EXPLANATORY STATEMENT FOR COMMERCE, JUSTICE, SCIENCE, AND RELATED AGENCIES APPROPRIATIONS BILL, 2022

PURPOSE OF THE BILL

The bill provides funding for (1) the Department of Commerce [DOC]; (2) the Department of Justice [DOJ]; (3) several independent science agencies: the Office of Science and Technology Policy [OSTP], the National Space Council; the National Aeronautics and Space Administration [NASA], and the National Science Foundation [NSF]; and (4) several related commissions and agencies: the Commission on Civil Rights, the Equal Employment Opportunity Commission [EEOC], the United States International Trade Commission [ITC], the Legal Services Corporation [LSC], the Marine Mammal Commission, the Office of the United States Trade Representative [USTR], the State Justice Institute [SJI], and the Commission on the State of the U.S. Olympics and Paralympics.

SUMMARY OF THE BILL

The total amount of regular discretionary budget authority recommended by the Committee for fiscal year 2022 is $79,677,000,000, which is $8,554,000,000 above the fiscal year 2021 enacted level for regular discretionary amounts. Additionally, the Committee makes available $2,650,000,000 through the Crime Victims Fund [CVF] for victim compensation and victim services. This is the same as the President’s Request but it outstrips the 3-year average of collections by $2,067,000,000. The Committee is pleased that the VOCA Fix to Sustain the Crime Victims Fund Act of 2021 (Public Law 117–27) was signed into law on July 22, 2021, to ensure that the CVF has sufficient, sustainable balances into the future.

The Committee has strived to achieve a careful balance among the competing priorities of law enforcement, national security, economic development, scientific research, and space exploration, while having limited resources.

The DOC is charged with addressing and executing several critical functions, which include ensuring the effective operation of our Nation’s world class weather satellites and forecasting severe storms; enforcing trade laws to ensure American businesses can compete on a level playing field; completing a timely and accurate Constitutionally-required Decennial Census; working with distressed communities to spur economic development; and properly managing our Nation’s fisheries.

The Committee has made a concerted effort to spur U.S. economic growth both domestically and abroad through investments in the Economic Development Administration and our Nation’s trade agencies such as the USTR and the ITC, as well as the Inter-
national Trade Administration and Bureau of Industry and Security within DOC. Together, these agencies help businesses get started, compete internationally, and grow.

Additionally, the changing landscape of criminal activity at home and abroad continues to test the DOJ’s ability to deal with and adapt to emerging threats. The Committee believes that our Federal law enforcement agencies must work collaboratively to focus and streamline limited resources in a manner that safeguards taxpayer dollars while preserving public safety. The Committee supports the important mission of the Department of Justice and expects that these additional resources will support the DOJ’s proposed budget enhancements, infrastructure expansion, and new agent hiring. The Committee provides robust funding increases for the DOJ. Federal law enforcement and U.S. Attorneys received at least a 4.76 percent increase in Salaries and Expenses funding, enabling the Department to hire new agents, deputy marshals, correctional officers, and attorneys, as well as increase and expand upon existing investigative technical capabilities. The fiscal year 2022 bill increases funding for grants to help State and local law enforcement protect our Nation’s communities. Additionally, in spite of the Inspector General’s report of extraordinarily poor financial management, the Committee provides a significant increase for the Executive Office of Immigration Review of roughly 15 percent to provide resources needed to enhance productivity and address the large immigration court backlog of more than 1,425,000 cases. The Committee also provides the necessary funding for the Bureau of Prisons to continue implementation of criminal justice reforms and programming created by the First Step Act (Public Law 115–391).

