses, and reporting.

Spinal Muscular Atrophy.—The Committee remains committed to continued NIH research into spinal muscular atrophy [SMA], a neuromuscular disease that causes degenerative nerve damage and results in severe muscle loss and impaired motor function. Past SMA research at NIH, particularly through NINDS, has led to dis-
ease-modifying SMA treatments and greater knowledge of the nervous system, which has benefited other neurological and neuromuscular disorders. While current SMA treatments slow or stop future degeneration, they do not cure SMA. Individuals with SMA, particularly adults, face significant challenges in muscle weakness and fatigue due to degeneration that occurred prior to treatment. Individuals treated prior to clinical symptoms onset may also display unmet needs, such as bulbar impairment and gait abnormalities. The Committee urges NIH to address the significant unmet need that exists across all ages and disease stages of SMA by supporting new SMA research into the role and function of survival motor neuron [SMN] protein, investigation into non-SMN pathways and targets capable of modifying disease, and research into how to best combine SMN-enhancing and non-SMN approaches for optimal therapeutic outcomes.

Reducing the Administrative Burden on Researchers.—The Committee recognizes that according to a national survey by the Federal Demonstration Partnership, federally-funded researchers report spending 44 percent of their research time on bureaucracy, including the time to prepare proposals and budgets, post-grant reporting of time and effort, ethical requirements, and other compliance activities. Although NIH and other agencies tasked with reducing administrative burden conducted extensive consultations with the research community that resulted in a 2019 final report on their implementation plans, the Committee is concerned about the status of the implementation by NIH and any plans to evaluate the outcome. The Committee directs NIH to form a Board on reducing administrative burden, with at least 75 percent representation from non-Federal organizations and at least 25 percent representation from early-career researchers (including post-docs). Within 1 year of enactment, the Board is directed to provide a report that includes an evaluation of current efforts to reduce administrative burden and to provide recommendations aiming to reduce the administrative burden on researchers by 25 percent over the next 3 years. The Committee strongly encourages NIH to put recommendations into effect as soon as practicable. The Committee requests a briefing on this effort 90 days from the enactment. The report recommendations shall be made available to the public on the agency website.

Scientific Management Review Board.—The Committee recognizes that under the NIH Reform Act of 2006 (Public Law 109–482), a Scientific Management Review Board [SMRB] was created with the specific mission of reviewing the overall “research portfolio” of NIH, and advising on the “use of organizational authorities,” such as abolishing Institutes or Centers, creating new ones, and reorganizing existing structures. Yet this Board has not met or issued a report since 2015, despite the obligation to do so every 7 years. The NIH Advisory Committee to the Director [ACD] does not have the statutory authority or mandate to serve as a substitute for the SMRB, and the Committee rejects any efforts to assign the ACD to undertake these efforts. The Committee directs NIH to reconvene the SMRB within 1 year of enactment in order to fulfill its statutory duty to advise Congress, the Secretary, and
the NIH Director on how best to organize biomedical research funding.

Term Limits.—Congress’ decision to limit ARPA–H managers to a maximum of two 3-year appointments (4 years for the ARPA–H Director) is a break from NIH’s longstanding practice of allowing its top officials to effectively serve indefinitely. The Committee believes that a healthy degree of turnover in leadership is critical for sustaining the vitality of NIH. It also provides the opportunity for leading scientists across the Nation to leave their positions for a set period of time and come to NIH to provide effective leadership to critical elements of the Nation’s biomedical enterprise. The Committee supports the recommendations outlined in the 2003 Institute of Medicine report Enhancing the Vitality of the National Institutes of Health: Organizational Change to Meet New Challenges. Specifically, the Committee supports Recommendation 10, to set term limits for IC Director appointments to two 5-year terms. The Committee believes regular replacement of IC Directors following a maximum of two terms would be an overall benefit to medical research by ensuring the periodic introduction of fresh perspectives. The Committee provides $500,000 and directs NIH to begin the planning process for implementing this policy, and to report to the Committees within 180 days of enactment on these efforts.

Thalassemia.—Nutrition can be an important tool in the management of rare diseases. Currently, there is no guidance on nutrition approaches for the management of thalassemia, which occurs most often in people of Mediterranean, Chinese, South Asian, and Southeast Asian descent. In addition to the possibility that thalassemia itself creates nutritional deficits, there is concern that necessary iron chelation therapy may create additional deficits. Research is needed to provide practitioners with evidence-based advice for patients, both on diets that would help improve and manage their condition, and those that may be harmful. The Committee encourages NIH to study the impact of nutrition on disease management and improving clinical understanding.

