

Appropriations Update: House Appropriations Committee Approves FY 2022 Commerce, Justice, Science Appropriations Bill

Lewis-Burke Associates LLC – July 19, 2021

On July 15, the House Appropriations Committee approved its fiscal year (FY) 2022 Commerce, Justice, Science, and Related Agencies (CJS) appropriations bill by a party-line vote of 33 - 26. The bill would provide a total of \$81.3 billion in discretionary funding for the National Science Foundation (NSF), National Aeronautics and Space Administration (NASA), National Oceanic and Atmospheric Administration (NOAA), National Institute of Standards and Technology (NIST), Economic Development Administration (EDA), and Department of Justice (DOJ), among other programs. This allocation is \$10 billion more than last year's House CJS bill. The bill would provide significant increases compared to FY 2021 funding levels across its portfolio, but in many cases these increases fall short of the proposed growth in the President's FY 2022 budget request.

The top-level funding levels for agencies relevant to the research community are as follows:

- **NSF** would be funded at **\$9.63 billion**, \$1.15 billion or 13.1 percent above the FY 2021 enacted level. This is \$535 million or 5.3 percent below the budget request.
- **NASA** would receive **\$25.04 billion**, \$1.77 billion or 7.6 percent the FY 2021 enacted level. This is \$236.9 million or 0.9 percent over the budget request.
- **NOAA** would be funded at **\$6.46 billion**, \$1.03 billion or 18.9 percent above the FY 2021 enacted level. This is \$525.2 million or 7.5 percent less than the budget request.
- **NIST** would be funded at **\$1.37 billion**, \$334.6 million or 32 percent above the FY 2021 enacted level. This is \$128.1 million or 8.6 percent below the budget request.
- **EDA** would be funded at **\$433 million**, \$87 million or 25.1 percent above the FY 2021 enacted level. This is flat compared to the budget request.
- **DOJ** would be funded at approximately **\$36 billion**, \$2.6 billion above the FY 2021 enacted level. This is approximately \$736,084 million or 2.1 percent over the budget request.

While a significant portion of the markup focused on issues outside of science such as policing reform and other criminal justice topics, scientific priorities were mentioned such as the scientific workforce, competitiveness and innovation, artificial intelligence (AI), and advanced manufacturing. Climate science was also mentioned several times with nods to the work of NOAA, NSF, and NASA Earth Science. No amendments were made during the Subcommittee markup. One amendment of interest offered by Rep. Mike Garcia (R-CA) would redistribute \$8.5 million from NSF's Research and Related Activities (R&RA) account to the Office of the Inspector General to improve scientific integrity measures; neither this amendment nor any others offered during the full Committee hearing were adopted.

Below are additional details on the House CJS bill and the corresponding report. Specific funding information is available in the charts following the narrative.

National Science Foundation (NSF)

The House CJS bill would provide NSF with \$9.634 billion, \$1.15 billion or 13.5 percent above the FY 2021 enacted level but \$535 million below the President's FY 2022 budget request.

The proposed NSF increase would be the biggest for the Agency in many years but would leave NSF unable to fulfill all of the requested growth proposed in the budget request. The report notes that "the Committee continues to support science, the academic community, and the next generation of scientists, mathematicians, astronomers, and engineers across the country. With increased funding levels, the Committee looks forward to the advancement of NSF priority investments that will stimulate innovation, identify new industries, accelerate the translation of research results into practice, and cultivate the diverse workforce needed to power our country forward." This introduction amplifies NSF's expanded mission in commercialization and use-inspired research through the proposed Directorate for Technology, Innovation, and Partnerships. The Committee notes that it supports NSF's proposal for the new Directorate to be funded within the Research and Related Activities Account, but makes no other comments on its overall funding level or activities.

Despite the new priorities outlined in the budget request and the major changes proposed with the creation of the new Directorate, the FY 2022 report emphasizes much of the same themes as prior reports. As in the FY 2021 report, the FY 2022 report highlights the Committee's support of NSF infrastructure investments to expand scientific understanding and inspire students. It also highlights the Committee's support for basic research and directs NSF to continue bolstering fundamental scientific disciplines while using the 10 Big Ideas as a focusing tool. The report states, "Within amounts provided, NSF shall allocate no less than fiscal year 2021 levels to support its existing scientific research laboratories, observational networks, and other research infrastructure assets, including the astronomy assets, the current academic research fleet, Federally funded research and development centers, and the national high-performance computing centers, so that they may provide the support needed for cutting edge research."

New for the FY 2022 committee report, the Committee would provide specific funding amounts for NSF priority research areas:

- Provides \$1.202 billion for **climate and clean energy research**, as requested, including \$440 million for clean energy research and \$762 million for NSF's participation in the U.S. Global Change Research Program.
- Allow up to \$724 million for **AI activities**. The report notes this is equal to the request, but it is actually \$10 million less, so there may have been a drafting error. Of this amount, the Committee requires \$50 million to be used for AI workforce activities, equal to the amount requested for the Directorate for Education and Human Resources. Similar to FY 2021 guidance, the report encourages NSF to continue its efforts related to AI workforce development, especially involving outreach to community colleges and Minority Serving Institutions and newly emphasizing programs for non-computer scientists. The Committee notes receipt of the report required in FY 2021 appropriations outlining the agency's efforts to focus investments in AI. As in the FY 2021 Committee report, the Committee would also urge NSF to "invest in the ethical and safe development of artificial intelligence." The Committee additionally urges NSF to report on any AI-related international partnerships and encourages a focus on student AI and data literacy through cooperative agreements and other pilot mechanisms. Separately, the Committee notes it is still looking for the report directed in FY 2021 appropriations on AI and bias.

