Office of Science Program Update

J. Stephen Binkley, Deputy Director
Office of Science
U.S. Department of Energy

September 23, 2019

Outline

- **Personnel Update**

- **Budget update**

- **Administration FY 2021 Priorities**

- **Diversity & Inclusion**

- **R&D Protection**

Appointee Status, continued

Director, Office of Science Nominee Christopher Fall

- Nomination announced May 18, 2018

- Senate Hearing June 26, 2018, voted out of Committee July 24, 2018

- Senate Confirmation by unanimous consent on May 23, 2019

FY 2020 President's Budget Request

Supports Cutting-Edge Basic Research and Leading Scientific User Facilities. The Budget provides $5.5 billion for the Office of Science to continue its mission to focus on early-stage research, operate the national laboratories, and continue high priority construction projects. Within this amount, $500 million is budgeted for Exascale computing to help secure a global leadership role in supercomputing, $169 million for Quantum Information Science, $71 million for artificial intelligence and machine learning, and $25 million to enhance materials and chemistry foundational research to support U.S.-based leadership in microelectronics.

- Within the Office of Science, Science Laboratory Infrastructure focuses on strengthening the backbone of the labs with $118 million to modernize aging critical infrastructure and laboratory space.

- The Budget continues to ensure access to the scientific user facilities of the future, including $104 million for the Long Baseline Neutrino Facility/Deep Underground Neutrino Experiment and $40 million to complete the Facility for Rare Isotope Beams.

- The Budget prioritizes select infrastructure and testbeds to maintain the world-class nature of national laboratory facilities and better enable private sector demonstration and deployment of energy technologies.

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Office of Science Budget Status

	FY 2019		FY 2020		
	President's Request	Enacted Approp	President's Request	House Mark	Senate Mark
Office of Science					
Advanced Scientific Computing Research	899,010	935,500	920,888	956,540	1,029,000
Basic Energy Science	1,850,000	2,166,000	1,858,285	2,143,000	2,325,000
Biological and Environmental Research	500,000	705,000	494,434	730,000	770,000
Fusion Energy Sciences	340,000	564,000	402,750	688,000	570,000
High Energy Physics	770,000	980,000	768,038	1,045,000	1,065,000
Nuclear Physics	600,000	690,000	624,854	735,000	736,000
Workforce Development for Teachers and Scientists	19,000	22,500	19,500	25,000	25,000
Science Laboratories Infrastructure	126,852	232,890	163,600	250,830	394,000
Safeguards and Security	106,110	106,110	110,623	110,630	113,000
Program Direction	180,000	183,000	183,000	186,000	188,000
Total Office of Science	5,390,972	6,585,000	5,545,972	6,870,000	7,215,000

- Continuing Resolution through November 21 passed by House on September 20, 2019; passage of the CR in Senate is anticipated

FY 2021 Administration R&D Priorities

EXECUTIVE OFFICE OF THE PRESIDENT

WASHINGTON, D.C.

August 30, 2019

M-19-25

MEMORANDUM FOR THE HEADS OF EXECUTIVE DEPARTMENTS AND AGENCIES

FROM: RUSSELL T. VOUGHT
            ACTING DIRECTOR, OFFICE OF MANAGEMENT AND BUDGET

            DR. KELVIN K. DROEGEMEIER
            DIRECTOR, OFFICE OF SCIENCE AND TECHNOLOGY POLICY

SUBJECT: Fiscal Year 2021 Administration Research and Development Budget Priorities

"We stand at the birth of a new millennium, ready to unlock the mysteries of space, to free the Earth from the miseries of disease, and to harness the energies, industries, and technologies of tomorrow."

President Donald J. Trump, 2017 Inaugural Address

Office of Science Touchpoints:	
• High performance computing	• Machine Learning/AI
• Quantum Information Science	• Semiconductor R&D
• Critical minerals/materials	• Advanced communications networks
• Autonomy	• Advanced manufacturing
• Energy early-stage R&D	• Nuclear fission technologies
• Earth System Predictability	• Bioeconomy/biosecurity/biomedicine
• Data infrastructure	• Priority Crosscutting Actions

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FY 2021 Administration R&D Priorities

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→ - **Diversity & Inclusion**

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Recognition of Shared Threat

- **While international cooperation is essential to accelerate research and development, some countries are aggressively pursuing access to foreign science and technology advancements and intellectual property to the detriment of our economic prosperity and security**
  - Includes illicit acquisition of U.S. technology through intellectual property theft and forced technology transfer
- **Additional concerns include:**
  - Undisclosed foreign government or institutional affiliations by U.S. researchers
  - Undisclosed funding of U.S. researchers from foreign government talent recruitment programs
  - Breaches of the peer review process

International Collaborations – Update

- Foreign Talent Programs (DOE Order 486.1, June 2019)
- Sensitive technologies & countries (in progress)
- Path forward – many details to be worked out
  - DOE National Laboratories (M&O Contracts)
    - National Lab Chief Research Officers – defining sensitive countries
    - National Lab Chief Operating Officers – defining implementation
    - Implementation via DOE Orders and Management & Operations Contracts by end of calendar year
  - Universities (grants)
    - Preliminary discussions underway with small set of universities
      - Workshop conducted in early June
    - Outreach to larger number of universities and university associations
  - Close collaboration among Federal science agencies (NSF, NIH, DoD)
  - Interagency coordination through OSTP JCORE (Joint Committee on Research Environments, established May 2019