vide support for activities provided under section 7 of Public Law 98–549. As part of these activities, NTIA may provide assistance and guidance in policy and technical training to impart best practices to information technology professionals from developing countries.

National 5G Strategy.—The Committee supports the development of secure 5G networks that are developed using technology and equipment that is verified to be secure from foreign surveillance or influence. The Committee believes it is in the best interest of the national and economic security of the United States to implement a strong national 5G strategy as outlined in Public Law 116–129.

UNITED STATES PATENT AND TRADEMARK OFFICE

SALARIES AND EXPENSES

(INCLUDING TRANSFERS OF FUNDS)

The Committee recommends $3,695,295,000 for the United States Patent and Trademark Office (PTO), the full amount of fiscal year 2021 fee collections estimated by the Congressional Budget Office. PTO shall continue to provide monthly reports to the Committee on PTO's actual and projected fee collections, application volumes, performance, and staffing.

Patent End-2-End (PE2E).—PTO shall continue to provide quarterly reports to the Committee on the status of PE2E, including the proposed retirement of legacy systems, cost savings associated with those retirements, and any efficiencies achieved in patent processing because of these investments.

NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY

The Committee recommends $1,044,000,000 for National Institutes of Standards and Technology (NIST). In addition, the Coronavirus Aid, Relief, and Economic Security Act (CARES Act) (Public Law 116–136) included $66,000,000 for NIST to prevent, prepare for, and respond to coronavirus, including $6,000,000 to support continuity of operations and measurement science to support viral testing and biomanufacturing; $50,000,000 for Hollings Manufacturing Extension Partnership to assist manufacturers; and $10,000,000 for the National Network for Manufacturing Innovation (also known as “Manufacturing USA”) to support development and manufacturing of medical countermeasures and biomedical equipment and supplies.

SCIENTIFIC AND TECHNICAL RESEARCH AND SERVICES

(INCLUDING TRANSFER OF FUNDS)

The Committee recommends $789,000,000 for NIST's Scientific and Technical Research and Services (STRS) programs, which is $35,000,000 above fiscal year 2020 and $136,973,000 above the request. The recommendation rejects the proposed reductions to Advanced Manufacturing and Material Measurements; Fundamental Measurement, Quantum Science, and Measurement Dissemination; Advanced Communications, Networks, and Scientific Data Systems; Health and Biological Systems Measurements; Physical In-
structure and Resilience; NIST User Facilities; Office of Special Programs; Standards Coordination Office; and the NIST Center of Excellence Program and instead provides no less than the fiscal year 2020 level for these programs.

Quantum Information Science.—The Committee provides no less than $8,000,000 above the fiscal year 2020 level for Quantum Information Science, as authorized in the National Quantum Initiative Act to support and expand basic and applied quantum information science and technology research and development (R&D) of measurement science and standards. Further, the Committee encourages NIST to expand its collaboration with other entities, including industry, universities, and Federal laboratories, to help advance the field of quantum information science and engineering.

Artificial Intelligence.—The recommendation includes no less than $10,000,000 above the fiscal year 2020 level to continue NIST's research efforts related to Artificial Intelligence (AI), which has the potential to produce transformative technologies and scientific breakthroughs that will improve Americans' lives.

Framework for Managing AI Risks.—The Committee recognizes the economic, national security, and societal impacts of artificial intelligence (AI) and the importance of maintaining U.S. leadership in AI development and implementation. The Committee believes that coordination is needed between the Federal government and stakeholder organizations to ensure that AI initiatives support reliable, robust, and trustworthy systems. Within the increase provided for AI, the Committee directs NIST to establish a multi-stakeholder process to identify the necessary steps needed to develop a framework for managing risks related to the reliability, robustness, and trustworthiness of AI systems. Within 180 days of enactment of this Act, NIST shall establish the process by which it will engage with stakeholders, and identify the timeline needed to develop the framework. NIST shall provide the Committee with biannual updates on the progress of these efforts until the framework is finalized and publicly available.

Data Characterization Standards in AI.—The recommendation encourages NIST to create a plan for interagency engagement with the private sector for the development of standards for data characterization for AI—which, for example, can ensure proper sample data attribution to help when querying different features to build auto detection models—as part of the work to support reliable, robust, and trustworthy systems that use AI technologies.

U.S. Leadership in AI.—The Committee commends NIST for the completion of the plan, “U.S. Leadership in AI,” and encourages NIST to implement its recommendations, as appropriate. Further, the Committee directs NIST, on behalf of the Department, and in consultation with the Office of Personnel Management, the Interagency Committee on Standards Policy, other interagency groups, and Federal agencies, as NIST considers appropriate, to develop a clear career development and promotion path that recognizes and encourages participation in and expertise in AI standards development within the Federal workforce. NIST is also directed, in coordination with appropriate Federal agencies, to understand AI standards strategies and initiatives of standards organizations, foreign governments and entities, to the extent practicable. No less than 180 days after the enactment of this Act, the Department shall
submit a report to the Committee on the steps it has taken to implement the recommendations of the U.S. Leadership in AI plan.