- Support NSF’s research program in **quantum information science and technology** related to the National Quantum Initiative. The Committee would allow up to \$205 million for these activities, \$5 million less than the FY 2021 estimated level and \$55 million below the FY 2022 budget request. The Committee would allow up to \$50 million of this funding for National Quantum Information Science Research Centers, equal to the FY 2021 estimated level and \$14 million above the FY 2022 request.
- The Committee does not provide specific amounts for any other NSF Administration priority area but notes that overall, it would provide \$3.12 billion for “investments in Advanced Manufacturing, Advanced Wireless, Artificial Intelligence, Biotechnology, Clean Energy Technology, Microelectronics and Semiconductors, Quantum Information Science and the U.S. Global Change Research Program.” This amount is \$617 million or 24.6 percent over the estimated FY 2021 spending on these activities, but \$183 million below the President’s FY 2022 budget request.
- While not stated as an NSF priority research area, the Committee recommends \$1 million for NSF to commission a National Academies of Sciences, Engineering, and Medicine study “on the current understanding of the spread of **COVID–19-related disinformation and misinformation** on the internet and social media platforms.” The Committee also directs NSF to support research projects “on how to counter influence from foreign adversaries on social media platforms and into building public resilience against misinformation and disinformation.”

NSF’s **Research and Related Activities (R&RA) account** would be funded at \$7.696 billion, \$786 million or 11.4 percent above the FY 2021 enacted level but \$444 million below the President’s FY 2022 budget request. In new House guidance for FY 2022, the report would:

- Encourage NSF to focus on new activities within the **Navigating the New Arctic** Big Idea, specifically Arctic change in the North Atlantic including coordination activities, expanded observation networks and other research infrastructure, and workforce training.
- Direct NSF to provide a report to the Committee on the status of research to **combat anti-Asian hate**.
- Encourage NSF support for the development of technologies for **carbon dioxide removal**, including direct air capture materials research. The Committee notes removal could apply to carbon dioxide that is emissions-based, industrial, biological, or terrestrial.
- Encourage NSF cooperation with other agencies on research and workforce activities related to **critical minerals**, as authorized in the Energy Act of 2020.
- Note the importance of continued research on **dyslexia**, and encourages NSF to support convergent research on specific learning disabilities, including early identification, professional development, and scaling of impactful education and treatment models.
- Provide the requested level of support for the **Ice Cube Neutrino Observatory**.
- Encourage continued support of **advanced manufacturing** activities previously supported by the Engineering Division of Industrial and Innovation Partnerships (IIP), which would be dissolved upon creation of the new directorate.
- Direct the NSF National Center for Science and Engineering Statistics (NCSES) to conduct a study on the **cyber workforce**.
- Provide \$2.5 million to establish the **Sustainable Chemistry Basic Research Program**, as authorized in the America COMPETES Act of 2010 and require NSF to provide a report on implementation of the program.

Several items were also repeated from or similar to previous House CJS appropriations reports, which would:

- Provide \$34 million for the **Historically Black Colleges and Universities Excellence in Research Program**, equal to the budget request and 66 percent above the FY 2021 estimated level.
- Continue support for the **Social, Behavioral, and Economic (SBE) Sciences** and notes the importance of this research.
- Commend NSF for its partnerships to enable continued operation and use of the **Robert Dunn Solar Telescope** and encourages NSF to continue these efforts.
- Direct NSF to support the **Experimental Program to Stimulate Competitive Research (EPSCoR)** at \$227 million, which is \$27 million (14 percent) above the FY 2021 estimated level but \$13 million below the President's FY 2022 budget request.
- Commend NSF for its investments in **high performance computing infrastructure** and encourage NSF to expand researcher access to these resources.
- Direct the Astronomical Sciences Division to continue to support existing **astronomy observatories** and report any infrastructure divestment before acting. In the FY 2022 report, the Committee additionally directs NSF to provide a report on the status of the Arecibo clean up and activities to explore future options.
- Provide the **Innovation Corps (I-Corps)** program with \$40 million, same as the FY 2021 estimated level and the President's FY 2022 request.
- Direct NSF to continue support research on **Harmful Algal Blooms (HABs)** through the Oceans and Human Health program at no less than FY 2021 levels. The Committee, "encourages research to help understand the impacts of dissolved nitrogen and phosphorous in the systems, and to understand their impacts on HAB's incidences."
- Provide \$48 million as requested for the **International Ocean Discovery Program (IODP)**.
- Encourage NSF to invest in next generation **lead detection** and monitoring tools.

Only one item included in the FY 2021 report was not included in the FY 2022 report, language on NSF's facility operations pilot program.

