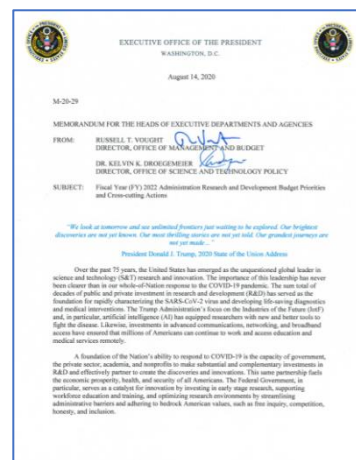


## Policy Update: The Trump Administration Releases its FY 2022 R&D Budget Priorities Aimed Industries of the Future and Pandemic Response

Lewis-Burke Associates, LLC – August 17, 2020

The Trump Administration released its [annual memorandum](#) on priorities for research and development (R&D) for fiscal year (FY) 2022, offering a forecast of federal agencies' science and technology (S&T) investments in the next President's budget request. Like prior years, the memo was developed and issued jointly by the White House Office of Management and Budget (OMB) and Office of Science and Technology Policy (OSTP). As the first R&D memo released since the start of the COVID-19 pandemic, a new priority area is "American Public Health Security and Innovation." The purpose of this priority area is to bring "under a single, comprehensive umbrella biomedical and biotechnology research and development aimed at responding to the pandemic and ensuring the U.S. S&T enterprise is maximally prepared for any health-related threats." This includes new investments in diagnostic, vaccine, device, and therapeutic development as well as infectious disease modeling, prediction, and forecasting.



The memorandum also makes clear that Industries of the Future remains the top R&D priority. Industries of the future includes five R&D budget priority areas—Artificial Intelligence (AI), quantum information science (QIS), advanced communications networks/5G, advanced manufacturing, and biotechnology. The Trump Administration remains committed to doubling non-defense federal funding for AI and QIS by FY 2022 relative to the first year of the Trump Administration in FY 2019. Non-defense AI and QIS funding is projected to reach \$2 billion and \$1 billion, respectively, in FY 2022 and has received strong bipartisan congressional support over the last several years. In addition to advancing and maintaining U.S. leadership in each of these Industries of the Future, the memorandum this year also prioritizes the convergence of these new technologies and capabilities to further accelerate the pace of discovery and yield economic and national security advantages. This is consistent with [recent recommendations](#) from the President's Council of Advisors on Science and Technology (PCAST) to establish Industries of the Future and Factories of the Future Institutes that would start to integrate, for example, AI, autonomy, advanced manufacturing, and next-generation communications.

The memo also emphasizes and elevates issues related to diversity, equity, and inclusion in STEM research and education. For investments in the workforce of the future, the memo directs federal agencies to "prioritize investments in research programs and other related activities" that "...increase diversity, equity, and inclusion in STEM" including "mechanisms to attract, prepare and support all Americans to pursue STEM pathways, especially for underrepresented and underserved populations..." A stated priority is to create "safe, diverse, inclusive, and equitable research environments for all members of the research enterprise, paying particular attention to the burdens COVID-19 has placed on the S&T workforce." Further, federal agencies should increase collaborations with "underrepresented

populations, and Historically Black Colleges and Universities (HBCUs) and minority serving institutions (MSIs) through multisector engagement that accelerates entrepreneurship and innovation to support the next generation of industry leaders.”

Below are the R&D priority areas identified in the memo (**new areas of emphasis in bold**):

- **American Public Health Security and Innovation**
  - **Diagnostic, Vaccine and Therapeutic R&D**
  - **Infectious Disease Modeling, Predication and Forecasting**
  - Biomedicine and Biotechnology
  - Bioeconomy
- American Leadership in Industries of the Future and Related Technologies
  - AI
  - QIS
  - Advanced Communications Networks
  - Advanced Manufacturing
  - Future Computing Ecosystem
  - Autonomous and Remotely Piloted Vehicles
- American Security
  - Resilience
  - Advanced Military Capabilities
  - Semiconductors
- American Energy and Environmental Leadership
  - Energy
  - Earth System Predictability **and Meteorological Services**
  - Oceans
  - **Arctic**
- American Space Leadership

The memo also contains four Cross-Cutting Priorities:

- Build the S&T Workforce of the Future
- Optimize Research Environments and Results
- Facilitate Multisector Partnerships and Technology Transfer
- Leverage the Power of Data

Of note, for the first time in the Trump Administration, national security and advanced military capabilities is not the top R&D priority. Due to public health and economic impacts of COVID-19, public health and biotechnology has been elevated from the fourth priority last year to the first this year. Industries of the Future remains the second priority but the highest funding priority, and national security fell to third place. Within national security, issues related to resilience and in particular capabilities to anticipate, prevent, respond, and recover from “physical threats and natural disasters”, “infectious diseases and other biological threats” and “extreme terrestrial and space weather events” overtook advanced military capabilities as the top priority.

The four new priority R&D areas include diagnostic, vaccine, and therapeutic R&D; infectious disease modeling, prediction, and forecasting; meteorological services as part of earth system predictability; and the Arctic. The first two are related to addressing COVID-19 and future pandemics as described earlier. Meteorological services refers to leveraging earth system capabilities to improve the application of

weather, climate, hydrologic, ocean, and other environmental data to benefit society. The focus on the Arctic is a recognition of growing geostrategic competition and growing access to its resources due to climate change. R&D would be focused on improved observation, understanding and predictability of the “physical, biological, and socio-economic processes of the Arctic.”

The only topic that was removed the list compared to last year is critical minerals, which was under American Security. Even though it was removed as a priority area, the Administration and federal agencies continue to make significant R&D investments to restore U.S. manufacturing of critical minerals, like rare earths, reduce the cost of extraction and recycling, and find alternatives.