Greenhouse Gas Program and Urban Dome Initiative.—The Committee recognizes the significant value in NIST's Greenhouse Gas Program and Urban Dome initiative that seeks to leverage existing high-spatial density regional monitoring networks and external R&D partnerships. These cost-effective capabilities substantially 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 has included no less than $500,000 above the fiscal year 2020 level of funding for the Greenhouse Gas Program and Urban Dome Initiative to continue and expand sensor network deployments.

Cybersecurity and Privacy.—The proliferation of data generation, storage, and usage associated with the digital economy is making it increasingly important to protect that data with effective cryptography and privacy standards. The Committee is concerned that individual, corporate, and public-sector data privacy is continuously at risk from attacks by individual actors, criminal organizations, and nation-states. The Committee urges NIST to address the rapidly emerging threats in this field by furthering the development of new and needed cryptographic standards and technologies.

National Initiative for Cybersecurity Education.—The Committee notes with concern the shortage of cybersecurity professionals across the government and private sector, from entry level applicants to experienced professionals. The Committee therefore supports the National Initiative for Cybersecurity Education (NICE) and directs NIST to provide resources commensurate with the prior fiscal year for this effort.

Measurement Science Research for Advanced Manufacturing.—The Committee recognizes the critical importance of NIST's measurement science research to promote U.S. innovation and industrial competitiveness, specifically for advanced manufacturing methods and systems that help the Nation's manufacturers to invent, innovate, and create. The Committee directs the Institute to prioritize new STRS funds to achieve fundamental scientific understanding of manufacturing processes and equipment and to enable new smart manufacturing systems capabilities for high-priority metals-based additive manufacturing, manufacturing robotics, and cybersecurity for industrial control systems. The Committee acknowledges that collaborations with the private and public sectors, academic organizations, and standards development bodies will help to advance and disseminate measurement science research and support to U.S. manufacturers. The Committee provides up to $5,000,000 for competitive external grants for academic institutions to support research, development, and workforce training to overcome barriers to high-volume additive manufacturing of metals.

Textile research.—The Committee recognizes the importance of the U.S. textile industry and encourages NIST to pursue advanced textile and apparel research, including manufacturing techniques.

Calibration Laboratory for Oceanographic Sensors.—The Committee recognizes a critical need for capacity in calibration of ocean sensors that is inhibiting maximum use of ocean sensing tech-
nologies. The Committee encourages NIST to support these technologies.

_Pyrrhotite in Concrete Aggregate._—The Committee continues to be concerned that concrete foundations can crack and cause serious structural damage to the buildings they support. To address this threat, the recommendation provides no less than $2,000,000 to partner with academic institutions to study and develop a reliable and cost-effective standard for testing for the presence of excessive pyrrhotite in concrete used in residential, commercial, and municipal structures and a standard for the amount of pyrrhotite that requires mitigation efforts. These research and standards-setting efforts are needed due to the ongoing uncertainty regarding what level of pyrrhotite can cause concrete foundations to become structurally unsound, and what if anything can be done to slow, delay, or stop such damage.

_Forward Looking Building Standards._—The Committee is 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, the Committee directs NIST, in collaboration with other appropriate Federal agencies and interested non-Federal parties, 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. This effort shall serve to aid both Federal and non-Federal bodies to develop standards, building codes, and voluntary standards that take into account increasingly extreme weather events and other climate change challenges.

_Regenerative Medicine Standards._—The Committee commends NIST, the Food and Drug Administration, and the Standards Coordinating Body for continued work to implement the regenerative medicine standards provisions enacted under the 21st Century Cures Act (Public Law 114–255). Currently, work is underway to develop processes and criteria for identifying, prioritizing, and assessing the quality, safety, feasibility, and cost-benefit of such standards. The Committee provides $5,000,000 for NIST to improve measurement assurance and standards coordination for regenerative therapies, including: establishing a regenerative medicine assay validation and innovation core to provide laboratory support for evaluation of standardized assays, and conducting inter-laboratory studies to improve measurement assurance and develop appropriate reference materials.

_Forensic Sciences._—The Committee provides $22,500,000 for forensic science research, $3,700,000 above the fiscal year 2020 level. Within these funds, the Committee provides no less than $3,150,000 to support the Organization of 22 Scientific Area Committees, and no less than $1,200,000 to support technical merit evaluations previously funded by transfer from the Department of Justice.

_5G Telecommunications._—The Committee notes the importance of the development of 5G telecommunications technologies as a matter of job creation, economic development, and national security, and supports the goal to ensure American leadership in this field. In support of these efforts, the recommendation includes
$1,400,000 above the fiscal year 2020 level. Further, the Committee recognizes the importance of efficient spectrum allocation and use in the development of new broadband intensive technologies such as 5G networks. The Committee urges the National Institute of Standards and Technology in consultation with National Telecommunications and Information Administration to prioritize research and development funding to increase spectrum efficiency to ensure effective and speedy national rollout of 5G U.S. telecommunication networks.