For the science agencies, the Committee builds upon the advances and calculated gains made in the Consolidated Appropriations Act, 2021 (Public Law 116–260). The resources provided in this bill enable progress toward the goal of returning Americans to the Moon and enhance America’s leadership in space and science. Within NSF, the National Oceanic and Atmospheric Administration, and the National Institute of Standards and Technology, the Committee recommendation supports administration initiatives to enhance American competitiveness through research in climate science and resiliency, quantum computing, artificial intelligence, and other strategic fields. The bill also establishes a new Directorate of Technology, Innovation, and Partnerships within NSF. Given the threats posed by our international competition, recognized by the full Senate in passing S. 1260, the United States Innovation and Competition Act of 2021, and by climate change, the Committee has chosen to increase investments in science and technology research at higher rates in the fiscal year 2022 bill. At current investment levels, NSF is not meeting the needs of our researchers and innovators. In 2010, the National Science Foundation funded more than 12,500 research proposals. By 2020, that number had fallen to fewer than 12,200. The agency has a low proposal acceptance rate of 28 percent, meaning that a lot of good ideas—and therefore potentially new technology or industries—lack necessary funding to be developed. On average, NSF grants provide less than $200,000 over about 3 years, not long enough for a grad-
uate student to complete a doctorate degree. In order to fully un-
leash domestic innovation potential, experts recommend doubling
the amount of awards, increasing the duration by at least a year,
and increasing the number of proposals funded. This bill helps
achieve those goals.

**FIGHTING WASTE, FRAUD, AND ABUSE**

The departments, agencies, boards, offices, and commissions
funded in this bill can and should continue to reduce operating ex-
penses by placing greater scrutiny on overhead costs. Savings can
and should be achieved by reducing non-essential travel, office sup-
ply, rent, and utility costs. The Committee also calls on depart-
ments, agencies, boards, offices, and commissions funded in this
bill to continue to achieve savings by lowering travel contractor
costs related to air fares. The Committee continues longstanding
restrictions on first class travel.

The Committee is extremely concerned about the persistent pat-
tern of cost overruns and schedule slippages on major projects and
missions carried out by the agencies within this bill. In addition,
reports have exposed a culture within many agencies that exhibits
a lack of accountability and oversight of grant funding. Therefore,
the Committee continues bill-wide provisions to ensure greater
oversight and fiscal responsibility of taxpayer dollars.

First, the bill requires each agency to notify the Committee im-
mediately upon identification of program cost overruns greater
than 10 percent.

Second, the bill requires the Inspectors General of the DOC,
DOJ, NASA, NSF, and LSC to conduct reviews of grant and con-
tract funds to ensure funds are being spent appropriately. For
projects with persistent accountability issues, such as the Decen-
nial Census and weather satellites, special funding is provided for
additional Inspector General scrutiny. In addition, the Government
Accountability Office [GAO] will review a random sample of Con-
gressionally-Directed Spending projects.

Third, the bill requires all departments and agencies to link all
contracts that provide award fees to successful acquisition out-
comes, and prohibits funds to pay for award or incentive fees for
contractors with below satisfactory performance.

The Committee also supports long-standing provisions that were
once solely included in this bill but have since become government-
wide provisions. These include requiring each department, agency,
board, and commission funded in this bill to report spending on
large conferences to the Inspectors General for audit; requiring all
departments and agencies funded in this bill to provide full access
to documents and data for their respective Inspectors General to
conduct investigations and audits; and prohibiting funds from
being used for contracts, memoranda of understanding, cooperative
agreements, grants, or loan activities if the proposed recipient has
unpaid Federal tax liabilities or was convicted of a felony criminal
violation.

Finally, the Committee intends to continue to work with the
GAO to expand the review of selected large-scale acquisition and
construction projects. Specifically, the Committee directs ongoing
GAO reviews of large NASA projects, major research equipment
Unmet Construction Needs.—The Committee is disappointed at the gulf between the amount NASA requested for this account and the cost of the projects identified as shovel ready and needed. The Inspector General issued a report titled “NASA’s Construction of Facilities” on September 8, 2021, that recommended NASA “develop and institute an Agency-wide process to prioritize and fund institutional and programmatic CoF projects that align with Agency-level missions and require business case analyses to be completed and considered as part of the process prior to the projects’ approval.” NASA is directed to brief the Committee within 180 days of the date of enactment of this act on implementation of the recommendations in that report. NASA is further directed to include no fewer than the top 10 construction projects that are needed but unfunded in its fiscal year 2023 budget request, along with any unmet repairs that result from damage from wildfires, hurricanes, or other natural disasters.

OFFICE OF INSPECTOR GENERAL

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The Committee’s recommendation provides $46,000,000 for the Office of Inspector General, which is $1,800,000 above the fiscal year 2021 enacted level and the equal to the budget request. The Office is responsible for promoting efficiency and preventing and detecting crime, fraud, waste, and mismanagement.