Education and Human Resources (EHR) would be supported at \$1.27 billion, \$306 million or 31.6 percent above the FY 2021 level but \$13 million below the President's FY 2022 budget request. The EHR increase would be much larger than that proposed for R&RA in part because the Committee would accept the Administration's proposed move of all funding for the Graduate Research Fellowship Program to EHR. Currently, EHR funds 50 percent of the program while R&RA funds the other 50 percent. Without this transfer of funds, EHR would increase 16.5 percent, much more in line with the increase proposed for R&RA. Within the amount provided to EHR, the report would:

- Support the **NSF Inclusion across the Nation of Communities of Learners of Underrepresented Discoverers in Engineering and Science (NSF INCLUDES)** program at \$45.5 million, which is \$25.5 million or 128 percent above the FY 2021 estimated level but \$1 million below the FY 2022 request.
- Approve the major increases proposed in the budget request for broadening participation programs, including \$69.5 million for the **Louis Stokes Alliance for Minority Participation Program (LSAMP)**, up 40 percent), \$12 million for the **Alliances for Graduate Education and the Professoriate (AGEP)**, up 50 percent), \$39 million for the **Centers for Research Excellence in Science & Technology (CREST)**, up 62 percent), \$20.5 million for **ADVANCE** (up 14 percent), \$56 million for the **Hispanic Serving Institutions Program (IUSE-HSI)**, up 20 percent), \$46 million for

the **Historically Black Colleges and Universities Undergraduate Program** (HBCU-UP, up 26 percent), and \$21 million for the **Tribal Colleges and Universities Program** (TCUP, up 27 percent).

- Provide \$67 million for the **Robert Noyce Teacher Scholarship Program** as requested and level with the FY 2021 estimated level.
- Provide \$70 million as requested for the **CyberCorps: Scholarships for Service** program, which is \$10 million or 17 percent over the FY 2021 estimated level. As in prior years, the Committee encourages NSF to work with community colleges on this issue and specifies at least \$6.5 million of the program's funding should be spent on community colleges. The Committee notes that the rest of the increase should be used for increasing the number of scholarships awarded at participating institutions and increase the number of institutions receiving awards.
- Provide \$90 million as requested for the **Improving Undergraduate STEM Education program** (IUSE-EHR), level with FY 2021 estimated funding.
- Encourages NSF to fund training and workforce development programs in **bioprocessing** to address workforce shortages revealed by the COVID-19 pandemic.
- Encourages NSF to fund graduate level programs to broaden participation of underrepresented minorities in **marine and ocean sciences, technology, engineering, and policy**. The Committee directs NSF to convene leaders from minority serving institutions, marine institutes, and other ocean science-focused graduate programs to vision these programs.
- Encourages NSF to continue supporting quantum information science and engineering at minority serving institutions.

The **Major Research Equipment and Facilities Construction (MREFC)** account would be funded at \$249.0 million, 3.3 percent above the FY 2021 level and equal to the President's FY 2022 budget request. The Committee would fully fund MREFC projects at the requested level including the **Antarctica Infrastructure Modernization for Science (AIMS)** project at \$90 million, **Large Hadron Collider Upgrade** at \$36 million, **Mid-scale Research Infrastructure** at \$76.25 million, **Regional Class Research Vessels** at \$5 million, and the **Vera C. Rubin Observatory** at \$40.75 million. As in previous years, the FY 2022 report would provide \$1 million for enhanced oversight of the MREFC projects. The Committee again notes its concern with NSF's planning for future construction projects and encourages NSF to develop a prioritized list of next-generation competitive large-scale facilities. The Committee, as in previous years, encourages NSF to invest in preparations for the **Decadal Survey on Astronomy and Astrophysics 2020 (Astro2020)**, including investments in development of flagship projects under consideration such as the Extremely Large Telescopes (ELT) and the next-generation Very Large Array (ngVLA).

National Science Foundation

(In millions of \$)

	FY 2021 Enacted	FY 2022 Request	FY 2022 House	House vs. FY 2021 Enacted	House vs. FY 2022 Request
NSF, total	8,486.76	10,169.30	9,634.04	1,147.28 (13.5%)	-535.26 (5.3%)
Research and Related Activities	6,909.77	8,139.71	7,695.73	785.96 (11.4%)	-443.98 (5.5%)
Education and Human Resources	968.00	1,287.27	1,274.27	306.27 (31.6%)	-13.00 (1.0%)
Major Research Equipment and Facilities Construction	241.00	249.00	249.00	8.00 (3.3%)	--
Agency Operation and Award Management	345.64	468.30	390.02	44.38 (12.8%)	-78.28 (16.7%)
National Science Board	4.50	4.60	4.60	0.10 (2.2%)	--
Office of Inspector General	17.85	20.42	20.42	2.57 (14.4%)	--

National Aeronautics and Space Administration

NASA would receive \$25.04 billion, an increase of \$1.77 billion or 7.6 percent above the FY 2021 enacted level and \$236.9 million over the request. With only a few exceptions, the House hewed to the funding levels and priorities articulated in President’s Budget Request.

NASA’s **Science Mission Directorate (SMD)** would receive \$7.97 billion, an increase of \$668.7 million above FY 2021 and \$38.1 million above the request. The House largely supports requested funding for SMD’s programs and missions at the request level, as well as the cadence of the division-specific competitive mission opportunities. However, the House would add funding above the request for a few flagship missions while scaling back the increases the Administration proposed for Astronomy and Heliophysics research and explorer programs. Significant departures from the request are highlighted below.

The **Earth Science Division (ESD)** would receive \$2.25 billion, \$250 million above the FY 2021 and equal to the request. The amount fully funds NASA’s plan to consolidate missions recommended by the 2017 Earth Science and Applications from Space Decadal Survey (ESAS 2017) within an Earth System Observatory. This includes accelerated development of large ESAS 2017-recommended “Designated Observables” missions and a new Earth System Explorer class of medium-sized competed missions.