The HEALthy Brain and Child Development [HBCD] Study.—The Committee recognizes and supports the NIH HBCD Study, which will establish a large cohort of pregnant individuals and follow them and their children up to age 10 to characterize the influence of a variety of factors on neurodevelopment and long-term outcomes. The study aims to enroll approximately 7,500 participants through 27 sites across the United States, including regions of the country significantly affected by the opioid crisis. The study cohort will comprise participants that reflect the U.S. population but will oversample for individuals that have used substances sometime during their pregnancy and a matching cohort with similar characteristics but no substance exposure during the pregnancy. Multimodal data collection will include neuroimaging, behavioral and cognitive assessments as well as collection of biospecimens and brain activity measurements [EEG]. Knowledge gained will be critical to help predict and prevent some of the known impacts of pre- and postnatal exposure to drugs and environmental influences, including risks for future illicit substance use, mental disorders, and other behavioral and developmental problems, as well as identify factors that contribute to resilience and opportunities for interven-
The Committee recognizes that the HBCD Study is supported in part by the NIH HEAL Initiative, and NIH Institutes, Centers, and Offices [ICOs], including OBSSR, ORWH, NEI, NIMHD, NIBIB, NIEHS, NICHD, NINDS, NIAAA, NIMH, and NIDA, and encourages additional NIH support for this important study.

**Von Hippel-Lindau [VHL] Disease.**—The Committee recognizes that finding a treatment and cure for VHL disease, in which the VHL tumor suppressor gene is damaged or nonexistent, is key for treating and curing not only the rare disease of VHL but also many other forms of cancer. The role of the VHL gene is central in how cells sense and adapt to oxygen and nutrient availability and how this mechanism leads to abnormal cell or cancer growth. As a result, nearly a dozen medications currently used to treat various forms of cancer are the direct result of research in VHL biology. The Committee encourages NIH to continue to support research on VHL disease and biology, seeking both pharmacological and gene therapy treatments for VHL and other cancer patients. The Committee requests an update on VHL research efforts in the fiscal year 2025 CJ.

**Wastewater Surveillance R&D.**—The Committee recognizes the potential and importance of wastewater surveillance in public health surveillance, including its use during the pandemic to inform COVID–19 surveillance. The Committee encourages NIH to continue programs, including the Rapid Acceleration of Diagnostics [RADx] that support innovation in developing and improving wastewater surveillance capabilities.

**Women’s Health Clinical Research Network.**—The Committee directs NIH to expand and more formally coordinate its support women’s health clinical research by leveraging the CTSA program. The Committee urges NCATS and CTSA awardees to focus on women’s health within its efforts to modernize the translation of research into health benefits across the full spectrum of medical research. The Committee directs NCATS to collaborate with ORWH to evaluate how to better promote research and collaborations that address the distinctive medical and health needs of women and advance the dissemination and implementation of research results. The Committee requests an update on these activities with 120 days of enactment.

**ADVANCED RESEARCH PROJECTS AGENCY FOR HEALTH**

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The Committee includes $1,500,000,000 for the Advanced Research Projects Agency for Health [ARPA–H], the same level as fiscal year 2023. The Committee continues to believe ARPA–H requires a different culture and mission than NIH’s other 27 Institutes and Centers. The Committee continues to direct ARPA–H to provide quarterly briefings to the Committee on its establishment process, hiring, and scientific priorities and progress. The Committee expects such briefings to address how ARPA–H’s activities are designed to advance biomedical research and development and the mission to create breakthrough technologies, as well as how to
balance long-term trans-disciplinary scientific challenges with short-term research goals.

*Amyotrophic Lateral Sclerosis [ALS].—* The Committee urges ARPA–H to consider funding ALS research that prioritizes time to beneficial impacts on people living with ALS and their families.

*Geroscience.—* Geroscience research is a revolutionary way to approach health and aligns well with the mission of ARPA–H to identify and invest in high-risk, high-reward research projects that have the potential to transform healthcare and improve public health. By uncovering new insights into the underlying causes of age-related diseases, geroscience research could lead to treatments and therapies that offer the possibility of improving people’s “healthspan,” so they remain healthier longer, and address the growing burden of age-related diseases on society. The Committee urges ARPA–H to prioritize two areas of geroscience research that could advance the field dramatically: biomarkers and epigenetic reprogramming. Discovering and validating biomarkers for aging would significantly improve the efficacy of interventions, while epigenetic reprogramming of cellular age could slow down or even reverse the aging process and thereby prevent or delay the entire panoply of age-related diseases.