ADMINISTRATIVE PROVISIONS
(INCLUDING TRANSFER OF FUNDS)

The Committee includes bill language regarding the availability of funds for certain prizes. NASA is reminded that under the authority provided in section 20144 of title 52, United States Code, no prize may be announced until the funds needed to pay it have been appropriated or committed to in writing by a private source. NASA is directed to provide any written notification under subsection (h)(4) of that section to the Committee.

The Committee also includes bill language regarding transfers of funds between accounts and the NASA spending plan for fiscal year 2022.

NATIONAL SCIENCE FOUNDATION

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The Committee’s recommendation provides $9,486,759,000 for the National Science Foundation [NSF]. The recommendation is $1,000,000,000 above the fiscal year 2021 enacted level and $682,541,000 below the budget request.

NSF was established as an independent agency by the National Science Foundation Act of 1950 (Public Law 81–507) and is authorized to support research and education programs that promote the progress of science and engineering in the United States. The
Foundation supports research and education in all major scientific and engineering disciplines through grants, cooperative agreements, contracts, and other forms of assistance in all parts of the United States. NSF also supports unique, large-scale domestic and international research facilities.

**RESEARCH AND RELATED ACTIVITIES**

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The Committee’s recommendation provides $7,667,099,000 for Research and Related Activities (R&RA). The recommendation is $757,330,000 above the fiscal year 2021 enacted level and $472,611,000 below the budget request.

The R&RA appropriation funds scientific discovery, trains a dynamic workforce, and supports broadly accessible state-of-the-art tools and facilities. Research activities contribute to the achievement of these outcomes through expansion of the knowledge base; integration of research and education; stimulation of knowledge transfer among academia and the public and private sectors, and international activities; and bring the perspectives of many scientific disciplines to bear on complex problems important to the Nation. NSF’s discipline-oriented R&RA account includes Biological Sciences; Computer and Information Science and Engineering; Engineering; Geosciences; Mathematical and Physical Sciences; Social, Behavioral and Economic Sciences; Technology, Innovation, and Partnerships; Office of Cyberinfrastructure; Office of International Science and Engineering; Office of Polar Programs; Integrative Activities; and the U.S. Arctic Research Commission.

The Committee’s fiscal year 2022 recommendation supports Federal long-term basic and translational research that has the potential to transform our economy and way of life. Private industry, foundations, and non-profits bring additional expertise, resources, and capacity to NSF-funded research. This can further accelerate discovery and translation of research into products and services, enhance the preparation of the future workforce to benefit society, and grow the American economy. The Committee strongly encourages NSF to leverage the Nation’s research communities through partnerships and collaboration to make available infrastructure, expertise, and financial resources to the U.S. scientific and engineering research and education enterprise.

**Technology, Innovation, and Partnerships.**—The Committee recognizes NSF’s critical role in driving U.S. scientific and technological innovation. This role is not limited to supporting basic research as NSF also helps accelerate translation of fundamental discoveries into technologies and products that improve our way of life. Therefore, the Committee supports the new Directorate for Technology, Innovation, and Partnerships (TIP) within R&RA that builds upon and consolidates existing NSF programs. TIP serves as a cross-cutting platform to advance science and engineering research leading to breakthrough technologies, to find solutions to national and societal challenges, to strengthen U.S. global competitiveness, and to provide training opportunities for the development
of a diverse STEM workforce. The Committee provides up to $864,870,000 for TIP.

Regional Innovation Accelerators (RIA).—The Committee provides up to $200,000,000 for the new RIA program. The Committee believes that RIAs will be transformative for many communities across the country, especially for those within Established Program to Stimulate Competitive Research (EPSCoR) States. The Committee directs NSF to award at least 20 percent of RIAs to institutions in EPSCoR States.

Scientific Facilities and Instrumentation.—A critical component of the Nation’s scientific enterprise is the infrastructure that supports researchers in discovery science. Investments to advance the frontiers of research and education in science and engineering are critical to the Nation’s innovation enterprise. The Committee encourages NSF to fully fund its U.S. scientific research facilities and instruments to adequately support scientists and students engaged in sustained, cutting-edge research. The recommendation fully funds the operations of the Daniel K. Inouye Solar Telescope (DKIST), the Gemini Observatory, the Very Long Baseline Array (VLBA) receivers, and the Center for High Energy X-Ray Science (CHEXS).