The House would provide \$3.234 billion to the **Planetary Science Division (PSD)**, an increase of \$534 million or 20 percent above the FY 2021 enacted level and \$34.8 million above the request. The increase to PSD relative to NASA’s request is directed entirely to a corresponding plus-up the Mars Sample Return Mission. The Lunar Discovery and Exploration and Commercial Lunar Payload Services programs would receive funding at their request levels.

The **Astrophysics Division (APD)** would receive 1.45 billion, an increase of \$90 million above FY 2021 and \$46.1 million above the request. The House would restore funding for the SOFIA mission, which –

as in prior years – was proposed for termination by NASA in the FY 2022 request. The Astrophysics Research and the Astrophysics Explorers programs would be cut by \$22.7 million and \$6.4 million below the request, respectively. Both would still see sizeable increases relative to FY 2021, and the reduction is largely to offset the restoration of funding for SOFIA.

The bill would provide the **Heliophysics Division (HPD)** \$773 million, \$22 million more than FY 2021 enacted level and \$23.7 million less than the request. The bill would fully fund the new Heliophysics Technology account which includes technology development missions transferred from other programs in HPD. The Solar Terrestrial Probes (STP) program is fully funded and the House reaffirmed support for the Interstellar Mapping and Acceleration Probe (IMAP) and the Dynamical Neutral Atmosphere-Ionosphere Coupling (DYNAMIC) mission. The Committee also directs that within the funds provided to STP, not less than \$21,400,000 (\$600,000 above the request) is provided for the continuation of the Magnetospheric Multiscale (MMS) mission.

The **Space Technology Mission Directorate (STMD)** would receive \$1.28 billion, a \$180 million increase above FY 2021 appropriations but \$145 million below the request. The report accompanying the bill does not provide information on how this reduction would impact the Administration’s plan to expand STMD’s activities. However, the amount is nearly identical to the proposed increase in funding for STMD’s Technology Maturation account articulated in FY 2022 request. NASA’s requested increase to this account would enable a new \$85 million “Industry & Commerce Innovation Opportunity” to fund, via open topic calls, technologies needed by the space industry and to support university-led breakthrough R&D. With the reduction in funding below the budget request, it is not clear that NASA would be able to pilot this activity.

The report includes language reaffirming support for STMD’s current status as a standalone directorate and explicitly directs NASA to maintain its role in advancing a diverse array of technologies with cross-agency applications. The House would fully fund STMD’s Regional Economic Development program and would make several directives focused on specific technology areas and programs, including:

- \$110 million for Nuclear Thermal Propulsion (NTP) and \$10 million for Nuclear Electric Propulsion (NEP). Funding for the latter is directed towards establishing a basic framework needed to develop a multi-year research program, including a plan for an in-space propulsion-system demonstration for NEP. The FY 2022 request did not include funding for either NEP or Funding for NEP and NTP activities was not included in the FY 2022 request;
- \$40 million for Solar Electric Propulsion, \$15.8 million above the request;
- \$227 million for On-Orbit Servicing, Assembly, and Manufacturing, equal to the request;
- \$30 million for the student-focused Flight Opportunities program, \$5 million above the request;

The bill would provide \$935 million for the **Aeronautics Research Mission Directorate**, an increase of \$106.3 million over FY 2021 enacted level and \$20.2 million above the request. Within the overall amount, \$50 million would be allocated for the Hypersonic Technology Program (HTP) and the accompanying report includes language directing NASA to continue working with the Department of Defense and encourages NASA to continue to explore additional opportunities to increase hypersonic research including, “reusable vehicle technologies, hypersonic propulsions systems, and high temperature materials including next-generation Carbon-Carbon composite.” \$15 million of the HTP funds would also be prioritized for collaborations with academia and industry with a particular emphasis on reducing the environmental and operational barriers to flight at these speeds.

The House would also provide ARMD with \$10 million to advance university-led aeronautics materials research for structural applications. The report maintains the House’s perennial support for the development of the Transonic Truss Brace Wing Subsonic X-plane, the X-57 electric aircraft, and the Low-Boom Flight Demonstration Mission. The report also supports NASA’s Advanced Air Mobility mission and directs NASA to continue to assist the Federal Aviation Administration in developing autonomous aircraft standards and collecting the needed data to safely integrate AAM technologies into the National Airspace System.

The bill would provide \$7.279 billion for the **Exploration** account, an increase of \$1.15 million above FY 2021 and \$398.6 million above the request. The account would fund the Artemis program to return humans to the Moon, including development of the Orion Spacecraft, the Space Launch System, Exploration Ground Systems. The House would also provide an additional \$150 million for Human Landing System and voices concern over NASA’s sole source selection earlier this year. The House report also includes language recognizing the value of using domestic launch providers, U.S.-manufactured launch vehicles, and U.S. launch sites.

The bill would provide \$147 million for **Science, Technology, Engineering, and Math (STEM) Engagement**, an increase of \$20 million above FY 2021 and equal to the request. The increase includes \$60 million for the Space Grant program (\$3 million above the request). This amount is intended to provide \$1 million in base funding for each Space Grant state consortium to award competitive grants that address local, regional, and national STEM needs.

