

National AI Research Resource Task Force

LYNNE PARKER, DIRECTOR, NATIONAL AI INITIATIVE OFFICE,
WHITE HOUSE OFFICE OF SCIENCE AND TECHNOLOGY POLICY

ERWIN GIANCHANDANI, SENIOR ADVISOR FOR TRANSLATION, INNOVATION, AND PARTNERSHIPS,
NATIONAL SCIENCE FOUNDATION

Overview of National AI Initiative (NAII)

National AI Initiative Act of 2020: became law on January 1, 2020 as part of the “*William M. (Mac) Thornberry National Defense Authorization Act for Fiscal Year 2021*”, H.R. 6395, Division E.

DIVISION E—NATIONAL ARTIFICIAL INTELLIGENCE INITIATIVE ACT OF 2020

SEC. 5001. SHORT TITLE.

This division may be cited as the “National Artificial Intelligence Initiative Act of 2020”.

Bipartisan legislation defined National AI Initiative, with purpose of:

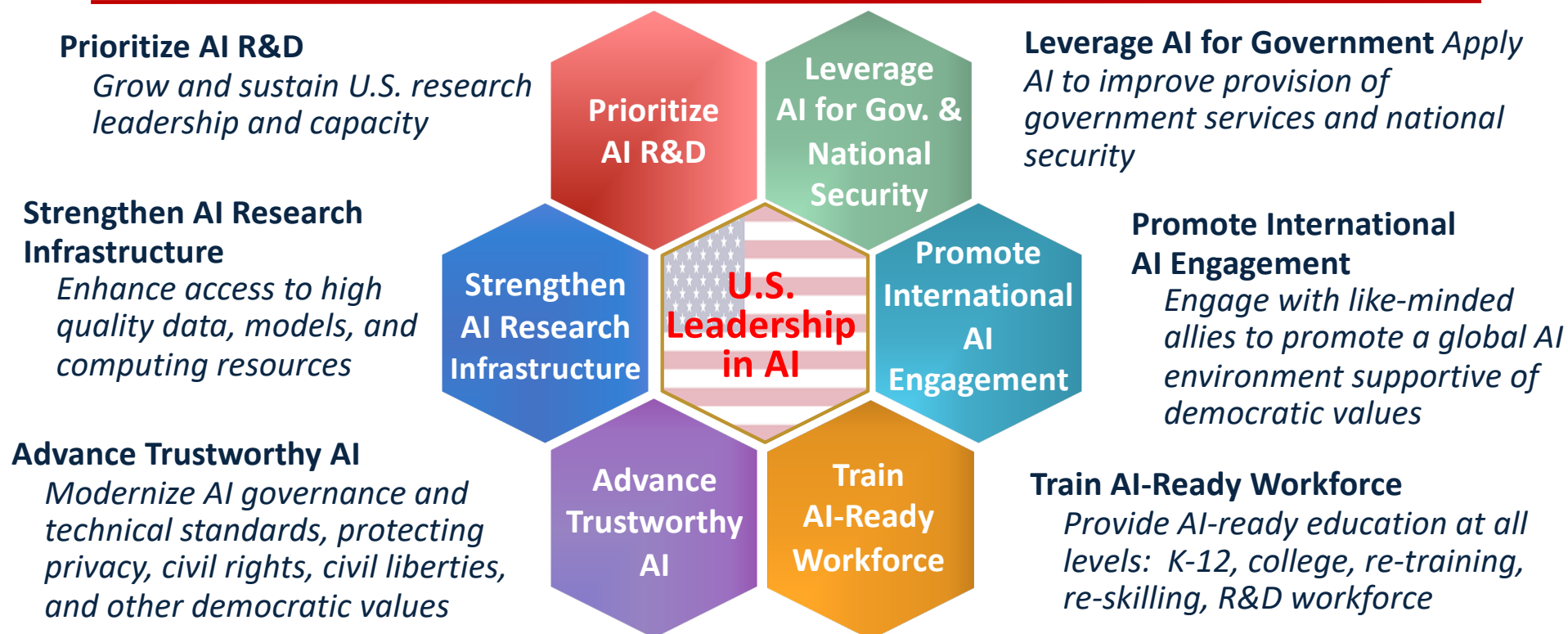
- Ensuring continued U.S. leadership in **AI research and development** (R&D);
- Leading world in development and use of **trustworthy AI** systems in public and private sectors;
- **Preparing present and future U.S. workforce** for integration of AI systems across all sectors of economy and society; and
- **Coordinating AI research, development, and demonstration** activities among civilian agencies, Department of Defense, and Intelligence Community to ensure that each informs work of the others.