Astronomy.—U.S.-based astronomy researchers and facilities funded through NSF continue to make groundbreaking discoveries utilizing world-class scientific research instruments and facilities. NSF funding enables research in the United States, at facilities across the globe, and at observatories operated by universities, including the National Optical Astronomy Observatories, the National Radio Astronomy Observatories, and the National Solar Observatory (NSO). As NSF determines the appropriate levels of support for astronomy research grants by scientists and students engaged in ground-breaking research and investments, the Committee expects NSF to continue its support of world-class scientific research facilities and instrumentation to maximize its investments in research while preliminarily preparing for facility upgrades and activities associated with supporting the next Astrophysics decadal survey. In addition to this support, partnerships should be explored when feasible to maximize research capabilities at such facilities. Further, the Foundation shall support planning activities and encourage partnerships that aim to broaden the U.S. astronomy community’s access to the next generation of optical and infrared telescopes.

Astro2020.—The pending release of the Astronomy and Astrophysics Decadal Survey (Astro2020) this fall will represent the collective priorities of the astronomy community for the coming decade. Astro2020 will serve as a valuable tool for setting future priorities in the field of astronomy, and NSF is directed to begin the process for addressing the identified priorities for potential inclusion in future budget requests, including using the processes in place for developing requests for major facilities. NSF shall provide a briefing to the Committee within 90 days of the release of Astro2020 regarding the priorities within the survey, the role NSF will play in implementing those priorities, and how NSF will balance its resources to support research and existing facilities moving forward.
Solar Astronomy.—The Committee commends NSF’s ongoing efforts to partner with academic institutions and the NSO to operate the Richard B. Dunn Solar Telescope (DST). The Committee directs NSF to continue working with the NSO and the academic community to ensure DST and its associated instrumentation remain available for continued research.

Spectrum Innovation Initiative.—The Committee supports investments in the Spectrum Innovation Initiative. In an increasingly congested radio frequency environment, the goals of this program could be realized in an effective way without negatively impacting radio astronomy.

Green Bank Observatory.—The Committee recognizes the significant investment NSF has made to develop the world-class scientific facility at the Green Bank Telescope Observatory (GBO) and the benefit other agencies have gained through their use of the GBO facility. The Committee has therefore encouraged the development and support of multi-agency management plans for GBO, and supports NSF’s efforts to complete these plans at GBO. In order to provide stability for the facility as these plans are finalized, the Committee recommends no less than the request level to support operations and maintenance at GBO through multi-agency plans or through the Foundation.

South Pole Telescope.—The Committee encourages preliminary investments in priority next generation facilities such as the Cosmic Microwave Background Stage 4 (CMB–S4), the next phase of the cosmic microwave background program to deploy a powerful new telescope to explore our origins.

Climate and Clean Energy.—The Committee supports the administration’s requests for the U.S. Global Change Research Program and Clean Energy Technology.

Navigating the New Arctic.—As NSF continues the Navigating the New Arctic program, the Committee urges NSF to formulate research programs leveraging expertise from regions accustomed to adapting to changing marine ecosystems. The Committee encourages NSF to address Arctic change through dedicated research grants and coordination activities, expanded observation networks and other research infrastructure, and workforce training.

EPSCoR.—The Committee underscores the importance of the EPSCoR program in spurring innovation and strengthening the research capabilities of institutions that are historically underserved by Federal research and development funding. The EPSCoR program is funded at no less than $239,640,000. EPSCoR represents an effort to raise the capabilities and provide opportunities for students and institutions in States across the country. The Committee believes that good ideas and high-quality research are not bound to certain geographical areas but exist across the country. The Committee has included encouragement for NSF to look to States in the EPSCoR program for greater inclusion in awards that will further transform and benefit the Nation. NSF shall make every effort to achieve efficiencies to ensure that no more than 5 percent of the amounts provided for the program are used for administration and other overhead costs.