National Aeronautics and Space Administration
(In thousands of \$)

	FY 2021 Enacted	FY 2022 Request	FY 2022 House	House vs. FY 2021 Enacted	House vs. FY 2022 Request
NASA, total	23,271,300	24,801,500	25,038,400	1,767,122 (7.6%)	236,900 (0.9%)
Science	7,300,800	7,931,400	7,969,500	668,700 (9.2%)	38,100 (0.4%)
Earth Science	2,000,000	2,250,000	2,250,000	250,000 (12.5%)	--
Planetary Science	2,699,800	3,200,000	3,234,800	535,000 (19.8%)	34,800 (1.1%)
Astrophysics	1,356,200	1,400,200	1,446,300	901,000 (6.6%)	46,100 (3.3%)
James Webb Space Telescope	414,700	175,400	175,400	-239,300 (57.7%)	--
Heliophysics	751,000	796,700	773,000	22,000 (2.9%)	-3,300 (0.4%)
Education and Public Outreach (EPO)	45,600	55,600	N/A	N/A	N/A
Aeronautics	828,700	914,800	935,000	106,300 (12.8%)	20,200 (2.2%)
Space Technology	1,100,000	1,425,000	1,280,000	180,000 (16.4%)	-145,000 (10.2%)
Exploration	6,517,400	6,880,400	7,279,300	761,900 (11.7%)	398,900 (5.8%)

Space Operations	4,017,400	4,017,400	3,961,300	--	56,100 (1.4%)
STEM Engagement	127,000	147,000	147,000	20,000 (15.7%)	--
<i>Space Grant</i>	51,000	57,000	60,000	9,000 (17.6%)	3,000 (5.3%)
<i>EPSCoR</i>	26,000	26,000	26,000	--	--
Minority University Research and Education Program (MUREP)	38,000	48,000	48,000	10,000 (26.3%)	--
Safety, Security, & Mission Services	2,936,000	3,049,200	3,030,000	94,000 (3.2%)	-19,200 (0.6%)
Construction and Environmental Compliance and Restoration	428,500	390,300	390,300	-38,200 (-8.9%)	--
Office of Inspector General	41,200	46,000	46,000	4,800 (11%)	--

National Oceanic and Atmospheric Administration

The House CJS bill would provide NOAA with \$6.46 billion, an increase of \$1.03 billion or 18.9 percent above the FY 2021 enacted level, 525.2 million, or 7.5 percent less than the budget request. The Operations, Research, and Facilities account would receive \$4.69 billion, a 22 percent increase over FY 2021, essentially equal to the budget request, though there are transfers listed in the request that skew these numbers. This account would also newly include \$23.98 million for Community Project Funding. The Committee proposes major increases across NOAA including for many research offices and programs. However, funding for research programs of interest to universities would fall short of the dramatic increases proposed in the President’s budget request.

The Committee report emphasizes the importance of NOAA research collaborations with academic partners to advance scientific knowledge. It also calls for NOAA to support the all-of-government approach to combating the climate crisis by working in collaboration with the Office of Science and Technology Policy (OSTP) and the U.S. Global Change Research Program (USGCRP) to assist each federal agency in developing Climate Action Plans as required by Executive Order 14008, “Tackling the Climate Crisis at Home and Abroad.” The bill would provide \$10 million for NOAA’s expertise in climate services, data, and management to through the National Ocean Service (NOS), the Office of Oceanic and Atmospheric Research (OAR), and the National Environmental Satellite, Data, and Information Service (NESDIS). The report made no mention of the Advanced Research Projects Agency for Climate (ARPA-C) that was proposed for \$40 million within NOAA in the budget request.

The Committee would provide \$684.5 million, a \$113.9 million or 20 percent increase for **OAR** compared to the FY 2021 enacted level and 10.2 percent below the request. The **Climate Research Account** would receive \$253 million, with \$120 million going to **cooperative institutes**, \$13 million above the budget request and about \$45 million above FY 2021 enacted and \$74 million going to other **competitive climate research**. The competitive climate research account saw one of the largest discrepancies between the budget request and the House report with the report proposing 43.4 percent less than the request largely due to the exclusion of \$40 million that would have gone to ARPA-C in the request. This account would still receive a \$10 million or 16.0 percent increase over FY 2021. The Committee echoes

concerns made in the President’s budget request that the **Regional Integrated Sciences and Assessment Program (RISA)**, now being referred to as the Regional Integrated Climate Sciences and Assessments (RICSA) program, does not currently cover the entirety of the United States. To begin to remedy this gap, NOAA would receive \$25 million, \$3.2 million over the request, to expand geographical coverage of the RICSA and to stand up the new **Climate-Smart Communities Initiative**. The **Sea Grant College Program** would receive \$99.5 million including funds for aquaculture research, \$11.05 million or 12.6 percent over FY 2021 but 23.1 percent below the request. The report directs NOAA to spend no less than \$10 million of Sea Grant funds for the Resilient Coasts Initiative. The bill would reject the budget request proposal to decrease funding for **ocean exploration** and would instead provide an increase of \$1.8 million over the FY 2021 enacted level.

NOS would receive 706.5 million, an \$86.8 million or 14.0 percent increase over FY 2021 and 77.7 million below the request. Significant funding would be provided to key climate and ecological issues such as sea-level rise, coral reef depletion, marine debris, blue carbon, and harmful algal blooms (HABs). Observations, navigation, and monitoring would continue to be priorities in addition to hazard resilience and preparation. The Committee would provide \$38 million for the **National Coastal Resilience Fund** which funds extramural research and implementation of resilience and coastal management projects. This level is \$4 million over the FY 2021 level but is \$30 million less than the request. Additionally, the Committee would direct \$3 million of the \$50 million provided to the **Integrated Ocean Observing System (IOOS)** for expansion of the pilot HAB observation and prediction program launched in FY 2020.