National AI Initiative Office – Central Hub for Coordinating Federal Activities, Outreach

- Launched January 2021, per NAI Act
- Charged with overseeing and implementing the National AI Initiative
- Serves as central hub for Federal coordination and collaboration in AI research, development, and demonstration, as well as with private sector, academia, and other stakeholders involved in the initiative
- Conducts regular public outreach
- Promotes access to the technologies, innovations, best practices, and expertise derived from the National AI Initiative to agency mission and systems across the Federal Government



National AI Initiative



National AI Advisory Committee

Will advise President and National AI Initiative Office on:

- State of U.S. competitiveness and leadership in AI
- Progress made in implementing Initiative
- State of AI science
- AI and U.S. workforce issues
- How to leverage Initiative resources to streamline and enhance government operations
- Need to update the Initiative
- Balance of activities and funding across Initiative
- Whether strategic plan is helping U.S. leadership in AI
- Management, coordination, and activities of the Initiative
- Whether ethical, legal, safety, security, and other societal issues of AI are adequately addressed by the Initiative
- Opportunities for international collaboration with strategic allies on AI
- Accountability and legal rights, including oversight
- How AI can enhance opportunities for diverse geographic regions of the U.S.

AI Research Institutes

- Program launched in Oct. 2019
- Seeks to fund national hubs
- Multi-disciplinary, multi-sector research, innovation, education
- Each AI Institute is \$20M over five years

News Release 19-021

NSF leads federal partners in accelerating the development of transformational, AI-powered innovation

New funding opportunity anticipates \$200 million in long-term investments in AI research and education over the next 6 years

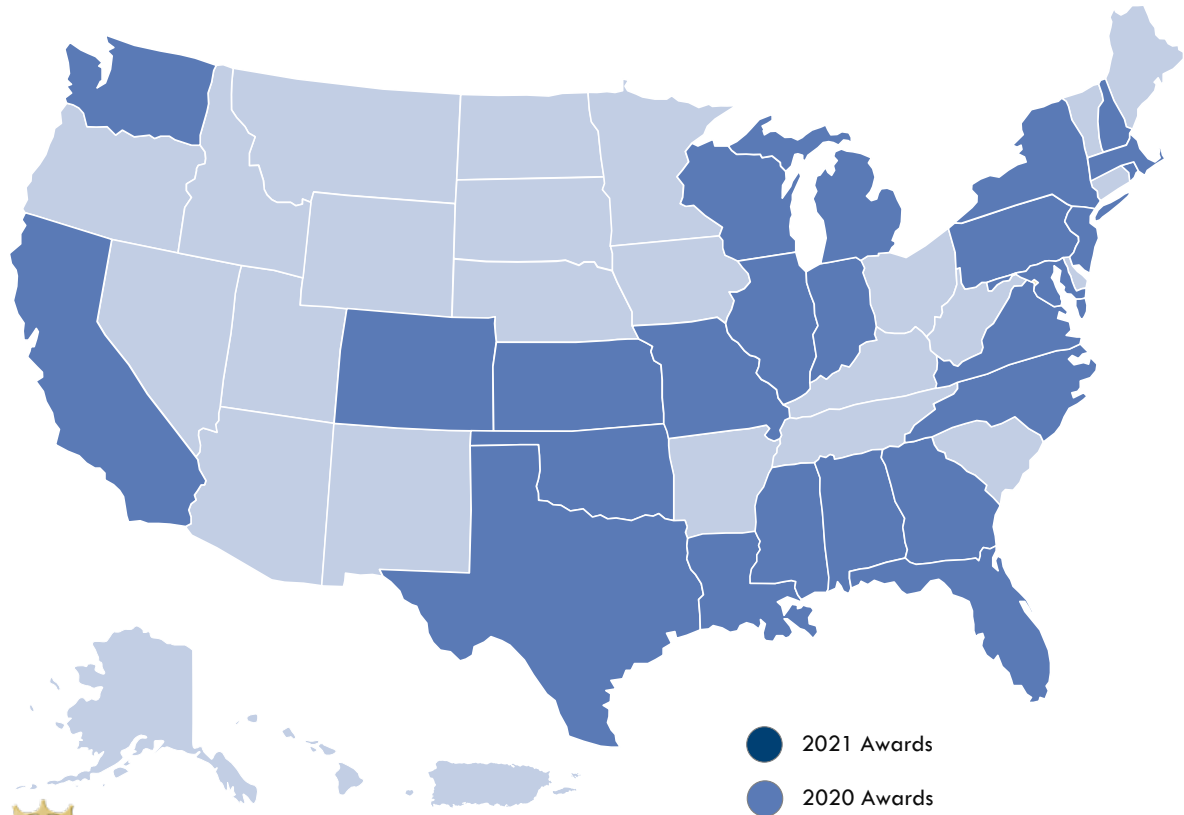


NSF's AI Research Institutes program will support longer-term research than typical grants.

