UNITED STATES PATENT AND TRADEMARK OFFICE

SALARIES AND EXPENSES
(INCLUDING TRANSFERS OF FUNDS)

The agreement includes language making available to the United States Patent and Trademark Office (USPTO) $3,695,295,000, the full amount of offsetting fee collections estimated for fiscal year 2021 by the Congressional Budget Office. The agreement transfers $2,000,000 to the Office of Inspector General to continue oversight and audits of USPTO operations and budget transparency.

The Secretary and the USPTO Director are directed to continue working with ITA and the Department of State to ensure that USPTO’s intellectual property attachés are included in discussions and negotiations at the counselor rank and above.

NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY

The agreement includes $1,034,500,000 for the National Institute of Standards and Technology (NIST).

SCIENTIFIC AND TECHNICAL RESEARCH AND SERVICES
(INCLUDING TRANSFER OF FUNDS)

The agreement provides $788,000,000 for NIST’s Scientific and Technical Research and Services (STRS) account, including an increase of $16,350,000 for adjustments to base. The agreement adopts the following within STRS: (1) House direction on Quantum Information Science and provides $6,500,000 above the fiscal year 2020 enacted amount; (2) House direction on Greenhouse Gas Program and Urban Dome Initiative and $200,000 above the fiscal year 2020 enacted amount; (3) House direction on Direct Air Capture and Carbon Dioxide Removal and $3,000,000; and (4) House direction on Forward Looking Building Standards. For fiscal year 2021, NIST is directed to follow prior year report language, included in Senate Report 116–127 and adopted in Public Law 116–93, on the following topics: Helmet Safety and Facial Recognition Vendor Test. House language regarding 5G telecommunications funding is not adopted.
**NIST Diversity and Inclusion.**—NIST is encouraged to take discrete steps to promote racial and cultural acceptance and diversity within its workforce. Within 180 days of enactment of this Act, NIST is directed to submit a report analyzing the current racial and cultural makeup of the agency; planned efforts to recruit, retain, and advance applicants and employees critical to promoting greater racial and cultural diversity, and the outcomes of these efforts; and any additional steps and recommendations planned to promote greater racial and cultural acceptance and diversity throughout the NIST workforce, including the development and analysis of metrics to evaluate success.

**Artificial Intelligence (AI).**—The agreement includes no less than $6,500,000 above the fiscal year 2020 level to continue NIST’s research efforts related to AI and adopts House language on Data Characterization Standards in AI.

House language on Framework for Managing AI Risks is modified to direct NIST to establish a multi-stakeholder process for the development of an AI Risk Management Framework regarding the reliability, robustness, and trustworthiness of AI systems. Further, within 180 days of enactment of this Act, NIST shall establish the process by which it will engage with stakeholders throughout the multi-year framework development process.

**Cybersecurity.**—The agreement includes no less than the fiscal year 2020 enacted level for cybersecurity research, outreach, industry partnerships, and other activities at NIST, including the National Cybersecurity Center of Excellence (NCCoE) and the National Initiative for Cybersecurity Education (NICE). Within the funds provided, the agreement encourages NIST to establish additional NICE cooperative agreements with regional alliances and multi-stakeholder partnerships for cybersecurity workforce and education.

**Cybersecurity of Genomic Data.**—The agreement includes no less than $1,250,000 for NIST and NCCoE to initiate a use case, in collaboration with industry and academia, to research the cybersecurity of personally identifiable genomic data, with a particular focus on better securing deoxyribonucleic acid sequencing techniques, including clustered regularly interspaced short palindromic repeat (CRISPR) technologies, and genomic data storage architectures from cyber threats. NIST and NCCoE should look to partner with entities who have existing capability to research and develop state-of-the-art cybersecurity technologies for the unique needs of genomic and biomedical-based systems.
Industrial Internet of Things (IIoT).—The agreement includes no less than the fiscal year 2020 enacted amount for the continued development of an IIoT cybersecurity research initiative and to partner, as appropriate, with academic entities and industry to improve the sustainable security of IIoT devices in industrial settings.

Measurement Science Research for Advanced Manufacturing.—The agreement modifies House language on Measurement Science Research for Advanced Manufacturing to encourage NIST to prioritize new STRS funds for this work.

Pyrrhotite in Concrete Aggregate.—The agreement provides no less than $2,000,000 for NIST 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.

Forensic Sciences.—The agreement provides an increase of $1,000,000 above the fiscal year 2020 level for forensic sciences, including 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.

Training Officers of the Court.—No later than 90 days after enactment of this Act, NIST is directed to submit a plan for how to implement training to help officers of the court understand the science and concepts underlying the professional analyses of forensic experts. The plan should include staffing needs, necessary funding required, and possible topics of instruction.

Plastics and Polymeric Materials.—The agreement provides an increase of $250,000 above the fiscal year 2020 enacted amount, 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.