The **National Marine Fisheries Service (NMFS)** would receive \$1.04 billion, an increase of 8.3 percent over FY 2021 and \$54.7 million below the request. This increase would include \$20.4 million to support offshore wind initiatives and \$20 million to support the transition to climate-ready fisheries.

The **National Weather Service (NWS)** would be funded at \$1.2 billion, an increase of \$117.3 million over the FY 2021 enacted level that is on par with the budget request. The **National Environmental Satellite, Data, and Information Systems (NESDIS)** would receive \$1.5 billion, \$257.1 million or 21.0 percent above FY 2021 enacted levels. This level would be \$195.3 million or 11.6 percent below the request.

Within the Procurement, Acquisition, and Construction account, \$43 million would go toward NOAA construction, this funding would be directed toward aging fisheries labs and facilities. The Committee would also direct NOAA to provide updates on these modernization efforts and the facilitation of a competitive process to co-locate NMFS labs at academic and non-profit research institutions.

National Oceanic and Atmospheric Administration (NOAA)

(In thousands of \$)

	FY 2021 Enacted*	FY 2022 Budget Request	FY 2022 House	House vs. FY 2021 Enacted	House v. FY 2022 Request
NOAA, total	5,430,607	6,983,329 ⁺	6,458,136	1,027,529 (18.9%)	525,193 (7.5%)
Operations, Research, and Facilities (ORF)	3,840,300	4,689,381 ⁺	4,689,458	849,158 (22.1%)	77 (0.0%)
Community Project Funding	0	0	23,980	N/A	N/A

<i>Oceanic and Atmospheric Research (OAR)</i>	570,590	762,169	684,500	113,910 (20.0%)	-77,669 (10.2%)
Climate Research	182,000	293,713	253,000	71,000 (39.0%)	-40,713 (13.9%)
Competitive Climate Research	63,795	130,793	74,000	10,205 (16.0%)	-56,793 (43.4%)
Ocean, Coastal and Great Lakes Research	230,148	294,859	260,250	30,102 (13.1%)	-34,609 (11.7%)
Sea Grant and Marine Aquaculture Program	87,950	128,818	99,000	11,050 (12.6%)	-29,818 (23.1%)
Ocean Exploration Research (OER)	42,639	43,410	44,500	1,861 (4.4%)	1,090 (2.5%)
<i>National Weather Service (NWS)</i>	1,100,776	1,216,585	1,218,113	117,337 (10.7%)	1,528 (0.1%)
<i>National Ocean Service (NOS)</i>	619,700	853,908	706,500	86,800 (14.0%)	-147,408 (17.3%)
Coastal Science and Assessment: Competitive Research	21,000	42,000	28,000	7,000 (33.3%)	-14,000 (33.3%)
National Oceans and Coastal Security Fund	34,000	68,000	38,000	4,000 (11.8%)	-30,000 (44.1%)
<i>National Marine Fisheries Service (NMFS)</i>	964,862	1,099,327	1,044,590	79,728 (8.3%)	-54,737 (5.0%)
Procurement, Acquisition, and Construction (PAC)	1,532,558	2,226,982⁺	1,998,000	465,442 (30.4%)	-228,982 (10.3%)
<i>National Environmental Satellite, Data, and Information Systems</i>	1,224,924	1,677,319	1,482,066	257,142 (21.0%)	-195,253 (11.6%)

*Where available, FY 2021 enacted levels were taken from the House report, where not available, they were taken from the FY 2022 budget request.

*The ORF and PAC accounts both contain transfers and other financing that change the grand total, the listed numbers are after transfers, following the budget request top line totals. Before transfers, the ORF account in the budget request would be \$4,953,052 and the PAC account would be \$2,237,982.

National Institute of Standards and Technology

The National Institute of Standards and Technology (NIST) would receive \$1.37 billion, an increase of \$334.6 million over the FY 2021 level and \$128.1 million below the President's budget request. NIST's research programs would receive \$937.6 million, \$149.6 million above the FY 2021 level and \$21.9 million above the President's budget request. The Committee's recommended boost to research would increase funding for the following programs: \$8.5 million to support the American bioeconomy, \$8 million for advanced communications research and standards, and \$7.5 million for next-generation semiconductor research and standards, compared to FY 2021 levels.

Overall, the bill would continue support for many of NIST's long-standing priorities including quantum information science (QIS), artificial intelligence (AI), cybersecurity and privacy standards, and advanced manufacturing.