**Direct Air Capture and Carbon Dioxide Removal.**—The Committee includes $3,500,000 for direct air capture and carbon dioxide removal research, specifically to increase work on developing standard reference materials and test procedures for direct air capture as well as to increase support for carbonate materials development, testing, and certification for construction markets.

**Disaster Resilience Research Grants.**—The Committee rejects the proposed elimination of Disaster Resilience Research Grants and instead provides no less than the fiscal year 2020 level.

**Malcolm Baldrige Performance Excellence Program.**—The Committee recognizes the value of the Baldrige Program and the impact that it has on the performance of organizations that adopt its best practices. Therefore, the Committee provides $2,500,000, an increase of $300,000 above fiscal year 2020, for the Malcolm Baldrige Performance Excellence Program to expand its e-learning capability.

**Cybersecurity Conformity Assessment Programs.**—The Committee instructs NIST, in collaboration with other relevant organizations, to report to the Committee no later than 270 days after the enactment of this Act on challenges and approaches to establishing and managing voluntary cybersecurity conformity assessment programs for information and communication technologies including federal cloud technologies.

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**INDUSTRIAL TECHNOLOGY SERVICES**

The Committee recommends $170,000,000 for Industrial Technology Services, which is $8,000,000 above fiscal year 2020 and $144,748,000 above the request. The Committee rejects the Administration’s proposed elimination of the Manufacturing Extension Partnership (MEP) program and instead provides $153,000,000 for MEP, $7,000,000 above the fiscal year 2020 level. The increase from the prior year shall be distributed equitably among the 51 MEP Centers based on the respective number of regional partners. The recommendation also includes $17,000,000 for the National Network for Manufacturing Innovation, also known as “Manufacturing USA.”

**Cybersecurity Training.**—Within the increase to MEP, the Committee directs NIST to maintain the core services of the MEP and encourages NIST to utilize existing expertise within its Information Technology Laboratory to increase cybersecurity technical training to small manufacturers to strengthen their cybersecurity capabilities given the troubling threats from state and non-state actors and other emerging threats.
CONSTRUCTION OF RESEARCH FACILITIES

The Committee recommends $85,000,000 for NIST construction. NIST shall continue to provide updates on the projects funded within this account, to include milestones and total amount of funding necessary for completion.

Safety, Capacity, Maintenance, and Major Repairs (SCMMR).—Within the amount provided for Construction of Research Facilities, the agreement includes no less than $75,000,000 for NIST to address its most pressing SCMMR projects.

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

The Committee recommends a total of $5,454,068,000 in discretionary funds for the National Oceanic and Atmospheric Administration (NOAA), which is $101,890,000 above fiscal year 2020 and $827,661,000 above the President’s request. In addition, the Coronavirus Aid, Relief, and Economic Security Act (CARES Act) (Public Law 116–136) included $20,000,000 for NOAA to prevent, prepare for, and respond to coronavirus as well as $300,000,000 for Assistance to Fishery Participants to offset economic injury precipitated by the coronavirus.

The Committee’s program and project recommendations for NOAA are included in the consolidated funding tables below and in narrative direction throughout this report. The Committee reminds NOAA that any deviations from the amounts included in the table below are subject to section 505 requirements of this Act. When executing its budget for fiscal year 2021, NOAA shall incorporate the funding levels established in both the table and the narrative direction. NOAA is reminded that comity has existed between the Congress and the Executive Branch with respect to abiding by language included in this report and in the accompanying bill. The Committee expects NOAA to respect this long-standing practice.

Tribal Allocation of CARES Act Funds.—The Committee is aware of concerns raised by Native American tribes regarding the lack of formal government-to-government consultation and the methodology used by NOAA to allocate funds provided in Sec. 12005 of the CARES Act (Public Law 116–136) which relied on annual revenues by sector rather than recorded losses to determine proportional allocations. The Committee reminds NOAA of its responsibility to uphold Federal treaty and trust obligations during all engagements with tribal interests, regardless of any exigent circumstances.

Sexual Assault and Sexual Harassment.—The Committee remains highly concerned by the threat of sexual assault and sexual harassment faced by individuals in the workplace, especially those in nontraditional work settings such as NOAA research vessels or private fishing vessels. The Committee appreciates the initial steps NOAA has taken in addressing these threats. To further this work, the Committee provides no less than $1,700,000 above the fiscal year 2020 level and directs NOAA to prioritize and expedite the hiring of staff to reduce these risks and to provide assistance and counseling to victims.

Extramural research.—The Committee continues to support NOAA’s ongoing collaboration with academia and the private sector