HOUSE COMMITTEE *on* APPROPRIATIONS

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Leading the Way in Research and Development

Research and Development Provisions in the Fiscal Year 2023 Consolidated Appropriations Act

Democrats in Congress have been fighting to secure transformative federal investments to help fight inflation, lower the cost of living, support working families, create American jobs, and combat climate change.

In December 2022, Democrats in Congress secured transformative investments in the 2023 federal funding bill that help the middle class, working families, small businesses, and the vulnerable who work hard. Instead of catering to the biggest corporations and billionaires, we are tackling some of our nation's biggest challenges with major investments in research and development.

Overall, the 2023 funding bill provides more than $238 billion to help America innovate. Below you will find a summary of all the research and development provisions included in these historic bills.

Commerce, Justice, Science, and Related Agencies

The bill supports strong investments in climate science and clean energy research, space science and space technology, and other forward-leaning technologies vital for creating American jobs, strengthening American competitiveness, and enhancing our standard of living, including:

Department of Commerce

- $1.6 billion for the National Institute of Standards and Technology (NIST), an increase of $397.2 million above fiscal year 2022, to promote U.S. innovation and industrial competitiveness by advancing measurement science, standards, and technology in ways that enhance economic security and improve our quality of life. In addition, a further $27 million is included for industrial technology services to implement the Research and Development, Competition, and Innovation Act (division B of Public Law 117-167), and $40 million is included to support the development of resilience standards with regard to weather and climate disasters, and to carry out investigations of building failures.
- $4.25 billion for the U.S. Patent and Trademark Office (PTO), an increase of $195 million above fiscal year 2022, to expand and protect U.S. innovation, promote the industrial and technological progress of the Nation, and strengthen our economy, by protecting the intellectual property of American creators, inventors, and entrepreneurs.
- $761.3 million for the National Oceanic and Atmospheric Administration (NOAA)'s Office of Oceanic and Atmospheric Research, an increase of $113.3 million above fiscal year 2022.

- $119 million for NOAA Coastal Science and Assessment, an increase of $9 million above fiscal year 2022, to provide coastal managers with the scientific information necessary to decide how best to protect environmental resources and public health, preserve valued habitats, and improve the way communities interact with coastal ecosystems.

National Aeronautics and Space Administration

- $25.4 billion for the National Aeronautics and Space Administration (NASA), an increase of $1.3 billion above fiscal year 2022. In addition, $189.4 million is included for repair or replacement of facilities damaged by hurricanes or scheduled for derating due to deterioration.

National Science Foundation

$9.54 billion for the National Science Foundation (NSF), an increase of $701 million above fiscal year 2022, to support fundamental research and education in all non-medical fields of science and engineering in the United States. In addition, a further $335 million is included to implement the Research and Development, Competition, and Innovation Act (division B of Public Law 117-167), and $2.5 million is included for repairs to damaged research facilities and scientific equipment.

Defense

The bill includes $139.8 billion in the Research, Development, Test and Evaluation title, covering basic research, applied research, and advanced technology development. Not only do these investments help modernize our military and make us a more capable force, but they also ensure that breakthroughs occur in labs at U.S. universities, other public research facilities, and companies located in all of our communities. These investments touch a number of critical areas including microelectronics, wireless technology and communications systems, renewable energy generation and storage, biotechnology, and artificial intelligence and autonomy.

Transportation-Housing & Urban Development

This bill:

Department of Transportation (DOT)

- Provides $36.5 million for DOT's Research and Technology activities to coordinate research across modal administrations and lead cross-modal initiatives. This includes $3.2 million, equal to the budget request, for Advanced Research Projects Agency – Infrastructure, established in IIJA to ensure that the U.S. is a global leader in developing and deploying advanced transportation infrastructure technologies and materials; and
- Directs $255 million, $6.5 million above fiscal year 2022, for the Federal Aviation Administration's (FAA) Research, Engineering, and Development to support research on materials for the development of new products and procedures for aviation safety. This includes:

