



## AAU Summary of the Biden Administration's Full FY22 Discretionary Funding Request (May 28, 2021)

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### GENERAL OVERVIEW:

On May 28, 2021, President Biden released his \$6 trillion-dollar [FY22 budget request](#). The request combines his recently released \$2.3 trillion American Jobs Plan (see [AAU summary of AJP](#)), \$1.8 trillion American Families Plan (see [AAU summary of AFP](#)), and \$1.5 trillion in discretionary spending to fund the next fiscal year. The President also calls on Congress to take action to lower prescription drug pricing costs, expand public housing, address climate change, and expand and improve health coverage, among other priorities. The proposed budget would make changes to the tax code to raise federal revenues; however, it increases the deficit by \$1.8 trillion.

The budget proposes \$171.26 billion, a 9 percent increase in total research and development across the federal government. A breakdown of the research and development investments in the president's budget request can be found [here](#). For higher education, the budget proposes \$3.3 billion in new discretionary funding aimed at improving student achievement and increasing access to a high-quality higher education for all students.

President Biden's budget disburses the investments his administration proposed through the American Jobs Plan and the American Families Plan. [The American Jobs Plan](#) proposes significant new investments in transportation, water, energy, housing, education, research and development, manufacturing, and human infrastructure. It allocates R&D funding to several federal research agencies including the National Science Foundation and National Institute of Standards and Technology. \$180 billion is allocated to "R&D and the technologies of the future." The plan includes proposals to advance economic growth through research and support for commercialization, manufacturing, and supply chains. [The American Families Plan](#) proposes two years of free community college and invests more in making college affordable for low- and middle-income students at HBCUs, TCUs, and other MSIs. Notably, the proposal includes "over an \$80 billion investment" in Pell Grants. The plan calls this "a down payment on President Biden's commitment to double the maximum award."

View AAU's FY22 Funding Priorities table [here](#).

### RESEARCH AND DEVELOPMENT OVERVIEW:

**Agriculture and Food Research Initiative (AFRI):** The budget request provides \$700 million for AFRI in FY22, a \$265 million or 38 percent increase over comparable FY21 funding.

The budget proposes AFRI will have a focused investment in three major complementary components: 1) Sustainable Agriculture Systems, 2) Foundational and Applied Science, and 3) Education and Workforce Development. The budget allows no more than 5 percent of the AFRI funds to be retained by the Secretary for

merit-reviewed rapid response science to address critical national issues. In addition, NIFA received a 16 percent increase over FY21 funding levels, including \$91 million for climate change research and \$5 million for climate hubs, and setting a broad emphasis on climate-smart agriculture and application of clean energy.

USDA's FY22 budget summary can be found [here](#).

**Department of Defense (DOD):** The President's request includes \$111.96 billion total for Research, Development, Test and Evaluation (RDT&E) activities, an increase of \$4.51 billion or 4.2 percent above FY21 enacted. Despite the increase, the budget proposes cuts to both basic (6.1) and applied (6.2) research programs. Basic research would receive \$2.28 billion and applied research would receive \$5.51 billion, a decrease of \$342.86 million (13.07 percent) and \$927.45 million (14.47 percent), respectively. RDT&E increases are proposed for the Department's later-stage programs, including its prototyping, operational systems development, and – notably – the "Software and Digital Technology Pilot Programs" recently established in FY21.

DOD's R-1 FY22 budget summary can be found [here](#).

**Department of Energy (DOE):** The President's FY22 request includes \$7.4 billion for the Department of Energy's Office of Science and \$500 million for the Advanced Research Projects Agency for Energy (ARPA-E). Additional supporting details can be found in the FY22 Budget Justification documents to support Department of Energy Budget Request to Congress [here](#).

The President's request includes a combined total of \$1 billion for the creation of a new Advanced Research Projects Agency for Climate (ARPA-C) and reinvestment in the existing Advanced Research Projects Agency for Energy (ARPA-E). Together, these initiatives would support high-risk, high-reward solutions for adaptation, mitigation, and resilience against the climate crisis and enable robust investments in clean energy technology R&D. Additional details on ARPA-C follow below.

DOE's Office of Science FY22 budget summary can be found [here](#).

