



## Investing in Our Nation's Research Infrastructure

We face a number of great challenges today—challenges like climate change, the COVID-19 pandemic, crumbling research infrastructure, and threats to our competitiveness.

The Build Back Better Act makes critical investments that will help us address these challenges. These resources will help us address the climate crisis, rebuild after this pandemic, promote innovation, and renew and repair our research infrastructure.

### **Department of Energy**

This is a historic investment in the scientific enterprise of the Department of Energy, one that will better enable us to meet our climate goals while spurring economic growth. This Act will provide much-needed additional support to enable our nation's transition to a clean energy future through research and development.

These investments will help reinvigorate the U.S. energy sector and equip us with the innovations required to successfully confront the climate crisis in the near term and well into the future.

- **Research, Development & Demonstration Projects:** \$1 billion for demonstration projects carried out by DOE's Office of Energy Efficiency and Renewable Energy; \$985 million to support research at the Office of Science; and \$10 million for demonstration projects to reduce the environmental impacts of produced water.
- **Improving Diversity in Energy Department Projects:** \$5 million to support DOE's Office of Economic Impact and Diversity to improve diversity across the Department's research, development and demonstration activities.
- **High-assay Low Enriched Uranium:** \$500 million to support availability of high-assay low enriched uranium (HALEU).

### **Environmental Protection Agency (EPA)**

Research and development activities at the EPA are critical in our whole-of-government response to the climate crisis.

- **Air Quality and Climate Research:** \$100,000,000 to the EPA to conduct air quality and climate research.

## **Federal Emergency Management Agency (FEMA)**

This bill also provides funding to will help to ensure firefighters are equipped with PFAS-free equipment. We cannot continue to allow firefighters to put their lives on the line while using equipment that puts their health at risk. We owe them this, especially after this active and dangerous fire season.

- **PFAS Replacement Assistance to Firefighter Grants:** \$95 million for grants for PFAS-free personal protective firefighting equipment and firefighting foam and \$5 million for program administration.

## **National Aeronautics and Space Administration (NASA)**

Since NASA's first Earth-observing satellites over 60 years ago, the Agency has been a cornerstone of our Earth science and climate research activities. This bill invests in NASA's climate modeling, observations, as well as research and development related to wildfires. It also provides important research and development investments into cleaner more efficient aircraft. In addition, it provides resources to help revitalize and update NASA's research infrastructure.

- **Revitalizing NASA's Infrastructure:** \$748 million to repair, modify, modernize and construct NASA infrastructure and facilities.
- **Investing in the Future of Aviation:** \$225 million for aeronautics research and development on sustainable aviation.
- **Assessing and Mitigating Climate Change:** \$115 million to support climate research and initiatives to understand, observe and mitigate climate change.
- **Wildfire Research:** \$25 million for research and development to support the wildfire community and improve wildfire fighting operations.

## **National Institute of Standards and Technology Research (NIST)**

The National Institute for Standards and Technology and its scientists lead the world in measurement science. The investments made in this bill will ensure we continue to lead in this important area. Funding in this bill for NIST's manufacturing programs will help us achieve our goal of revitalizing the U.S. manufacturing base. And this bill also makes important investments in NIST's research infrastructure.

- **Modernizing Research Infrastructure:** \$650 million for NIST to upgrade, renovate or replace outdated research facilities and equipment.
- **Investing in American Manufacturers:** \$260 million for the Hollings Manufacturing Extension Partnership (MEP) – a public-private partnership with MEP centers in all 50 states and Puerto Rico dedicated to serving small and medium-sized manufacturers – and \$220 million for advanced manufacturing research, development and testbeds. \$20 million for a cybersecurity workforce training center.

- **National Fire Research:** \$100 million for research related to wildfire impact on communities.

## **National Oceanic and Atmospheric Administration (NOAA)**

The National Oceanic and Atmospheric Administration provides weather forecasts for extreme events super-charged by climate change, collects critical climate observations, and conducts and supports climate research. The investments in this bill will enhance NOAA's work in all these areas. This agency plays a significant role in addressing the climate crisis and protecting the public, and these robust investments will help us strengthen these efforts.

- **Forecasting for Weather and Climate:** \$500 million for NOAA research on climate change including:
  - **\$200 million** to accelerate advancements in research, observations and modeling related to weather, coasts, oceans and climate
  - **\$100 million** for competitive climate research grants
  - **\$100 million** for the development and distribution of climate science information products and services.
  - **\$100 million** for research infrastructure and procurement
- **Climate Education & Computing Capacity:** \$20 million educational activities and materials to improve public understanding of the climate crisis and \$200 million for NOAA to increase computing capacity, data management and storage.
- **Hurricane Hunters:** \$139 million for additional hurricane hunters – specially equipped aircraft that play an integral role in hurricane forecasting.

## **National Science Foundation (NSF)**

The bill also makes an unprecedented investment in the National Science Foundation, tapping into the diverse talent and institutions from across our nation. It provides resources to support research capacity building at our nation's minority serving institutions.

It invests in research, scholarships, and fellowships across all STEM disciplines. The bill makes significant investments in climate change and wildfire research. Additionally, the bill helps to address NSF's significant research infrastructure needs. We must ensure our Nation's scientists and researchers working towards solutions to our greatest challenges have 21<sup>st</sup> century facilities to conduct their work. These infrastructure projects will bring about opportunities for quality jobs, and secure U.S. global leadership in science and technology.

- **Seeking Solutions Through Science:** \$1.52 billion to fund the Directorate for Technology, Innovation and Partnerships to accelerate use-inspired and translational research to address some of the world's most challenging problems. \$25 million for research security activities. \$55 million for cybersecurity education and training.

- **Investing in NSF Core & Climate Research:** \$668 million for NSF research awards, traineeships, scholarships and fellowships across all STEM disciplines and \$500 million for climate change related research.
- **Promoting Diversity in Science:** \$200 million for research capacity building at Minority Serving Institutions (MSIs), \$100 million to fund the modernization of academic research facilities and instrumentation at MSIs, and \$25 million to ensure demographic diversity in NSF initiatives.
- **Replacing Obsolete Research Infrastructure:** \$200 million for the restoration, renovation or replacement of obsolete science and engineering facilities and \$200 million for mid-scale and major research infrastructure.