    - $38 million for the Continuous Lower Energy, Emissions and Noise (CLEEN) program to reduce noise and emissions at its source – the aircraft engine;
    - $34 million for the Aviation Sustainability Center (ASCENT) to evaluate technologies for reducing noise, improving air quality, increasing energy efficiency, and producing sustainable aviation fuels at commercial scale; and
    - $10 million to support the research and certification of unleaded aviation gasoline.
- Supports FAA's airport cooperative research program by including $15 million to develop near-term, evidence-based, practical solutions to problems faced by airport operators.
- Provides $41 million for airport technology research, to develop engineering standards for airport construction projects as well as specific safety guidance and requirements for safe aircraft and airport operations on the ground.
- Increases safety by investing $14 million for the Federal Motor Carrier Safety Administration's research and technology activities, with a focus on automated vehicles, large truck crashes, and automatic emergency braking.
- Includes $407 million for the National Highway Traffic Safety Administration's Operations and Research, for activities to reduce highway fatalities, prevent injuries, and reduce the economic toll of motor vehicle crashes.
- Supports advances in safety, emerging technologies, and equipment by including $44 million for the Federal Railroad Administration's Railroad Research and Development program. This includes:
    - $5 million for partnerships with qualified universities on research related to improving the safety, capacity, and efficiency of the nation's rail infrastructure, including $1,000,000 for research on intelligent railroad systems;
    - $2.5 million to research, develop, test, and demonstrate the use of alternative fuels for locomotives; and
    - $2 million to research and mitigate risks associated with the transportation of crude oil, ethanol, liquefied natural gas, and other hazardous materials.
- Provides $37.6 million through the Highway Trust Fund for transit research, demonstration, and innovation activities, with a focus on the impacts transportation has on transit dependent low-income and minority populations, including the needs of pregnant transit riders, people with disabilities, and impacts of COVID-19 on transit accessibility.
- Advances the safe and secure transportation of natural gas, petroleum, and other hazardous materials by pipeline, air, highway, rail, and vessel by providing $20.9 million for the Pipeline and Hazardous Materials Safety Administration's research and development activities.

<u>Department of Housing and Urban Development (HUD)</u>

- Expands HUD's Research and Technology funding to $145 million to support research and evaluations related to the emergency housing voucher program, housing mobility demonstration, older adult home modification program, Violence Against Women Act housing protections, and Native American housing block grant program.

Energy & Water Development

This fiscal year 2023 bill includes:

U.S. Army Corps of Engineers

- $39 million for Research and Development in the Investigations account, an increase of $24 million above the request. This funding is used to research and develop technologies and techniques that will promote monetary savings and greater reliability, safety, enhanced efficiency, and environmental sustainability in the planning, design, construction, and operation and maintenance of civil works activities.
- $23 million for Aquatic Nuisance Control Research, an increase of $22.9 million above the request. This funding is used to provide innovative technologies regarding risk assessment, prevention strategies, and cost-effective, environmentally-sound options for managing aquatic nuisance species.
- $13.1 million for the Coastal Inlets Research Program, an increase of $12.95 million above the request. This funding is used to advance knowledge and tools to better predict future channel shoaling, to provide quantitative and practical predictive tools and data to reduce the cost of maintaining Federal navigation channels and structures, identify potential unintended consequences, mitigate engineering activities related to navigation channels, and optimize the Corps' operation and maintenance practices in support of commercial navigation.
- $7 million for the Dredging Operations and Environmental Research Program. This funding helps develop risk-based methods and technology to improve cost efficiencies and sustainability of the navigation dredging program.
- $10.5 million for the Water Operations Technical Support Program, an increase of $2.5 million above the request. This funding is used to identify, develop, and share innovative concepts and technologies that will support sustainable engineering solutions to complex environmental problems at Corps flood and storm damage reduction projects nationwide, including developing and applying Forecast Informed Reservoir Operations to inform and improve reservoir operations.

Bureau of Reclamation

- $17.7 million for the Desalination and Water Purification Program, an increase of $12 million above the request. This funding provides financial assistance for advanced water treatment research and development, leading to improved technologies for converting unusable water resources into usable water supplies.
- $25.9 million for the Science and Technology Program, an increase of $6.4 million above the request. This funding is used to fund research in support of Reclamation's mission of providing water and generating power.

Department of Energy

The bill includes more than $15.3 billion of transformative investments in clean energy innovation and science, which will help develop clean, affordable, resilient, and secure American energy and deploy these clean energy technologies and the green jobs of tomorrow in communities across the country, including:

- A record-level $3.5 billion for the Office of Energy Efficiency and Renewable Energy, an increase of $260 million above fiscal year 2022. This funding provides for clean, affordable, and secure energy and ensures American leadership in the transition to a global clean energy economy.
- $8.1 billion for the Office of Science, an increase of $625 million above fiscal year 2022, to pursue basic science research in physics, biology, and chemistry to ensure the nation's global leadership in energy innovation.
- $350 million for the Office of Electricity, an increase of $73 million above fiscal year 2022. The funding will advance technologies to increase the resilience and efficiency of the nation's electricity delivery system and increase its capacity to incorporate more clean energy.
- $470 million for Advanced Research Projects Agency – Energy (ARPA-E), an increase of $20 million above fiscal year 2022. This funding supports research aimed at rapidly developing energy technologies that are capable of significantly changing the energy sector to address the nation's critical economic, environmental, and energy security challenges.
- $890 million for the Office of Fossil Energy and Carbon Management, an increase of $65 million above fiscal year 2022. This funding advances carbon pollution reduction in hard-to-decarbonize sectors like the industrial sector with carbon capture and storage, hydrogen, and direct air capture while facilitating the transition to a net-zero carbon economy and rebuilding a U.S. critical minerals supply chain.
- $1.8 billion for the Office of Nuclear Energy, an increase of $118 million above fiscal year 2022. The funding will support research, development, and demonstration (RD&D) of advanced nuclear technologies and improve the safety of existing nuclear plants.