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

The President's FY22 discretionary request includes \$24.7 billion for NASA, a \$1.5 billion or 6.6 percent increase from the FY21 enacted level.

The total request for the Science Mission Directorate (SMD) is \$7.93B, a more than 8 percent increase which targets increases for Earth Science and Planetary Science. SMD includes support for the Nancy Grace Roman Space Telescope, the Pre-Aerosol, Clouds, and ocean Ecosystem (PACE) and Climate Absolute Radiance and Refractivity Observatory (CLARREO), Pathfinder and Landsat 9 missions. The SOFIA mission is proposed for termination, noting it "costs over \$80 million per year and has not proven to be as scientifically productive as other missions." Earth Science also includes support to initiate the Earth Systems Observatory, a new set of Earth-focused missions to provide key information related to climate, disaster mitigation, and real-time agricultural processes.

\$1.4 billion is requested for NASA's Space Technology research and development, a \$325 million increase above FY21. FY22 Aeronautics funding is requested at \$915 million, an increase of \$86 million above FY21, and the Office of STEM Engagement at \$147 million, or \$20 million above FY21, which includes a 12 percent increase for the Space Grant program to \$57 million.

The request notes that NASA has concluded that some projects (including the Roman Space Telescope) have incurred delays and additional costs, due to stoppages, disruptions, and inefficiencies of in-lab work and schedule delays in part due to COVID-19, and that full impacts are still being assessed.

NASA's FY22 budget summary can be found [here](#).

### **National Endowment for the Humanities (NEH):**

The President's request includes \$177.55 million for NEH, a \$10 million or 6 percent increase from the FY21 enacted level. The request includes: \$122.9 million for NEH's grant programs, \$6.22 million for the "A More Perfect Union" initiative, and \$15.6 million in federal matching funds including funding for NEH's Infrastructure and Capacity Building Challenge Grants program.

While typically funded at the same level as NEH, the National Endowment for the Arts (NEA) received \$201 million in the President's FY22 budget request.

NEH's FY22 budget summary can be found [here](#).

### **National Institutes of Health (NIH):**

The President requested a considerable increase in NIH funding and funds the agency at \$52 billion. This represents an increase of \$9 billion or 21 percent over the \$42.9 billion in FY21 appropriations. The President's budget request includes a bold proposal to establish a new initiative at NIH called "ARPA-H" modeled on the Department of Defense's "DARPA" which funds projects with a three-to-five-year time horizon. The request includes \$6.5 billion to fund ARPA-H over three years with \$2.5 billion to be distributed on a historically proportionate basis amongst the NIH's 26 Institutes and Centers, with most ICs receiving a 2.3 percent increase over FY22. The request also includes \$250 million for a new laboratory and clinical facility at NIH. With the proposed increased FY22 funding, "...NIH estimates it will support a total of 44,343 research project grants, an increase of 2,260 above FY 2021, including a total of 12,664 new and competing grants."

The President's request underscored the need to identify and ameliorate the causes of health disparities to improve disease prevention and management, further investment to develop novel treatments for substance use disorders \$100 million to study the impact of climate change on human health as well as doubling funding for NIH's gun violence research, bringing NIH's portion to \$25 million with CDC designated to receive \$25 million as well. The budget request did not mention research recovery funds to assist with research and training opportunities lost during the pandemic.

In response to the pandemic, NIH was provided over \$3 billion in emergency supplemental funds to speed the development of vaccines, diagnostics, therapeutics for SAR-COV-19. A portion of those funds will also be spent on studying the long-lasting health and mental health consequences of COVID-19.

NIH's FY22 budget summary can be found [here](#).

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

The President's request includes \$10.2 billion for NSF, a \$1.7 billion or 20 percent increase above FY21 (\$8.5 billion). This level of funding would support \$1.2 billion for climate and clean energy related research, increase by \$100 million funding (roughly a 50 percent increase) for programs that aim to increase participation of groups traditionally underrepresented in science and engineering, and establish a new Directorate for technology, innovation, and partnerships (TIP) within NSF to help translate research into practical applications.