Geography of Innovation.—The Committee commends NSF’s commitment to a “Geography of Innovation” and the recognition that
the success of our Nation’s research enterprise relies on success in every State, not a select few. The Committee encourages NSF to review its large funding initiatives and center mechanisms to assess what tools need to be put in place to ensure emerging research institutions, institutions in EPSCoR States, and Minority Serving Institutions are not only participants, but leading these large NSF investments. As part of the fiscal year 2023 budget request, the Committee directs NSF to address in detail how the Foundation will assist these institutions to lead large funding initiatives and centers, including: Science Technology Centers, Engineering Research Centers, Mid-Scale Infrastructure Centers, Artificial Intelligence Centers, and other recurring or new center-level opportunities. The Committee expects to see increasing participation and leadership from these institutions in future funding mechanisms across NSF.

**Online Influence.**—The Committee encourages NSF to consider additional research efforts that could help counter foreign influence efforts from our adversaries on U.S. social media platforms designed to influence U.S. perspectives and undermine confidence in U.S. elections and institutions. The Committee is especially supportive of research involving collaboration between scientists in disparate scientific fields to help identify and focus future research investments. To the extent practicable, NSF should engage other Federal agencies to help identify areas of research that will provide insight that can mitigate influence in future elections.

**Mathematical Sciences Institutes.**—The Committee recognizes the importance of the NSF Mathematical Sciences Institutes across the country, which provide important basic research in multiple fields.

**Understanding Rules of Life.**—One of the research gaps in biological knowledge is the inability to look at an organism’s genetics and environment and predict its observable characteristics. Research in this area will open new doors to answer fundamental questions in life sciences. To that end, the Committee supports NSF’s funding for research, including plant genomics, and directs NSF to continue to advance the ongoing plant genomics research program, to further its work in crop-based genomics research, and to maintain a focus on research related to crops of economic importance. These activities directly address the Understanding Rules of Life research question that is a focus of NSF.

**VORTEX–SE.**—NSF has been working in conjunction with NOAA to build a full research campaign to study the unique characteristics of tornadoes in the southeastern United States. In preparation for the upcoming field campaign, the Committee expects that future budget requests for VORTEX–SE will include adequate budgetary resources for associated research and instrumentation that will maximize the scientific return of this research. As part of VORTEX–SE, the Committee encourages NSF to look beyond its traditional research disciplines and programs and to utilize the collaborative opportunities of the Prediction of and Resilience against Extreme Events program for co-funding grants that enhance understanding of the fundamental natural processes and hazards of tornadoes in the southeast and to improve models of these seasonal extreme events.

**High-Performance Computing Planning.**—The Committee commends NSF on its continuing commitment to its high-performance
computing and data analysis capabilities, including the potential for mid-scale research infrastructure, but is concerned these investments fall short of scientific and engineering needs. Leading edge high-performance computing infrastructure is vital for continued U.S. world leadership and international scientific competitiveness, particularly given computational investments and technical achievements in high-performance computing by other nations. NSF should renew and adequately resource its commitment to developing and supporting systems that facilitate tremendous leaps in computational simulation including artificial intelligence, storage, quantum computing, and data analyses that enable a broad range of scientific research. NSF should invest in additional high-end computational systems to fully meet science and engineering needs. The Committee recommends that NSF establish a timely, well-funded budget line in future budget submissions to Congress to support world-class leadership in computing for the national open science community.

*Intense, Ultrafast Lasers.*—The Committee encourages NSF to continue planning and making the early stage investments needed to advance ultrafast and high power laser technologies to maintain U.S. leadership and implement the recommendations from the Brightest Light Initiative Workshop report in 2019 and associated National Academies of Sciences, Engineering, and Medicine study.

*Domestic Manufacturing.*—The Committee encourages NSF to continue to support meritorious research on the U.S. steel industry including through the Division of Industrial Innovation and Partnerships program.

*Innovation Corps.*—The Committee provides an increase of $5,000,000 above the fiscal year 2022 request level for the Innovation Corps [I–Corps] program to build on the successes of its innovative public-private partnership model. Technology transfer is an important contributor to American innovation, and NSF plays a critical role in enabling our Nation’s brightest academic minds to bring their ideas and ingenuity to the marketplace. Scientists are trained in discovery but need help transforming their research into real-world products and profits. Programs like I–Corps create jobs in our laboratories today and jobs in American industries tomorrow. The Committee encourages NSF to facilitate greater participation in the program from academic institutions in States that have not previously received awards.