*Mission and Independence.—* The Committee recognizes that ARPA–H plays a unique role in the U.S. science and technology enterprise. Modeled after the Defense Advanced Research Agency [DARPA] but singularly focused on improving health outcomes, ARPA–H is expected to pursue transformative advances in health beyond the scope of other public or private efforts. U.S. citizens and interests can be threatened by endemic and emerging diseases in any part of the world. The Committee expects ARPA–H to contribute in unique ways to combating existing and emerging health threats here and abroad, and to strengthen U.S. science and technology capacity, competitiveness, and leadership. While the Committee supports the structure of ARPA–H as an independent entity within NIH, it understands that ARPA–H will utilize many of NIH’s administrative functions and will cover its appropriate share of the cost of these functions, like NIH’s Institutes and Centers. In all other respects, where collaboration with other parts of NIH may occur, the Committee strongly encourages ARPA–H and NIH to co-fund the collaboration following precedent of NIH projects co-funded with other government agencies. The Committee directs ARPA–H to report to the Committee within 180 days of enactment with details on any scientific collaborations with NIH, including the allocation of costs.

*Recalcitrant Cancers.—* Given the toll recalcitrant cancers exact on society and the lack of diagnostic and treatment resources currently available to help these patients, the Committee encourages ARPA–H to work with NIH and NCI to ensure that approved projects focus on the hardest problems and areas where medical practice will be dramatically changed, including the deadliest cancers.
BUILDINGS AND FACILITIES

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The Committee includes $292,000,000 for Buildings and Facilities. For the fourth time in as many years, the recommendation does not include authority for NIH to transfer up to 1 percent of its research funding to the Buildings and Facilities account. This is extraordinary authority for a Federal agency and NIH has yet to provide an explanation for why this mechanism would be appropriate. Funding provided for research should not be unilaterally transferred without a sound explanation and robust justification of need. The Committee commends the agency for continuing to develop a sound capital planning process and for keeping the Committee informed on such activities. These efforts have been supported by the Committee with modifications of section 216 of this act which permit NIH to use up to $100,000,000 of research funding for alterations and repairs. The Committee directs NIH to continue to provide quarterly updates of its efforts to develop best practices and its maintenance and construction plans for projects whose cost exceeds $5,000,000, including any changes to those plans and the original baseline estimates for individual projects. The Committee directs NIH to provide a detailed briefing on the proposed Center for Pediatric and Adult Diseases, including how the size and activities in the Center compare to the footprint and activities in the existing facilities that would be demolished to make way for it. Finally, the Committee also directs NIH to describe in its fiscal year 2025 and future CJs how the projects requested in its budgets tie to its capital planning process, including the Research Facilities Advisory Committee’s role in determining which projects are selected for inclusion in the budget.

NIH INNOVATION ACCOUNT, CURES ACT

<table>
<thead>
<tr>
<th>Appropriations, 2023</th>
<th>$419,000,000</th>
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<tbody>
<tr>
<td>Budget estimate, 2024</td>
<td>407,000,000</td>
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<tr>
<td>Committee recommendation</td>
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The Committee recommendation includes $235,000,000 to be spent from the NIH Innovation Account for the All of Us precision medicine initiative. The Committee expects NIH to transfer funding shortly after enactment of this act.
<table>
<thead>
<tr>
<th>Item</th>
<th>2023 appropriation</th>
<th>Budget estimate</th>
<th>Committee recommendation</th>
<th>Senate Committee recommendation compared with (+ or –)</th>
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<tbody>
<tr>
<td></td>
<td>2023 appropriation</td>
<td>Budget estimate</td>
<td>Committee recommendation</td>
<td>Senate Committee recommendation compared with (+ or –)</td>
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<td><strong>NATIONAL INSTITUTES OF HEALTH</strong></td>
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<tr>
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<tr>
<td>National Institute of Neurological Disorders and Stroke (NINDS)</td>
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<td>(86,000)</td>
<td>(86,000)</td>
<td>(- 139,000)</td>
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<td>Budget (FY 2020)</td>
<td>Budget (FY 2021)</td>
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<tr>
<td>Total, NIH program level</td>
<td>47,459,000</td>
<td>48,270,089</td>
<td>47,724,000</td>
<td>+265,000</td>
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<tr>
<td>Total, NIH program level (excluding ARPA-H)</td>
<td>47,459,000</td>
<td>48,270,089</td>
<td>47,724,000</td>
<td>+265,000</td>
</tr>
</tbody>
</table>

Total, NIH program level (excluding ARPA-H)