[Credit and Larger Version](#)



AI Research Institutes

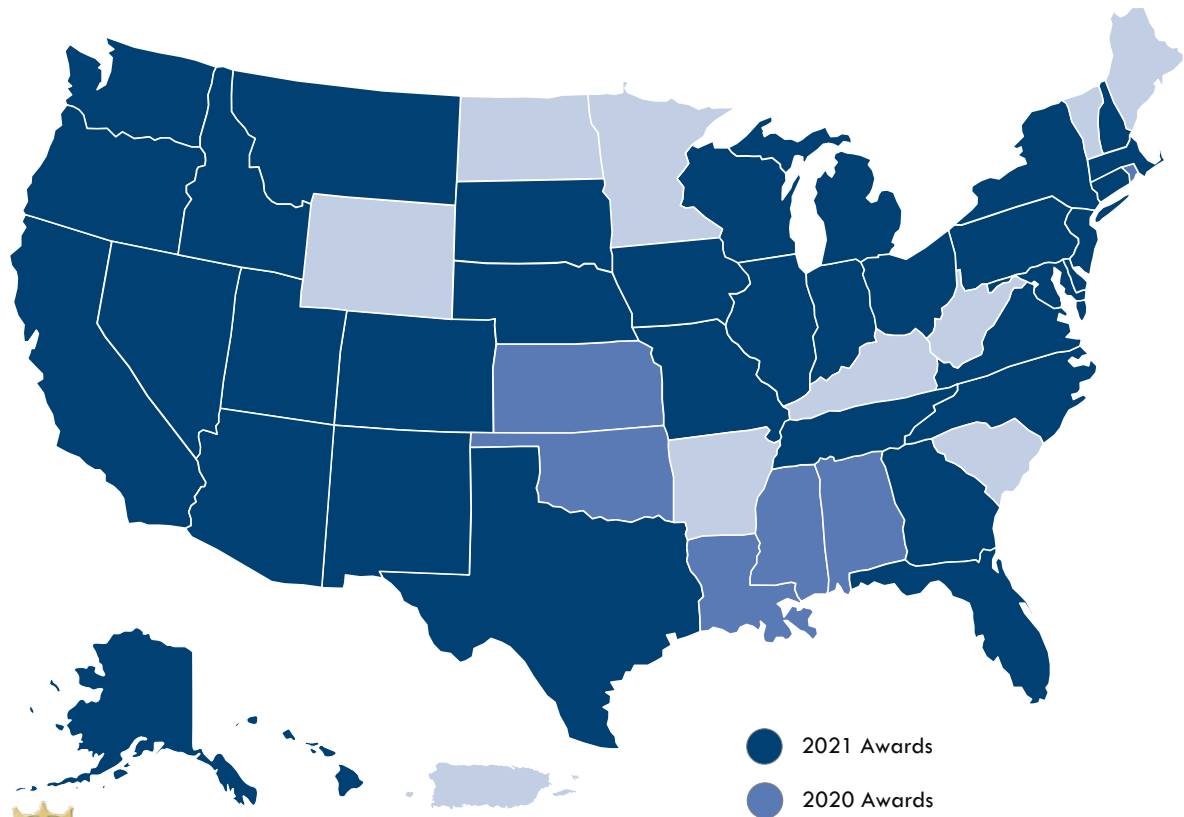


2020 AWARDS

- NSF AI Institute for Research on Trustworthy AI in Weather, Climate, and Coastal Oceanography
- NSF AI Institute for Foundations of Machine Learning
- USDA-NIFA AI Institute for Next Generation Food Systems
- USDA-NIFA AI Institute for Future Agricultural Resilience, Management, and Sustainability (AIFARMS)
- NSF AI Institute for Student-AI Teaming
- Molecule Maker Lab Institute (MMLI): NSF AI Institute for Molecular Discovery, Synthetic, and Manufacturing
- NSF AI Institute for Artificial Intelligence and Fundamental Interactions