- **QIS:** The Committee would provide NIST with no less than a \$12.5 million increase over FY 2021 for QIS research in support of the National Quantum Initiative. The Committee would encourage NIST to evaluate the potential for public-private partnerships to develop practical quantum applications and research next-generation technology for government and private sector use.
- **AI:** NIST would receive at least a \$12.5 million increase over the FY 2021 level for AI research, which has the “potential to produce transformative technologies and scientific breakthroughs that will improve Americans’ lives.” The Committee would direct NIST to address the recommendations provided by the National Security Commission on Artificial Intelligence’s (NSCAI) report on AI.
- **Cybersecurity:** NIST would receive a \$15 million increase over the FY 2021 level for cybersecurity initiatives, noting that the Committee is “alarmed by the recent spate of cyber attacks against the Nation.” Within this amount, the Committee would provide \$8 million above the FY 2021 level for the National Initiative for Cybersecurity Education (NICE) and Regional Alliances and Multi-stakeholder Partnerships to Stimulate (RAMPS) Cybersecurity and Workforce Development program.
- **Climate and Energy Measurement, Tools, and Testbeds:** NIST would receive a \$20 million increase above the FY 2021 level for Climate and Energy Measurement, Tools, and Testbeds, which would include \$5 million for direct air capture and carbon dioxide removal and sequestration research. Funding would also support research for building codes and standards that would be resilient to future weather extremes, such as sea level rise, extreme weather, hurricanes, and droughts, in coordination with NOAA and other agencies.
- **Forensic Sciences:** The Committee would provide \$22 million for Forensic Science research, which is \$2.2 million above the FY 2021 level. Of that amount, at least \$3.5 million would be provided to support the Organization of 22 Scientific Area Committees and no less than \$1.5 million to support “technical merit evaluations previously funded by transfer from the Department of Justice.”
- **Circular Economy:** The Committee would provide an increase of \$4 million above FY 2021 levels for work on the circular economy for activities with plastics and other materials in the supply chain.
- **Regenerative Medicine Standards:** The Committee would provide NIST \$2.5 million to “continue the work on Regenerative Medicine Standards to improve measurement assurance and standards coordination for regenerative therapies, including: completion of a regenerative medicine assay validation and innovation core to provide laboratory support for evaluation of standardized assays, conducting inter-laboratory studies to improve measurement assurance and develop appropriate reference materials, and coordination of stakeholders for efficient development and implementation of relevant standards.”

Additional research areas supported by the Committee would include Disaster Resilience and Research Grants; the Greenhouse Gas Program and Urban Dome Initiative; Wildfires and the Wildland-Urban Interface; Pyrrhotite Testing and Mitigation; Oceanographic Sensors; and the Malcolm Baldrige Performance Excellence Program.

The bill would provide \$275 million for the **Manufacturing Extension Partnership (MEP)** program, consistent with the President’s budget request and an increase of \$125 million (83.3 percent) compared to FY 2021. Given the COVID-19 pandemic, the Committee would provide up to \$10 million for NIST to

create a national supply chain database for MEP centers to bolster national preparedness for future events that disrupt supply chains. The **Manufacturing USA** program would receive \$56.5 million, an increase of \$40 million (242.4 percent) above the FY 2021 level, but \$110.2 million (66.1 percent) below the President’s budget request. The Committee report does not provide detail on this proposed increase and makes no mention of the two new Manufacturing USA Institutes as proposed in the President’s budget request for NIST.

National Institutes of Standards and Technology

(In thousands of \$)

	FY 2021 Enacted	FY 2022 Request	FY 2022 House	House vs. FY 2021 Enacted	House vs. FY 2022 Request
NIST, total	1,034,000	1,497,200	1,369,070	334,570 (32.3%)	-128,130 (8.6%)
Scientific and Technical Research and Services	788,000	915,600	937,570	149,570 (19.0%)	21,970 (2.4%)
Industrial Technology Services	166,500	441,600	331,500	165,000 (99.1%)	-110,100 (24.9%)
Hollings Manufacturing Extension Program	150,000	275,000	275,000	125,000 (83.3%)	--
Manufacturing USA	16,500	166,700	56,500	40,000 (242.4%)	-110,200 (66.1%)

Economic Development Administration

The Economic Development Administration (EDA) would receive \$433 million, an increase of \$87.1 million, or 25.1 percent, over the FY 2021 level and consistent with the President’s FY 2022 budget request. The Committee would focus on supporting the U.S. economic recovery in the wake of the COVID-19 pandemic and laying the foundation for future economic growth. It would specifically direct EDA to prioritize grant applications, where possible, to applicants that can demonstrate a project will benefit areas facing persistent or high poverty.

The Committee would fund the **Regional Innovation Program** (RIP, rebranded by EDA as Build to Scale) at \$50 million, an increase of \$12 million above the FY 2021 enacted level and \$5 million above the president’s budget request. Importantly, the House bill would fund RIP at its authorized level of funding for the first time. It would also urge EDA to use funds from the RIP program to invest in high tech business incubators based at institutions of higher education to diversify distressed manufacturing and legacy communities in both rural and urban areas. Additionally, the House bill would recommend EDA “support the development of regional innovation clusters focused on advanced wood products,” which the Committee states would advance rural economic development and help address land management priorities.

The **Public Works program** would receive \$124 million as requested, a small 3.8 percent increase over the FY 2021 level. In comparison, the **Economic Adjustment Assistance program** would receive \$42.5 million, \$5 million above the FY 2021 level but \$5.5 million below the President’s FY 2022 request. These are EDA’s most flexible programs and support initiatives that range from construction to workforce development initiatives and beyond. The Committee would direct EDA to prioritize funding

projects through the Public Works program that incorporate green infrastructure as well as those that are resilient to climate change. Within the funds for the Economic Adjustment Assistance program, \$10 million would be set aside to aid communities negatively impacted by the closure of nuclear power plants.

The bill would provide \$10 million for the **STEM Apprenticeship program** as requested, which is \$8 million over the FY 2021 enacted level. The Committee cites the rapid growth of jobs that require STEM skills and the ability of non-traditional postsecondary education, such as apprenticeships, to fill up to 50 percent of those jobs as justification for the increase. It should be noted that four-year universities have been allowed to participate in recent competitions for this program. The **Assistance to Coal Communities program** would receive \$80.5 million in funding, a \$46.5 million increase over the FY 2021 enacted level and very close to the budget request level. EDA would be directed to prioritize communities that have suffered severe environmental degradation from coal mining and those that have not previously received funding through the program.