The request for the new TIP directorate is \$865 million, which the request builds upon \$352 million for some of these programs in FY20. Those programs include the Partnerships for Innovation (PFI), Convergence Accelerator, I-Corps, and SBIR and STTR (moved from the Engineering Directorate to TIP). The budget request proposed three divisions for the TIP Directorate and one office, and also includes \$200 million to launch a new Regional Innovation Accelerator (RIA) Center program.

Across several of the research directorates (including TIP), the request totals \$440 million for clean energy technology funding, building on an estimate of \$334 million in FY21. The goals behind this funding include foundational research, clean-energy infrastructure, and workforce development.

Notably, the overall agency request includes a 25 percent increase for agency operations and award management (AOAM), a “course correction...to cover the full cost of doing business,” including establishing the new TIP directorate and having a sensitive compartmentalized information facility (SCIF) at headquarters. The request also includes a 47 percent increase for the Office of International Science and Engineering (OISE).

On the research recovery front, the NSF request notes that “the primary known impact of COVID-19 on operating facilities at the present time is the loss of science caused by a number of facilities having to suspend or reduce operations due to the pandemic; this loss of science does not generally result in NSF costs beyond the appropriated dollars except in a few cases.” In the Major Research Equipment Facilities and Construction (MREFC) portions of the request, preliminary estimates of COVID-19 impacts are detailed for each project.

Outside of the discretionary request, the White House’s [budget overview](#) also includes a mandatory funding proposal from the America Jobs Plan for the new NSF TIP directorate, breaking out annual funding over FY22-FY31 for a total of \$50 billion.

NSF’s FY22 budget summary can be found [here](#).

### **Climate Science:**

The President’s budget proposes over \$4 billion to fund a broad portfolio of research across multiple agencies including the Department of the Interior, NASA, NSF, and others to improve understanding of the changing climate and inform adaptation and resilience measures. This includes the creation of Advanced Research Projects Agency-Climate (ARPA-C) focused on climate related science and technology activities. This initiative includes \$500 million in proposed funding through several federal agencies, including: USDA’s Agriculture Research Service \$95 million; Department of Energy \$200 million; NOAA \$40 million; USGS \$60 million; Department of Transportation \$50 million; Environmental Protection Agency \$30 million; Department of Housing and Urban Development \$5 million; and the Department of Homeland Security.

### **STUDENT AID AND HIGHER EDUCATION OVERVIEW:**

#### **Department of Education (ED):**

The President’s request includes \$3.3 billion in discretionary funds for Higher Education programs aimed at improving student achievement and increasing access to a high-quality education for all students. The budget proposes a Pell Grant maximum award of \$8,370 for award year 2022-2023, an increase of \$1,875 over the previous year. The proposed increase would be funded through discretionary funding to increase the maximum Pell Grant by \$400, and an additional \$1,475 as proposed in the American Families Plan. Together, they represent the initial steps of the President’s goal to double the Pell Grant. The President’s proposal also expands Pell Grant eligibility to students who are Deferred Action for Childhood Arrivals (DACA/DREAMers) recipients.

Also, the President's budget includes two new higher education programs put forward in the American Families Plan that would provide for free or affordable and accessible college for all students. The first would be a federal-state partnership to ensure first-time students and workers who need to gain new skills can enroll in free community college to earn a degree or credential. The second would be to provide grants to eligible four-year HBCUs, Tribal Colleges and Universities, and Minority-Serving Institutions to tackle longstanding inequities in postsecondary education.

In addition, the President's budget includes \$62 billion over 10 years to support a comprehensive set of completion and retention activities at colleges and universities that serve high numbers of low-income students.

The following are proposed funding levels for other student aid and higher education programs:

- Federal Work Study (FWS) -- \$1.190 million, the same as appropriated for FY21
- Supplemental Education Opportunity Grant (SEOG) -- \$880 million, the same as appropriated for FY21
- Graduate Assistance in Areas of National Need (GAANN) -- \$23.5 million, 0.5 percent increase from FY21
- Institute of Education Sciences (IES) -- \$737.5 million, a 15 percent increase from FY21
- International Education and Foreign Language Studies (Title VI) -- \$78 million, a slight increase from FY21
  - Domestic Programs -- \$69.4 million, the same as appropriated for FY21
  - International Programs -- \$8.8 million, the same as appropriated for FY21

The Department of Education's FY22 budget summary can be found [here](#).