AI Research Institutes

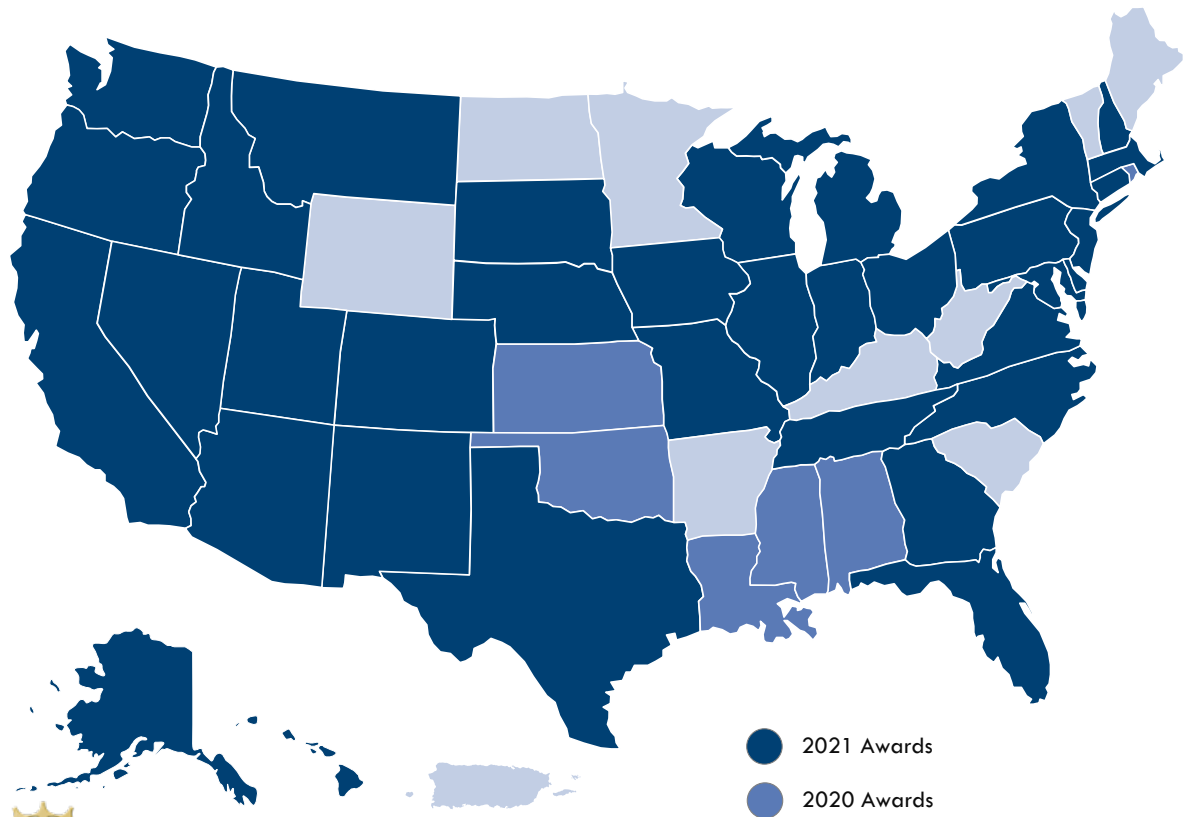


2021 AWARDS

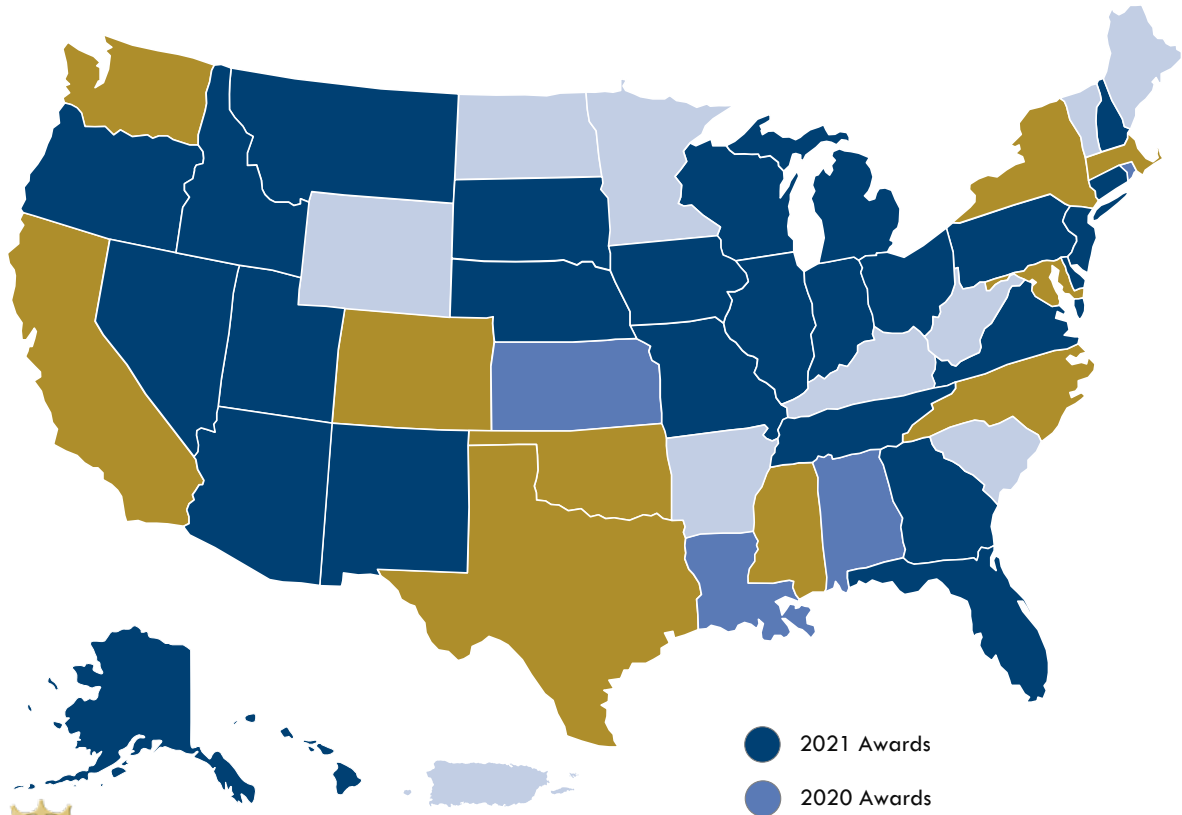
- NSF AI Institute for Collaborative Assistance and Responsive Interaction for Networked Groups (CARING)
- NSF AI Institute for Learning-enabled Optimization at Scale (TILOS)
- NSF AI Institute for Optimization
- NSF AI Institute for Intelligent Cyberinfrastructure with Computational Learning in the Environment (ICICLE)
- NSF AI Institute for Future Edge Networks and Distributed Intelligence (AI-EDGE)
- NSF AI Institute for Edge Computing Leveraging Next-generation Networks (Athena)
- NSF AI Institute for Dynamic Systems
- NSF AI Institute for Engaged Learning
- NSF AI Institute for Adult Learning and Online Education (ALOE)
- USDA-NIFA AI Institute: Agricultural AI for Transforming Workforce and Decision Support (AgAID)
- USDA-NIFA AI Institute: AI Institute for Resilient Agriculture (AIIRA)



