NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY

Appropriations, 2023	$1,627,285,000
Budget estimate, 2024	1,631,968,000
Committee recommendation	1,447,805,000

The Committee's recommendation provides $1,447,805,000 for the National Institute of Standards and Technology [NIST]. The recommendation is $179,480,000 below the fiscal year 2023 enacted level and $184,163,000 below the budget request. Up to $9,000,000 may be transferred from the Scientific and Technical Research and Services [STRS] account to the Working Capital Fund.

NIST's mission is to promote U.S. innovation and industrial competitiveness by advancing measurement science, standards, and technology in ways that enhance economic security and improve our quality of life.

SCIENTIFIC AND TECHNICAL RESEARCH AND SERVICES

(INCLUDING TRANSFER OF FUNDS)

Appropriations, 2023	$953,000,000
Budget estimate, 2024	994,948,000
Committee recommendation	1,021,263,000

The Committee's recommendation provides $1,021,263,000 for NIST STRS. The recommendation is $68,263,000 above the fiscal year 2023 enacted level and $26,315,000 above the budget request. The Committee directs NIST to provide a detailed spending plan for NIST's highest priority laboratory programs that describes resources used for each program, project, or activity [PPA].

Quantum Information Science [QIS].—The Committee supports NIST's research program in QIS, as authorized in section 201 of the National Quantum Initiative Act (Public Law 115–368) and provides up to the requested level for these activities. QIS promises to yield revolutionary new approaches to computing, sensing, and communication, among others.

Cybersecurity.—The Committee remains concerned about the number of cyberattacks affecting the Nation and provides no less than the fiscal year 2023 enacted level for cybersecurity research, outreach, industry partnerships, and other activities at NIST, including the National Cybersecurity Center of Excellence [NCCoE]. Within the funds provided, the Committee directs NIST to support National Initiative for Cybersecurity Education [NICE] cooperative

agreements with Regional Alliances and Multistakeholder Partnerships to Stimulate for cybersecurity education and workforce development as authorized in section 9401 of the William M. (Mac) Thornberry National Defense Authorization Act for Fiscal Year 2021 (Public Law 116–283).

In addition, the Committee encourages NIST to bolster the technology foundations and put in place the practical steps needed to ensure the security and integrity of the technology supply chain, in partnership with the private sector, in accordance with Executive Order 14028. NIST is also encouraged to reduce the backlog at the Cryptographic Module Validation Program.

Cybersecurity of Genomic Data.—The Committee provides no less than the fiscal year 2023 enacted level for NIST and NCCoE to continue the cybersecurity of genomic data use case. NIST and NCCoE shall continue to partner with non-governmental entities that have existing capability to research and develop state-of-the-art cybersecurity technologies for the unique needs of genomic and biomedical-based systems.

Artificial Intelligence [AI].—The Committee provides up to the fiscal year 2023 enacted level to expand NIST's ongoing AI research and measurement science efforts. The Committee directs NIST to develop standards, metrics, and tools for government, corporate, and academic uses of AI to train and test systems, model AI behavior, and compare systems. The Committee directs NIST to continue the multi-stakeholder process of developing a framework for managing risks related to the reliability, robustness, and trustworthiness of AI systems.

Within the funding provided, the Committee encourages NIST to continue to improve and meet the growing demand for the Facial Recognition Vendor Test. The Committee is aware that this test is an important resource for government, commercial, and academic developers to assess the quality of their facial recognition technologies. As more companies and government users invest in this technology, the test will continue to be a critical step for responsible use. The Committee encourages NIST to: expand testing to include a more diverse combination of demographics and environmental settings in the test data, develop educational material and work on image quality standards for data collection, expand testing to improve enhanced privacy technologies for better template protection, and expand existing testing infrastructures in support of these improvements and provides up to the fiscal year 2023 enacted level for those purposes.

Forensic Sciences.—The Committee provides no less than the fiscal year 2023 enacted level for forensic science research, including level funding to support the Organization of Scientific Area Committees and technical merit evaluations.

Circular Economy.—The Committee provides up to the requested amount for circular economy related research. In addition, the Committee provides no less than the fiscal year 2023 enacted level for competitive external grants for academic institutions to investigate plastic and polymeric materials, as well as novel methods to characterize both known and newly-developed materials. Such investigations should address ways to increase the strength of recycled plastics and better understand mechanical properties including

tensile stress, compressive stress, thermal properties, and nanostructure of polymeric materials that could serve as industry standards for recycled plastic products.

Climate and Energy Measurement, Tools, and Testbeds.—The Committee recognizes the important role that NIST laboratories play to address climate change through climate measurements and modeling of greenhouse gas emissions as well as research and tools to build more resilient communities. The Committee provides no less than the fiscal year 2023 enacted level for Climate and Energy Measurement, Tools, and Testbeds.