*Re-Engineering Plastic Textiles.*—The Committee supports efforts by NSF to fund interdisciplinary research to create a scientific foundation for viable solutions to the capture, management, and elimination of end-of-use plastics. The Committee encourages NSF to support meritorious research on plastic microfibers in textiles and their impact on the aquatic environment and human health. Furthermore, the Committee encourages NSF to take a comprehensive and coordinated approach to support research in plastics, microplastics, and microfibers to address significant challenges in the transport and migration of such materials, waste management disposal and reuse, and development of alternative materials.

*Quantum Science.*—The Committee supports investment in quantum science as fundamental, transformative research that can position the United States as a leader in emerging fields of economic
and scientific importance. The recommendation provides up to the budget request level for quantum information science research, as authorized in the National Quantum Initiative Act (Public Law 115–368), to support basic interdisciplinary quantum information science and engineering research and human resources development in all aspects of quantum information science and engineering. Within the amount provided, the Committee recommendation includes $210,000,000 for activities authorized under section 301 of the National Quantum Initiative Act and $50,000,000 for National Quantum Information Science Research Centers, as authorized in section 302 of that Act.

Artificial Intelligence [AI].—The Committee believes it is important to maintain leadership in AI and commends NSF for its significant investments in this area. The Committee provides up to the request level of $734,410,000 for AI research. The Committee encourages NSF to continue its efforts in workforce development for AI and other emerging technologies, including education programs for non-computer science students, with focused outreach to community colleges, Historically Black Colleges and Universities, Hispanic Serving Institutions, Tribal Colleges and Universities, and Minority Serving Institutions. In addition, the Committee encourages NSF to increase the pipeline of students graduating with AI and data literacy through partnerships and cooperative agreements.

Cybersecurity Workforce.—The Committee encourages NSF to undertake a study to identify, compile, and analyze existing nationwide data and conduct survey research as necessary to better understand the national cyber workforce to build on to the National Academies of Sciences, Engineering, and Medicine report titled, “Information Technology and the U.S. Workforce.”

Mid-Scale Research Infrastructure.—The recommendation fully funds the mid-scale research instrumentation program and encourages the Foundation to make no fewer than two mid-scale awards to EPSCoR States.

HBCUs Excellence in Research.—The Committee supports the Historically Black Colleges and Universities (HBCUs) Excellence in Research program, and the recommendation includes $33,960,000 for the program. The program helps to address NSF’s previously troubling track record of only providing substantial research funding to a small number of HBCUs.

Deepfakes.—The Committee recognizes the ongoing threat of deepfakes and directs NSF to implement the requirements included in the Identifying Outputs of Generative Adversarial Networks Act (Public Law 116–258).

Disaster Research.—The Committee is supportive of research performed through NSF’s Prediction of and Resilience against Extreme Events (PRE EVENTS) program, which enhances understanding of the fundamental processes underlying natural hazards and extreme events. The Committee encourages NSF to fund grants for meritorious research within PRE EVENTS and other research programs in fulfillment of the National Landslide Preparedness Act (Public Law 116–323).

USArray Transportable Array.—The Committee directs NSF to work with NOAA to consider, as appropriate, the transfer of
USArray Transportable Array monitoring stations in remote, under-observed areas with sparse instrumentation to observing programs affiliated with NOAA.

*Sustainable Chemistry Research.*—The Committee encourages NSF to develop and implement a sustainable chemistry research and development program, as authorized by the America Competes Reauthorization Act of 2010 (Public Law 111–358). In addition, NSF is encouraged to coordinate with the Office of Science and Technology Policy to implement the provisions in subtitle E of title II of Public Law 116–283.

*Disinformation and Misinformation.*—The Committee encourages NSF to enter into an agreement with the National Academies of Sciences, Engineering, and Medicine to conduct a study on the current understanding of the spread of disinformation and misinformation on the Internet and social media platforms, with COVID–19 being one possible exemplar.