AI Research Institutes



AI Research Institutes



***Institute for Research on
Trustworthy AI in Weather, Climate, and
Coastal Oceanography***

- **University of Oklahoma** (*Lead*)
- Colorado State University
- North Carolina State University
- University of Albany, SUNY
- TX A&M U Corpus Christi (*MSI*)
- University of Washington
- Del Mar College (*MSI*)
- University Corporation for Atmospheric Research/National Center for Atmospheric Research



AI Research Institutes



• State, local agencies

- Oklahoma Climate Survey,
- Division of Homeland Security and Emergency Services (NY)
- DOT (NY)
- Department of Environmental Conservation (NY)
- NY Thruway
- NY Independent System Operator
- NY Power Authority
- Texas Coastal Offices of the NWS
- National Park Service (in TX)
- Texas General Land Office
- Texas DOT
- Texas Commission on Environmental Quality
- Nueces County Coastal Parks
- City of Corpus Christi

• Industry collaborators

- Google
- IBM (The Weather Company)
- Nvidia
- Disaster Technologies, Inc.
- and others

• Federal collaborators

- **NOAA**: National Severe Storms Laboratory, Storm Prediction Center
- **NOAA**: National Geodetic Survey
- **NOAA**: Center for Operational Oceanographic Products and Services
- **Navy**: National Hurricane Center, Joint Typhoon Warning Center

Institute for Research on Trustworthy AI in Weather, Climate, and Coastal Oceanography

- **University of Oklahoma** (*Lead*)
- Colorado State University
- North Carolina State University
- University of Albany, SUNY
- TX A&M U Corpus Christi (*MSI*)
- University of Washington
- Del Mar College (*MSI*)
- University Corporation for Atmospheric Research/National Center for Atmospheric Research

NAIRR Task Force Mandate

Objective: to investigate the feasibility and advisability of establishing and sustaining a National Artificial Intelligence Research Resource; and to propose a roadmap detailing how such resource should be established and sustained.

Membership: The Task Force is composed of 12 members selected by the co-chairpersons of the Task Force from among technical experts in artificial intelligence or related subjects, of whom—

- 4 are representatives from government
- 4 are representatives from institutions of higher education
- 4 are representatives from private organizations

NAIRR Task Force Membership

Government:

Lynne Parker, OSTP

Erwin Gianchandani,
NSF

Frederick Streitz, DOE

Elham Tabassi, NIST

Academia:

Julia Lane, NYU

Fei-Fei Li, Stanford U

Michael Norman, UCSD

Dan Stanzione, U Texas-
Austin

Private organizations:

- Daniela Braga, DefinedCrowd
- Mark Dean, formerly IBM
- Oren Etzioni, Allen Institute for AI
- Andrew Moore, Google Cloud

What is a National AI Research Resource?