Additionally, the bill includes $768 million for nuclear nonproliferation research and development, an increase of $39 million above fiscal year 2022 to combat the threat of nuclear terrorism.

Homeland Security

The bill includes $578.3 million to support research and development activities related to homeland security and first responders, including:

- $461.2 million for the Science and Technology Directorate, including:
    - $407.7 million for Research, Development, and Innovation;
    - $45.9 million for University Centers of Excellence; and
    - $7.7 million for the Minority Serving Institutions Program;
- $33.5 million for the Transportation Security Administration;
- $7.5 million for the U.S. Coast Guard;
- $4 million for the U.S. Secret Service

- $7.4 million for the Cybersecurity and Infrastructure Security Agency; and
- $64.6 million for the Countering Weapons of Mass Destruction Office, including:
    - $39 million for transformational R&D; and
    - $25.6 million for detection capability development.

Interior-Environment

This bill will restore science as the foundation for decision making and provide the tools needed to address a changing climate and advance new technology.

The fiscal year 2023 spending bill includes:

Department of the Interior

- $35 million in the United States Fish and Wildlife Service for Service Science addressing a range of needs for new tools and information to conserve species, habitats, and ecosystems.
- $804 million in the U.S. Geological Survey to advance science in the Ecosystems, Energy and Mineral Resources, Natural Hazards, Water Resources, and Core Science Systems Mission Areas.

Environmental Protection Agency

- $504 million in Science and Technology research to address climate change.

U.S. Forest Service

- $9 million for Joint Fire Science split between the Department of Interior and the U.S. Forest Service.
- $303 million for other Forest Service Research and for Forest Inventory and Analysis services which provide the tools and modeling to inform climate smart forest management.

Related Agencies

- $3 million in the Smithsonian Institution to foster a research environment conducive to scientific innovation and respond to research opportunities that can change our understanding of Earth systems.

Military Construction & Veterans Affairs

Department of Defense

- The fiscal year 2023 bill provides $120 million for laboratory infrastructure planning and design and construction, which is $120 million above the budget request. This funding will prioritize historically underfunded Department of Defense science and technology laboratories and test and evaluation facilities that engage in activities ranging from basic research to defense system acquisition support to direct operational support of deployed warfighters.

Department of Veterans Affairs

- The fiscal year 2023 bill provides $916 million for VA's Medical and Prosthetic Research Program, an increase of $34 million over the 2022 enacted level. This funding will enable VA to continue its groundbreaking research into treating veterans' quality of life needs and improving all aspects of veterans' health care.
    - VA's planned research priorities for this funding include significant investments in artificial intelligence and machine learning; advancing the development of cutting-edge prosthetics, particularly for women veterans; and increasing understanding of health needs at the genomic and molecular levels to improve technology for diagnostics and treatments.
- VA has increasingly adopted automation technology to improve the timeliness of providing benefits and services to veterans while ensuring that all claims are processed accurately. The fiscal year 2023 bill provides $120 million to continue to implement Disability Compensation Claims Modernization efforts and automation technology which allows claims to be processed within days rather than months. The bill also provides $35 million for the Pension Optimization Initiative, which will expand current pension automation efforts, improving processing wait times for veterans.

Labor-HHS-Education

This funding bill includes:

- $47.5 billion for research by the National Institutes of Health (NIH), an increase of $2.5 billion over fiscal year 2022 levels.
- $1.5 billion for research by the Advanced Research Projects Agency for Health (ARPA-H), an increase of $500 million over fiscal year 2022 levels.
- $50 million for a new HBCU, TCU, and MSI Research and Development Infrastructure Grants program under the Department of Education.

Agriculture-Rural Development- FDA

The fiscal year 2023 federal spending package provides:

- $1.74 billion to support research efforts of the Agricultural Research Service, a $111 million increase above fiscal year 2022, including $2 million to accelerate biotechnology innovation for agricultural products.
- $1.7 billion for the National Institute of Food and Agriculture, a $64 million increase above fiscal year 2022, including:
    - $232.5 million for programs that benefit the 1890s Land Grant Institutions, a $17.5 million increase above fiscal year 2022;
    - $32 million for 1994 Land Grant Institutions and other Tribal programs, a $4 million increase above fiscal year 2022;

- $16 million for education grants for Hispanic serving institutions;
- $455 million for the Agriculture and Food Research Initiative, NIFA's largest competitive grant program; and,
- $50 million for the Sustainable Agriculture Research Education program, a regional competitive grant program promoting sustainable ag research.

State and Foreign Operations

The fiscal year 2023 bill includes language supporting research, development of, and access to antibiotics in USAID's global health security work in addition to research to prevent and cure chronic diseases, reduce malaria deaths and illnesses, biomedical product research and development, and develop innovative technologies related to child survival activities and disease programs, including diagnostics, therapeutics, vaccines, and devices.