The Committee would recommend that EDA allow funding from other federal sources to be considered as contributing to the matching requirement for EDA projects. It would also direct EDA to design and implement methods to increase investments in high-poverty areas and report to Congress on the efficacy of these methods once implemented. According to the bill, a “high-poverty area” means any census tract with a poverty rate of at least 20 percent as measured by the 2015–2019 5-year data series available from the American Community Survey of the Census Bureau.” Finally, the Committee would support efforts at EDA to assist public-private partnerships focused on sustainable development and fighting climate change.

Economic Development Administration

(in thousands of \$)

	FY 2021 Enacted	FY 2022 Request	FY 2022 House	House vs. FY 2021 enacted	House vs. FY 2022 Request
Economic Development Administration (EDA)	346,000	433,110	433,110	87,110 (25.2%)	---
Regional Innovation Program	38,000	45,000	50,000	12,000 (31.6%)	5,000 (11.1%)
Public Works Program	119,500	124,000	124,000	4,500 (3.8%)	---
Economic Adjustment Assistance Program	37,500	48,000	42,500	5,000 (13.3%)	5,500 (11.5%)
Research and Evaluation Program	1,500	2,000	2,000	500 (33.3%)	---
STEM Apprenticeship Program	2,000	10,000	10,000	8,000 (400%)	---

Department of Justice

The Department of Justice (DOJ) would receive approximately \$36 billion, an increase of \$2.6 billion above the FY 2021 enacted level.* The bill would provide \$95 million for Research, Evaluation, and Statistics (RES) within DOJ’s **Office of Justice Programs (OJP)**, which would be \$13 million above the enacted level and \$9 million above the budget request. RES includes the **National Institute of Justice (NIJ)**, DOJ’s primary external research program that leverages university partnerships with the goal of

strengthening science and enhancing justice. NIJ would receive \$45 million, a 21.6 percent increase over the enacted level and 9.8 percent increase over the budget request. The bill would notably include significant funding to support several of the House Democrats’ major policing reform priorities. These measures, among other provisions, will likely complicate the bill’s ability to pass as written.

Within the \$45 million that would be provided for NIJ, the Committee would direct specific funding amounts for research in several areas, some of which were also identified in the President’s budget request, including: \$12 million for understanding and preventing domestic radicalization of white supremacists and violent anti-government extremists, which would be \$2 million more than the amount requested for similar programming in the budget request; \$2.5 million for research on violence against Indian women; \$1 million for preventing school violence, which is the same as the amount proposed in the budget request; \$500,000 to study the feasibility of an independent clearinghouse for the investigation of online extremism; and \$500,000 to analyze DOJ’s data collection programs related to “stops and searches.” Other research initiatives encouraged by the Committee would include studies on the practicality of technologies to review nonprivileged incarcerated population communications for actionable intelligence to support Department actions; data collection on use-of-force by law enforcement against pets; access to mental health, wellness, and resiliency services within law enforcement; effective non-carceral ways to promote public safety; the feasibility of establishing a system to track cases of sexual abuse and maltreatment in youth-serving organizations; virtual reality de-escalation training; and delayed responses by law enforcement officers to questions about misconduct.

The bill would fund several provisions included in the sweeping *George Floyd Justice in Policing Act*, which passed the House in March 2021 but has not been taken up in the Senate. Of note, the bill would include significant investments in policing reform and accountability programming, such as enhanced training and community policing activities. Although funding for most of these programs would likely go directly to state and local law enforcement agencies, universities have historically partnered with local agencies as sub-awardees in the development and oversight of evidence-based practices. In some instances, the bill would provide funds directly to universities, including a provision that would provide no less than \$4 million for university-administered regional de-escalation training centers for law enforcement. The bill would also make funding for certain programs that support state and local departments, such as Byrne JAG program funds, contingent upon several requirements, including but not limited to eliminating racial profiling and implicit bias as well as implementing bans on “no-knock” warrants and chokeholds.

Department of Justice
(In thousands of \$)

	FY 2021 Enacted	FY 2022 Request	FY 2022 House	House vs. FY 2021 Enacted	House vs. FY 2022 Request
DOJ, total	33,422,875	35,303,916	36,040,000*	2,640,000* (8.9%)	736,084* (2.1%)
Research, Evaluation, and Statistics	82,000	86,000	95,000	13,000 (15.9%)	9,000 (10.5%)
National Institute of Justice	37,000	41,000	45,000	8,000 (21.6%)	4,000 (9.8%)

*The exact total amount for DOJ was not listed in the initial explanatory report. A fact sheet released by the Committee states that the overall funding is “\$36.04 billion, an increase of \$2.64 billion above the FY 2021

discretionary enacted level.” The fact sheet can be found at: <https://appropriations.house.gov/news/press-releases/appropriations-committee-releases-fiscal-year-2022-commerce-justice-science-and>.

Sources and Additional Information:

- The committee report is available at <https://docs.house.gov/meetings/AP/AP00/20210715/113908/HRPT-117-1.pdf>.
- The draft bill is posted at <https://docs.house.gov/meetings/AP/AP19/20210712/112888/BILLS-1171--AP--CJS.pdf>.
- The webcast of full Committee consideration is available at <https://appropriations.house.gov/events/markups/fy2022-labor-health-and-human-services-education-and-related-agencies-and-commerce> and the subcommittee markup is posted at <https://appropriations.house.gov/events/markups/fiscal-year-2022-commerce-justice-science-and-related-agencies-appropriations-bill>.