**MAJOR RESEARCH EQUIPMENT AND FACILITIES CONSTRUCTION**

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The Committee’s recommendation provides $249,000,000 for Major Research Equipment and Facilities Construction [MREFC]. The recommendation is $8,000,000 above the fiscal year 2021 enacted level and equal to the budget request.

The MREFC appropriation supports the acquisition, procurement, construction, and commissioning of unique national research platforms and facilities as well as major research equipment. Projects supported by this appropriation push the boundaries of technology and offer expanded opportunities for the science and engineering community. Preliminary design and development activities, ongoing operations, and maintenance costs of the facilities are provided through the R&RA appropriation account.

The Committee’s recommendation includes funding at the requested level for the continued construction of the Vera C. Rubin Observatory (previously known as the Large Synoptic Survey Telescope), the Antarctic Infrastructure Recapitalization (previously known as the Antarctic Infrastructure Modernization for Science), Regional Class Research Vessels, and the High Luminosity-Large Hadron Collider Upgrade. The Committee looks forward to working with NSF to understand the impact of extended construction shutdowns on the cost and execution of these large projects and encourages NSF and the National Science Board to continue planning and budgeting for the next generation of major facilities needed to ensure the United States maintains its scientific leadership.

The recommendation provides $76,250,000 for mid-scale research infrastructure, which is equal to the request level. The Committee continues to support investments in mid-scale research infrastructure, including the procurement of larger mid-scale instrumentation under the MREFC account. Using MREFC for larger mid-scale projects will allow these projects to benefit from the oversight that all MREFC projects undergo. NSF is encouraged to award at least one mid-scale project led by an institution in an EPSCoR State.
The Committee encourages GAO to continue its annual review of programs funded within MREFC so that GAO can report to Congress shortly after each annual budget submission of the President and semiannually thereafter on the status of large-scale NSF projects and activities based on its review of this information.

EDUCATION AND HUMAN RESOURCES

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The Committee’s recommendation provides $1,100,000,000 for Education and Human Resources. The recommendation is $132,000,000 above the fiscal year 2021 enacted level and $187,270,000 below the budget request.

The Education and Human Resources appropriation supports a comprehensive set of programs across all levels of education in STEM including activities that unite school districts with institutions of higher learning to improve pre-college education. Other pre-college activities include the development of the next generation of STEM education leaders, instructional materials, and the STEM instructional workforce. Undergraduate activities support curriculum, laboratory, and instructional improvement; expand the STEM talent pool; attract STEM participants to teaching; augment advanced technological education at 2-year colleges; and develop dissemination tools. Graduate support is directed to research and teaching fellowships, internships, and instructional workforce improvement by linking precollege education systems with higher education. Programs also seek to broaden the participation of groups underrepresented in the STEM enterprise and promote informal science education.

**Advanced Technological Education.**—The Committee provides $75,000,000 for Advanced Technological Education.

**Fellowships and Scholarships.**—The Committee provides $67,000,000 for the Robert Noyce Scholarship Program and $318,520,000 for the Graduate Research Fellowship Program.

**CyberCorps: Scholarships for Service.**—The Committee provides not less than $70,000,000 for the CyberCorps: Scholarships for Service program, of which not less than $7,500,000 should be used to continue work with community colleges that have been designated as a Center of Academic Excellence in Information Assurance 2-Year Education [CAE2Y] by the National Security Agency and the Department of Homeland Security, including through providing scholarships to students at CAE2Y institutions who will not transfer into a 4-year program, such as career-changers who possess 4-year degrees and veterans of the Armed Forces. Additionally, the Committee urges NSF to collaborate with the National Initiative for Cybersecurity Education at NIST on their efforts to develop cybersecurity skills in the workforce, especially in support of non-traditional or technical degree qualifications.

**Informal Science Education.**—The Committee maintains its strong support for NSF’s informal science education program and provides no less than $70,000,000 for Advancing Informal STEM Learning. The Committee encourages NSF to coordinate and provide necessary support for investments in both in- and out-of-school
time STEM education programs across Federal agencies, including support for extracurricular STEM programs. The Education and Human Resources directorate is further encouraged to continue its NSF-wide efforts to support informal STEM education programs, including leveraging the research directorates to support activities that match their respective content areas.