Graphene Research and Commercialization.—The agreement includes no less than the fiscal year 2020 enacted amount for NIST to fund and pursue graphene research activities with industry and academic institutions that have expertise, existing capabilities, and infrastructure related to the commercial application of graphene.
Unmanned Aerial Vehicle (UAV) Challenges and Credentialing.—The agreement includes a total of $3,250,000 for NIST’s UAV research challenges and credentialing program. Within the funding provided, NIST shall continue to partner with academic institutions to execute UAV prize-based challenges that focus on expanding the role that UAVs could play in emergency response operations. In addition, NIST shall use no less than $1,000,000 of the funding provided to partner with relevant academic institutions to establish the measurements and standards infrastructure necessary for credentialing remote pilots. This effort should include implementation and demonstration of distributed pilot training and evaluation using standard test methods and also support flight test simulations.

Public Health Risk to First Responders.—The agreement provides no less than the fiscal year 2020 enacted level for NIST to continue the study of new and unused personal protective equipment worn by firefighters to determine the prevalence and concentration of per-and polyfluorooalkyl substances (PFAS) in the equipment, as well as the extent to which PFAS may be released from the gear during normal wear and under what conditions.

INDUSTRIAL TECHNOLOGY SERVICES

The agreement includes $166,500,000 in total for Industrial Technology Services, including $150,000,000 for the Hollings Manufacturing Extension Partnership, an increase of $4,000,000 above the fiscal year 2020 enacted level. The agreement further provides $16,500,000 for the Manufacturing USA Program, formerly known as the National Network for Manufacturing Innovation. Within the funding provided for Manufacturing USA, no more than $5,000,000 may be used for coordination activities, of which up to $1,000,000 may be used to support the U.S. Food and Drug Administration’s participation in biomanufacturing innovation institutes; $10,000,000 shall be used for the continuation of the existing NIST-funded institute; and $1,500,000 shall be for a competitive grant program to develop technology roadmaps for promising advanced manufacturing clusters.

CONSTRUCTION OF RESEARCH FACILITIES

The agreement includes $80,000,000 for Construction of Research Facilities, of which no less than $70,000,000 is for NIST to address its most pressing Safety, Capacity, Maintenance, and Major Repairs projects.
Facilities Report.—NIST is directed to contract with an independent entity to develop a report that assesses the comprehensive capital needs of NIST’s campuses. The report, at a minimum, should identify facilities in greatest need of repair, describe the work needed to bring them up to current standards, and include cost estimates for each project. NIST shall provide the report with its recommendations to the Committees no later than 1 year after the date of the contract agreement between NIST and the contracted entity.

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

Coastal Inundation Forecasting and Resilience.—House direction regarding Coastal Inundation Forecasting and Resilience is modified to direct the National Oceanic and Atmospheric Administration (NOAA), rather than the Office of Oceanic and Atmospheric Research, to develop and initiate a cross-line office research agenda as described in the House report. As part of this effort, NOAA shall consider the establishment of a Cooperative Institute for Coastal Resilience and Adaptation that could benefit existing coastal resilience programs by providing additional research, data collection, experience, and strengthened relationships with institutions conducting coastal resilience and adaptation research and applied science activities.

OPERATIONS, RESEARCH, AND FACILITIES
(INCLUDING TRANSFER OF FUNDS)

The agreement includes a total program level of $4,103,971,000 under this account for NOAA’s coastal, fisheries, marine, weather, satellite, and other programs. This total funding level includes $3,840,300,000 in direct appropriations, a transfer of $246,171,000 from balances in the “Promote and Develop Fishery Products and Research Pertaining to American Fisheries” fund, and $17,500,000 derived from recoveries of prior year obligations.

The following narrative descriptions and tables identify the specific activities and funding levels included in this Act.

National Ocean Service (NOS).—$619,700,000 is for NOS Operations, Research, and Facilities.
<table>
<thead>
<tr>
<th>FY 2020</th>
<th>FY 2021 Request</th>
<th>Final Bill vs Enacted</th>
<th>Final Bill vs Request</th>
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<tbody>
<tr>
<td>National Institute of Standards and Technology</td>
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<tr>
<td>Scientific and Technical Research and Services (transfer out)</td>
<td>754,000</td>
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<td>Industrial Technology Services</td>
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<td>Manufacturing extension partnerships</td>
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<td>Manufacturing USA</td>
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<td>(16,000)</td>
<td>(16,000)</td>
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<td>Construction of research facilities (Legislative Proposal)</td>
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<td>Working Capital Fund (by transfer)</td>
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<td>1,011,923</td>
<td>1,034,500</td>
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</tbody>
</table>

| National Oceanic and Atmospheric Administration |
| Operations, Research, and Facilities (by transfer) | 3,783,939 | 3,165,124 | 3,840,300 | +76,361 | +675,176 |
| Promote and Develop Fund (transfer out) | (-174,774) | (-183,834) | (-246,171) | (-71,397) | (-62,337) |
| Subtotal | 3,783,939 | 3,165,124 | 3,840,300 | +76,361 | +675,176 |