Forward-Looking Building Standards.—The Committee remains concerned about how climate change will impact the built environment, and that standards previously set with an assumption of a stable climate system will expose many Federal and non-Federal investments to significant, but avoidable, risk. Therefore, within funding for Climate and Energy Measurement, Tools, and Testbeds, the Committee directs NIST to continue to coordinate work with NOAA and other appropriate Federal agencies and interested non-Federal parties, as needed, to identify a consistent and authoritative set of climate information that emphasizes forward-looking climate data and projections that should be utilized in the standard-setting process. These data shall include projections of both chronic climate impacts, such as sea level rise, and extreme weather events, like hurricanes, floods, and droughts. Further, the Committee directs NIST to provide technical assistance to standards developing organizations regarding use of the identified forward-looking information. No later than 90 days after the enactment of this act, NIST shall report to the Committee regarding progress the agency has made in aiding both Federal and non-Federal bodies in developing standards, building codes, and voluntary standards that take into account increasingly extreme weather events and other climate change challenges.

Urban Dome.—The Committee recognizes the value of NIST's Greenhouse Gas Measurements Program and Urban Dome Initiative and the importance of accurate measurement science for environmental monitoring and human health. These cost-effective capabilities expand and broaden NIST laboratory capabilities for investigating and developing measurement tools that support independent means for determining the accuracy of emissions inventory data at urban and regional scales. The Committee provides up to the fiscal year 2023 enacted amount for the Greenhouse Gas Measurements Program and Urban Dome Initiative to continue support for the established testbed activities and to expand sensor network deployments locations.

Public Health Risk to First Responders.—The Committee directs NIST, in consultation with other relevant Federal agencies as appropriate, to conduct a study on firefighter occupational exposure to environmental sources of per- and polyfluoroalkyl substances (commonly known as "PFAS"). In carrying out the study, NIST shall examine the identity, prevalence, and concentration of PFAS in common work environments of firefighters, such as fire scenes, fire trucks, and fire stations. No later than 180 days after the completion of the study, NIST shall provide Congress with a final report describing the findings of the study including recommenda-

tions on what additional research or technical improvements should be pursued to avoid unnecessary occupational exposure of firefighters to PFAS from environmental sources.

Regenerative Medicine Standards.—The Committee is encouraged by the work of NIST and the Standards Coordinating Body to develop comprehensive standards for the development and evaluation of regenerative medicine products to fulfill the regenerative medicine standards provisions enacted under the 21st Century Cures Act (Public Law 114–255). The Committee recognizes the need to continue ongoing efforts to develop and maintain standards and provides $3,000,000 to continue to support those activities. The Committee also understands that additional efforts are needed to ensure proper use of these standards by educating product developers and disseminating these standards nationally. The Committee provides $1,500,000 to support the development of curricula in partnership with academic institutions and other stakeholders such as through establishment of consortia for workforce training around the use of regenerative medicine standards.

Composites.—The Committee encourages NIST to work with academic institutions, in collaboration with State and industry partners, to develop new composite technologies to solve problems in the manufacturing space and related materials industries. Further, the Committee urges NIST to work with relevant Federal agencies, including the Federal Highway Administration, the U.S. Army Corps of Engineers, and the Environmental Protection Agency, to aggregate existing standards and test methods for the use of composites and other innovative materials in infrastructure, as well as to identify barriers to broader market adoption.

Pyrrhotite Testing and Mitigation.—The Committee provides no less than the fiscal year 2023 enacted level for NIST to continue studying and developing a reliable and cost-effective standard for testing for the presence of excessive amounts of the mineral pyrrhotite in concrete used in residential foundations and municipal structures, which can cause premature cracking and structural failure. In addition to funding widespread sample collection and studies needed to develop standardized tests, the Committee directs NIST to investigate mitigation strategies for concrete structures that may not yet have developed cracking but contain pyrrhotite.

NIST Center for Neutron Research [NCNR].—The Committee provides up to the requested level for the repair and upgrade of NCNR physical infrastructure as well as to right-size operations and safety staffing and training.

Critical and Emerging Technologies.—The Committee recognizes NIST's important role in U.S. engagement on standards development across areas of critical and emerging technologies. As our global competitors increase focus on international standards development, it is important for NIST, in partnership with the private sector, to maintain global leadership. Therefore, the Committee provides $12,000,000 above the fiscal year 2023 enacted level for these purposes.

Malcolm Baldrige Performance Excellence Program.—The Committee recognizes the value of the Baldrige Program and its impact on the performance of organizations that adopt its best practices.