Vision: A shared computing and data infrastructure that would provide AI researchers and students across scientific fields with access to a holistic advanced computing ecosystem. This would include:

- Secure, high-performance, privacy-preserving computing frameworks;
- High-quality, representative datasets; and
- Appropriate educational tools and user support mechanisms.

Why: democratize access to the cyberinfrastructure that fuels AI research and development, enabling all of America's diverse AI researchers to participate in exploring innovative ideas for advancing AI, including communities, institutions, and regions that have been traditionally underserved.

Implementation Plan

Congress directed the task force to include the following in its implementation plan:

- i. Appropriate agency or organization responsible for implementation and administration
- ii. A governance structure.
- iii. Capabilities required to create and maintain a shared computing infrastructure to facilitate access to computing resources for researchers across the country, including scalability, secured access control, resident data engineering and curation expertise, provision of curated data sets, compute resources, educational tools and services, and a user interface portal.
- iv. An assessment of, and recommended solutions to, barriers to the dissemination and use of high-quality government data sets
- v. An assessment of security requirements and a recommendation for a framework for the management of access controls.
- vi. An assessment of privacy and civil rights and civil liberties requirements
- vii. A plan for sustaining the Resource, including through Federal funding and partnerships with the private sector.
- viii. Parameters for the establishment and sustainment, including agency roles and responsibilities and milestones to implement the Resource

External Consultations

- (1) The National Science Foundation.
- (2) The Office of Science and Technology Policy.
- (3) The National Academies of Sciences, Engineering, and Medicine.
- (4) The National Institute of Standards and Technology.
- (5) The Director of National Intelligence.
- (6) The Department of Energy.
- (7) The Department of Defense.
- (8) The General Services Administration.
- (9) The Department of Justice.
- (10) The Department of Homeland Security.
- (11) The Department of Health and Human Services.
- (12) Private industry.
- (13) Institutions of higher education.
- (14) Civil and disabilities rights organizations.
- (15) Such other persons as the Task Force considers appropriate

Request for Information on the NAIRR Implementation Plan: *Public Input*

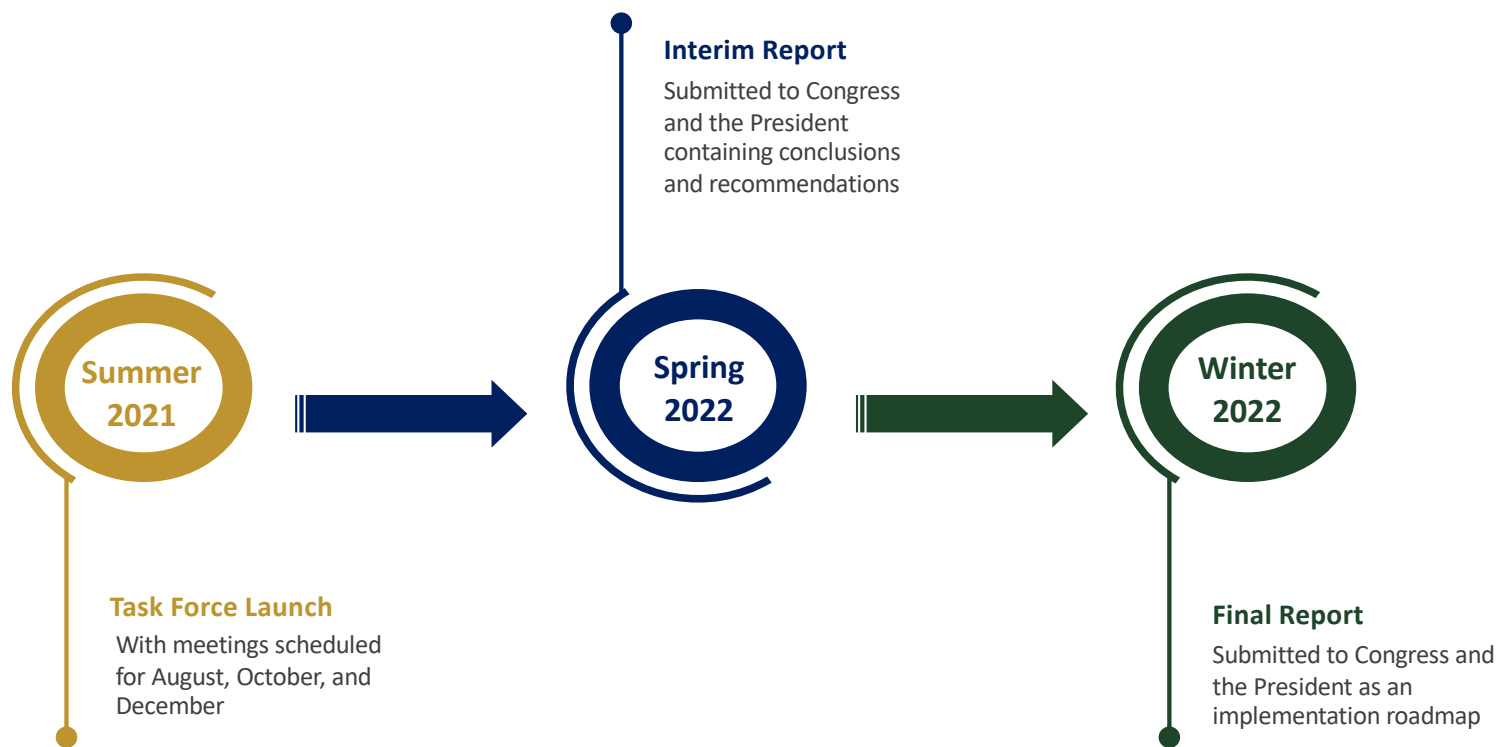
- OSTP and NSF released this RFI on July 23 (86 FR 39081)
- Comments due October 1, 2021 (was Sept. 1):
 1. What options should the Task Force consider for any of roadmap elements, and why?
 2. Which capabilities and services provided through the NAIRR should be prioritized?
 3. How can the NAIRR and its components reinforce principles of ethical and responsible research and development of AI, such as those concerning issues of racial and gender equity, fairness, bias, civil rights, transparency, and accountability?
 4. What building blocks already exist for the NAIRR, in terms of government, academic, or private-sector activities, resources, and services?
 5. What role should public-private partnerships play in the NAIRR? What exemplars could be used as a model?
 6. Where do you see limitations in the ability of the NAIRR to democratize access to AI R&D? And how could these limitations be overcome?