**Hands-on and Experiential Learning Opportunities.**—Developing a robust, talented, and diverse homegrown workforce, particularly in the fields of STEM, is critical to the success of the United States innovation economy. The Committee believes that hands-on and experiential learning opportunities outside of the classroom are critical for student success in STEM subjects and careers, stimulating students’ interest, increasing confidence, and creating motivation to pursue a related career. In particular, hands-on and experiential learning opportunities can be particularly successful in inspiring interest in students who traditionally have been underrepresented in STEM fields, including girls, students of color, and students from disadvantaged backgrounds. Therefore, the Committee encourages NSF to provide grants to support development of hands-on learning opportunities in STEM education, including via after-school activities and innovative learning opportunities such as robotics competitions.

**Division on Human Resource Development.**—The Committee supports the requested increases to broaden participation in STEM education and recommends $46,500,000 for the HBCUs Undergraduate Program, $12,000,000 for the Alliances for Graduate Education and the Professoriate, $69,500,000 for the Louis Stokes Alliances for Minority Participation, $21,000,000 for the Tribal Colleges and Universities Program, and $34,000,000 for Centers for Research Excellence in Science and Technology. In addition, $51,500,000 is provided for the Hispanic Serving Institutions program to build capacity at institutions of higher education that typically do not receive high levels of NSF funding.

**Inclusion Across the Nation of Communities of Learners of Underrepresented Discoverers in Engineering and Science [INCLUDES].**—The Committee supports the Big Idea to broaden participation in science and engineering by developing networks and partnerships that involve organizations and consortia from different sectors committed to the common agenda of STEM inclusion. The recommendation provides $46,500,000 for INCLUDES. The Committee encourages NSF to ensure the agency partners with communities with significant populations of underrepresented groups in the STEM workforce.

**Transformational Education Innovation and Translation.**—The Committee encourages NSF to collaborate with the Department of Education on transformational education innovation and translation, including interventions grounded in scientific understanding to improve student outcomes and achievement. This may include instrumenting large-scale digital learning platforms to create a research infrastructure that drives continuous improvement in the use of the learning sciences. NSF should consider how to help address the learning loss associated with the COVID–19 pandemic, foster the benefits of distance learning and consider learning needs
of under-resourced and underrepresented students such as those in urban or rural communities.

AGENCY OPERATIONS AND AWARD MANAGEMENT

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<tr>
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The Committee’s recommendation provides $445,640,000 for Agency Operations and Award Management. The recommendation is $100,000,000 above the fiscal year 2021 enacted level and $22,660,000 below the budget request.

The appropriation provides salaries and expenses, including staff salaries, benefits, travel, training, rent, advisory and assistance services, communications and utilities expenses, supplies, equipment, and other operating expenses necessary for management of NSF’s research and education activities.

The Committee continues to believe that NSF should include criteria that evaluate how a grant proposal will advance our Nation’s national security and economic interests, as well as promote the progress of science and innovation in the United States.

The Committee reiterates its long-standing requirement that NSF submit reprogrammings when initiating new programs or activities of more than $500,000 or when reorganizing components. The Committee expects to be notified of reprogramming actions which involve less than the above-mentioned amount if such actions would have the effect of changing the agency’s funding requirements in future years, or if programs or projects specifically cited in the Committee’s explanatory statement are affected.

OFFICE OF THE NATIONAL SCIENCE BOARD

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The Committee’s recommendation provides $4,600,000 for the Office of the National Science Board. The recommendation is $100,000 above the fiscal year 2021 enacted level and equal to the budget request.

The National Science Board is the governing body of NSF and is charged with serving as an independent adviser to the President and Congress on policy matters related to science and engineering research and education.

OFFICE OF INSPECTOR GENERAL

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The Committee’s recommendation provides $20,420,000 for the Office of Inspector General. The recommendation is $2,570,000 above the fiscal year 2021 enacted level and equal to the budget request.

The OIG appropriation provides audit and investigation functions to identify and correct deficiencies that could lead to instances of fraud, waste, or mismanagement.
The bill includes two administrative provisions. One allows limited transfers of funds among accounts. The other requires notification for disposal of certain assets.