Therefore, the Committee provides no less than the fiscal year 2023 enacted level for the Malcolm Baldrige Performance Excellence Program. The Committee commends the Baldrige program's efforts to improve the adoption of the NIST Cybersecurity Framework and encourages the program to build more partnerships and self-assessment tools to help organizations with their cybersecurity risk management.

Dr. David Satcher Cybersecurity Education Grant Program.—The recommendation includes up to $2,000,000 to implement the Dr. David Satcher Cybersecurity Education Grant Program.

NIST EXTERNAL PROJECTS

The Committee's recommendation provides $118,795,000 for NIST External Projects as detailed in the table below. The Committee directs NIST to provide the amounts listed in the table, and NIST shall perform the same level of oversight and due diligence as with any other external partners.

NIST EXTERNAL PROJECTS

Recipient	Project Purpose	Recommended ($)
Advanced Regenerative Manufacturing Institute (ARMI).	Build-out of a Biofabrication Standards-Related Test Lab	1,200,000
Arkansas State University	Center for Advanced Materials and Steel Manufacturing	10,000,000
Bradley University	Electrical Power Initiative	950,000
Columbia Gorge Community College.	Convergent Technologies and Advanced Manufacturing Equipment	300,000
Gonzaga University	Integrated Science and Engineering Facility	1,847,000
Lewis University	Semiconductor Research Equipment	900,000
Lorain County Community College District.	District MEMS Program & Training Expansion	500,000
Louisiana Tech University	Semiconductor Infrastructure and Technology Equipment Upgrades	3,500,000
Marshfield Chamber of Commerce	Marshfield Coastal Academy and Hazard Laboratory	1,000,000
Michigan State University	Improved Techniques and Standards Development for Tracking Environmental PFAS.	1,350,000
Michigan Technological University	Standards Development Center for Automated Driving Systems in Inclement Winter Weather.	2,000,000
Mississippi State University	Center for Simulated Environments and Experiences in STEM	4,000,000
Norwich University	Operational Technology Advance Cyber Architecture	250,000
Oklahoma State University	Oklahoma Aerospace Institute for Research and Education (OAIRE)	5,500,000
Oregon Institute of Technology (Oregon Tech).	Solar Manufacturing Research Equipment	1,045,000
Penn State Erie, The Behrend College.	Equipment for String-Level Testing and to Establish the First Fully-Serviced Heavy Haul Battery Testing Center in the United States.	2,500,000
Pittsburg State University	STEM Ecosystem	5,000,000
Plymouth State University	Cybersecurity Program	1,000,000
Rochester Institute of Technology	Battery Prototyping Center Equipment	1,250,000
The Evergreen State College	Acquisition of Laboratory Equipment	2,135,000
University at Albany, State University of New York.	Cybersecurity Incident Response Studio (CREST)	1,250,000
University at Buffalo	Center for Accelerated Innovation through Materials (AIM): Enabling the Transition to a Clean Energy Economy (AIM for Clean Energy).	1,250,000
University of Arkansas	Center for Large-Scale Testing of Seismic Systems	5,000,000
University of Arkansas Fay Jones School of Architecture and Design.	Center for Design and Materials Innovation	5,000,000
University of Delaware	Biopharmaceutical Manufacturing Equipment	7,250,000
University of Maine System	Analytical Laboratory Equipment	1,900,000
University of Maine System	Forest Biomaterials Innovation Center Equipment	2,500,000
University of Maryland, Baltimore County.	UMBC Quantum Science Institute	1,500,000

NIST EXTERNAL PROJECTS—Continued

Recipient	Project Purpose	Recommended ($)
University of Mississippi Medical Center.	Cancer Research Laboratories	2,800,000
University of Rhode Island	Marine Geological Samples Laboratory	1,150,000
University of Rhode Island	URI STEEP	600,000
University of Rochester	Advanced Quantum Research Equipment	1,250,000
University of South Carolina	Semiconductor Manufacturing	4,500,000
University of Southern Mississippi	Sustainable Materials Validation and Certification Lab	5,500,000
University of Tulsa	Robotics Research and Instrumentation	5,500,000
University of Washington	Advanced Nano & Quantum Systems	3,500,000
University of Washington	Molecular Analysis Facility Instrumentation	2,800,000
University of Washington	Interdisciplinary Engineering Building Equipment	5,000,000
University of Washington Tacoma	Milgard Engineering Labs Buildout	2,500,000
Washington State University	Transmission Electron Microscope	2,500,000
West Virginia University	Liquid Chromatography Mass Spectrometry Equipment	233,000
West Virginia University	Electron Microscopy-Based Equipment and Research	1,140,000
Western Washington University	Advanced Technology Laboratory and Research Equipment	2,425,000
Wichita State University / National Institute for Aviation Research.	Advanced Manufacturing Technology and Equipment	5,000,000
Woodwell Climate Research Center	Science on the Fly: Clean River Water Data Collection, Monitoring, and Analysis.	250,000
WRC—Connected Communities	DigitalBridge Colorado—Phase 2	270,000

INDUSTRIAL TECHNOLOGY SERVICES

Appropriations, 2023	$212,000,000
Budget estimate, 2024	374,872,000
Committee recommendation	212,000,000

The Committee provides $212,000,000 for Industrial Technology Services. The recommendation is equal to the fiscal year 2023 enacted level and $162,872,000 below the budget request.