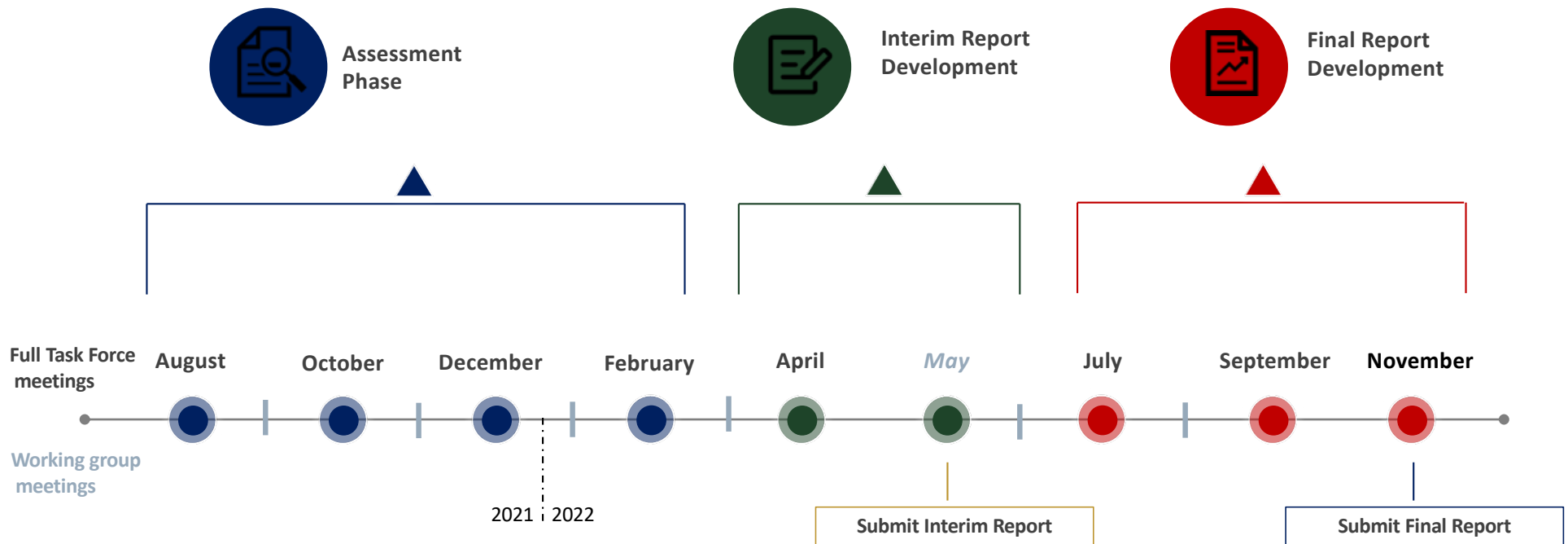
The screenshot shows the official Federal Register notice for the Request for Information (RFI) on an Implementation Plan for a National Artificial Intelligence Research Resource. The notice is published by the National Science Foundation and the Science and Technology Policy Office on 07/23/2021. It includes a comment period ending on 09/01/2021 and a link to submit a formal comment. The document details section provides the following information:

PUBLISHED DOCUMENT	DOCUMENT DETAILS
AGENCY: White House Office of Science and Technology Policy and National Science Foundation.	Printed version: PDF
ACTION: Request for information.	Publication Date: 07/23/2021
SUMMARY: The Office of Science and Technology Policy and the National Science Foundation are issuing this Request for Information (RFI) to inform the work of the National Artificial Intelligence Research Resource (NAIRR) Task Force ("Task Force"). The Task Force has been directed by Congress to develop an implementation roadmap for a shared research infrastructure that would provide Artificial Intelligence (AI) researchers and students across scientific disciplines with access to computational resources, high-quality data, educational tools, and user support.	Agencies: National Science Foundation Office of Science and Technology Policy
DATES: To be considered, responses and comments must be received, no later than 11:59 p.m., EDT on September 1, 2021.	Dates: To be considered, responses and comments must be received, no later than 11:59 p.m., EDT on September 1, 2021.
	Comments Close: 09/01/2021
	Document Type: Notice
	Document Citation: 86 FR 39081
	Page: 39081-39082 (2 pages)
	Document Number: 2021-15660

Timeline & Deliverables

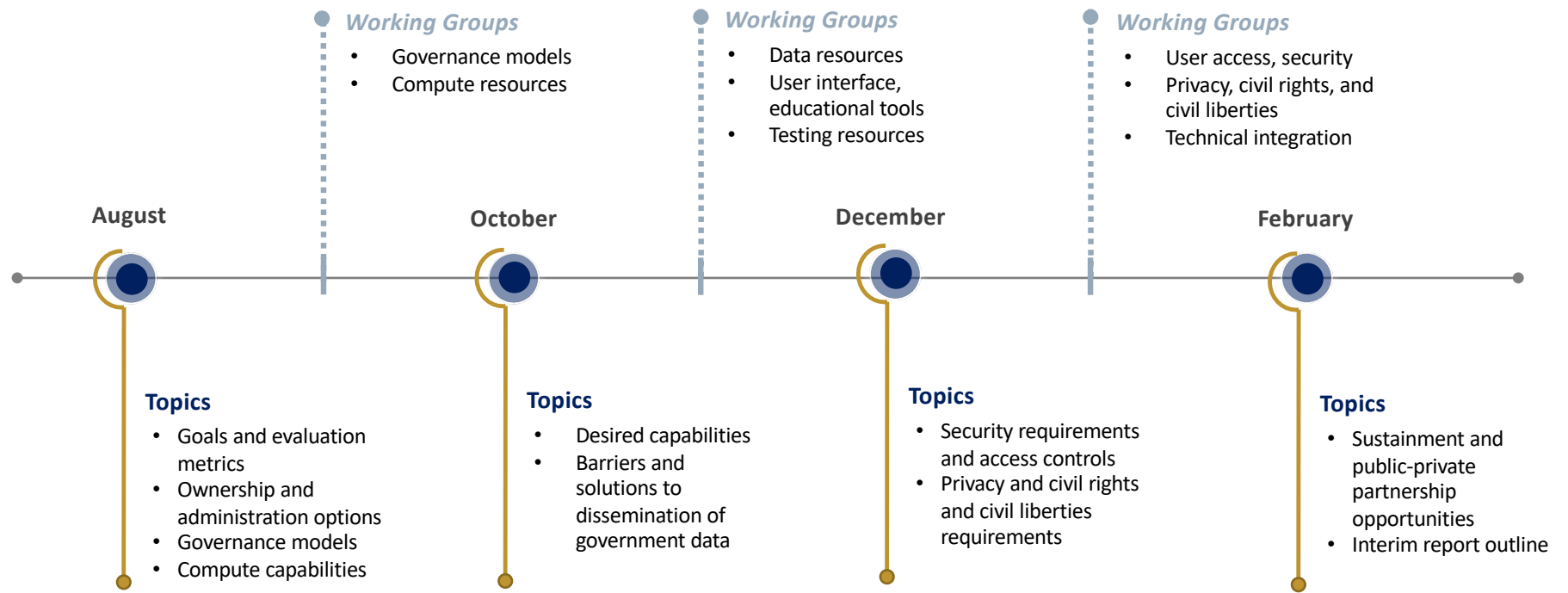


Timeline





Assessment Phase



Thank You

- More information, including how to respond to the RFI:
 - <https://www.ai.gov/nairrtf/>
- Email us:
 - lynne.e.parker@ostp.eop.gov
 - egiancha@nsf.gov