Hollings Manufacturing Extension Partnership Program [MEP].—For the MEP program, the Committee provides $175,000,000, which is equal to the fiscal year 2023 enacted level, to respond to the critical national needs of small- and medium-sized enterprises, including by increasing the number of enterprises that the program assists and by increasing awareness and usage of existing supplier scouting tools to fill supply chain gaps and support domestic manufacturing.

Manufacturing USA.—The Manufacturing USA program promotes American competitiveness by fostering the development of new manufacturing techniques and fields, accelerating commercialization, and providing technical assistance to U.S. companies.

For the Manufacturing USA program, the Committee provides $37,000,000, which is equal to the fiscal year 2023 enacted level.

CONSTRUCTION OF RESEARCH FACILITIES

Appropriations, 2023	$462,285,000
Budget estimate, 2024	262,148,000
Committee recommendation	214,542,000

The Committee provides $214,542,000 for construction of research facilities, including not less than $134,000,000 for Safety, Capacity, Maintenance, and Major Repairs. The recommendation is $247,743,000 below the fiscal year 2023 enacted level and $47,606,000 below the budget request.

NIST EXTRAMURAL CONSTRUCTION

The Committee provides $80,242,000 for NIST Extramural Construction projects as detailed in the table below. The Committee directs NIST to provide the amounts listed the in table, and NIST shall perform the same level of due diligence as with any other external partners.

NIST EXTRAMURAL CONSTRUCTION

Recipient	Project Purpose	Recommended ($)
Kansas State University Salina	Aerospace Innovation and Training Hub	28,000,000
KU Innovation Park	Kansas National Security Innovation Center	22,000,000
University of Maine System	Analytical Laboratory Modernization and Expansion	3,100,000
University of Maine System	Aquaculture Workforce Innovation Center	7,000,000
University of Maine System	Forest Biomaterials Innovation Center	7,500,000
University of New Hampshire	The Edge Innovation Community	5,000,000
Washington State University	Hot Cell Facility Construction	7,642,000

CREATING HELPFUL INCENTIVES TO PRODUCE SEMICONDUCTORS [CHIPS] FOR AMERICA FUND

Division A of Public Law 117–167 established the CHIPS for America Fund. The Committee allocates the funds according to the amounts listed in the following table.

DEPARTMENT OF COMMERCE ALLOCATION OF NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY FUNDS: CHIPS ACT FISCAL YEAR 2024

[In thousands of dollars]

Account—Project and Activity	Amount
Section 9902:	
Creating Helpful Incentives to Produce Semiconductors (CHIPS) for America Fund	$4,996,100
Administrative Expenses	*96,100*
Office of Inspector General, Salaries and Expenses	3,900
Total, Section 9902	5,000,000
Section 9906:	
Industrial Technology Services	1,245,000
National Semiconductor Technology Center	*1,100,000*
Advanced Packaging Manufacturing Program	*95,000*
Manufacturing USA Institute	*50,000*
Scientific and Technology Research & Services	53,900
NIST Metrology Program	*29,000*
Administrative Expenses	*24,900*
Office of Inspector General, Salaries and Expenses	1,100
Total, Section 9906	1,300,000

National Institute of Standards and Technology					
Scientific and Technical Research and Services	953,000	994,948	1,021,263	+68,263	+26,315
(transfer out)	(−9,000)	(−9,000)	(−9,000)		
Industrial Technology Services	212,000	374,872	212,000		−162,872
Manufacturing extension partnerships	(175,000)	(277,202)	(175,000)		(−102,202)
Manufacturing USA	(37,000)	(97,670)	(37,000)		(−60,670)
Construction of research facilities	462,285	262,148	164,542	−297,743	−97,606
Construction of Research Facilities (emergency)			50,000	+50,000	+50,000
Subtotal, Construction of Research Facilities reclassification	462,285	262,148	214,542	−247,743	−47,606
Working Capital Fund (by transfer)	(9,000)	(9,000)	(9,000)		
Total, National Institute of Standards and Technology	1,627,285	1,631,968	1,447,805	−179,480	−184,163