



U.S. National Science Foundation  
Regional Innovation Engines

# Engaging with NSF Regional Innovation Engines for Impact in EPSCoR Jurisdictions

## NSF Engines Solicitation (NSF 24-565)

### Deadlines

- ✓ Letters of Intent: June 18, 2024
- ✓ Preliminary proposals: August 6, 2024
- ✓ Full Proposal (invitation only): February 11, 2025

# Presentation Roadmap

**1. Overview of NSF Engines Program**

**2. Summary of Round 1 – Award Highlights**

**3. New NSF Engines Funding Opportunity**

**4. Proposal Submission and Merit Review Process**



# NSF Regional Innovation Engines (NSF Engines)

The Engines Program supports diverse, regional coalitions to engage in use-inspired research, drive research results to the market and society, promote workforce development, and ultimately stimulate the economy and create new jobs.

NSF Engines are funded at up to **\$160 million** for up to **10** years

**NSF aims to catalyze vibrant innovation ecosystems with a focus on regions that have not fully benefited from the tech boom.**

CHIPS and  
Science Act  
2022

## Opportunity available to:



Academia



Business & Industry



Governments



Nonprofits

# NSF Regional Innovations Engines (NSF Engines) Mission and Scope

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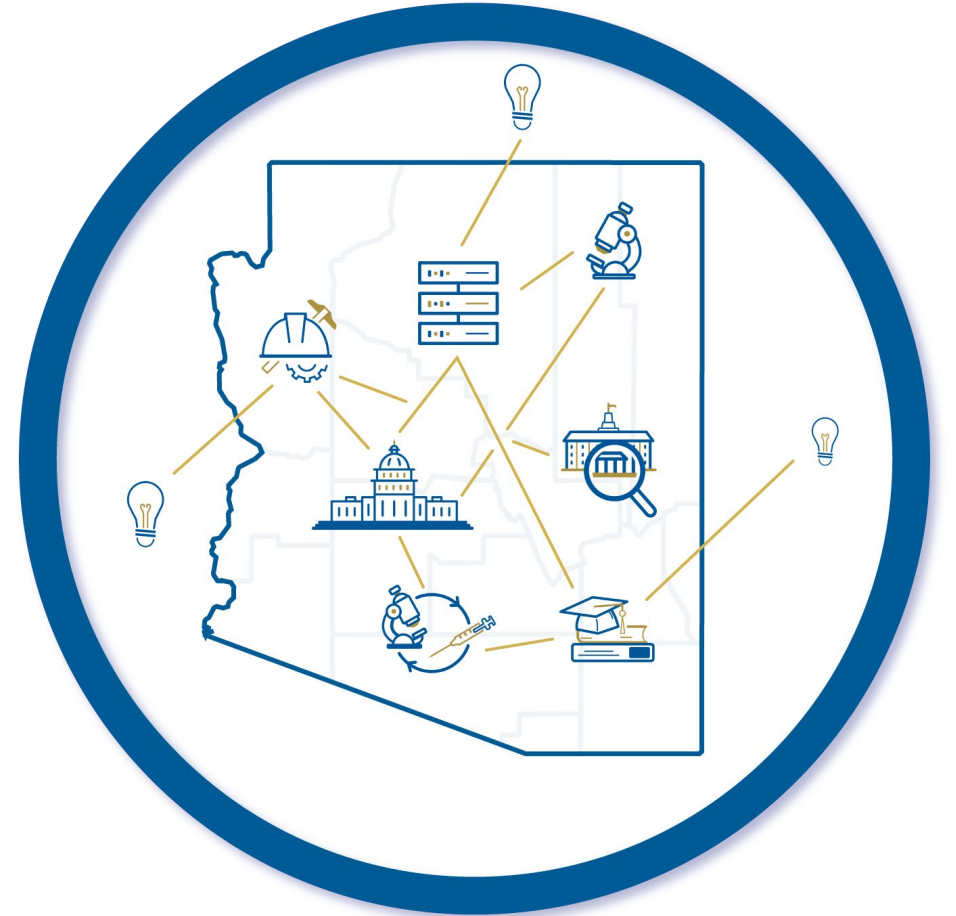
*Creating opportunity everywhere and enabling innovation anywhere*

- The NSF Engines Program seeds the development of “place-based” innovation ecosystems.
- The mission of the NSF Engines program is to accelerate the development of sustainable, inclusive, and geographically diverse regional innovation ecosystems that advance key technologies and address pressing regional, national, societal and/or geostrategic challenges.
- Up to \$160 M per award recipient over 10 years



# What Is An Engine?

- **The Coalition:** partners and stakeholder organizations working together to achieve the goals of the NSF Engine, led by a full-time CEO
- **Shared Purpose:** accelerate its region of service into a *national-leading and inclusive technology-driven ecosystem* that drives equitable economic and societal impacts
- **Vision for High Impact:** a shared vision, deep connections among regional stakeholders and assets, drive R&D and translation outcomes, create jobs



# Expanding the Geography of Innovation

- **NSF aims to catalyze vibrant innovation ecosystems with a focus on regions that have not fully benefited from the tech boom.**
- Use-inspired research that addresses pressing regional, national, societal and/or geostrategic challenges.
- Each NSF Engine is expected to center on a strong R&D and technology topic area and have a cross-sector coalition in place that can build strong relationships among regional stakeholders.
- The goal is more than a collection of assets located in the same region. An NSF Engine should work together as a network of partners and community stakeholders to build its region into a national-leading ecosystem.
- Create new growth opportunities in regions of America and within untapped populations and underserved communities that have not yet fully participated in the technology boom of the past several decades.
- **Funding for this program will prioritize NSF Engines in regions with less-established innovation ecosystems.**



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# NSF establishes 10 inaugural NSF Regional Innovation Engines across the country

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- The first-ever NSF Engines awards span 18 states.
- Initial investment of \$150 million over two years (\$15 million per NSF Engine), with a potential investment of nearly \$1.6 billion over the next decade (\$160 million per NSF Engine).
- This groundbreaking investment represents the single largest broad investment in place-based science and technology R&D in our nation's history.

*"The inaugural NSF Engines awards demonstrate our enduring commitment to create opportunity everywhere and enable innovation anywhere. Through these NSF Engines, NSF aims to expand the frontiers of technology and innovation and spur economic growth across the nation through unprecedented investments in people and partnerships. NSF Engines hold significant promise to elevate and transform entire geographic regions into world-leading hubs of innovation."*

*- NSF Director Sethuraman Panchanathan*



# NSF Engines by the Numbers



**679**

Concept outlines submitted



**58**

NSF Engines Development Awards



**10**

NSF Engines Inaugural Awards



**18**

States receiving NSF Engines funding



**10**

Key technology areas from the CHIPS & Science Act represented in the portfolio



**450+**

Organizations partnering with NSF Engines Award recipients



**2:1+**

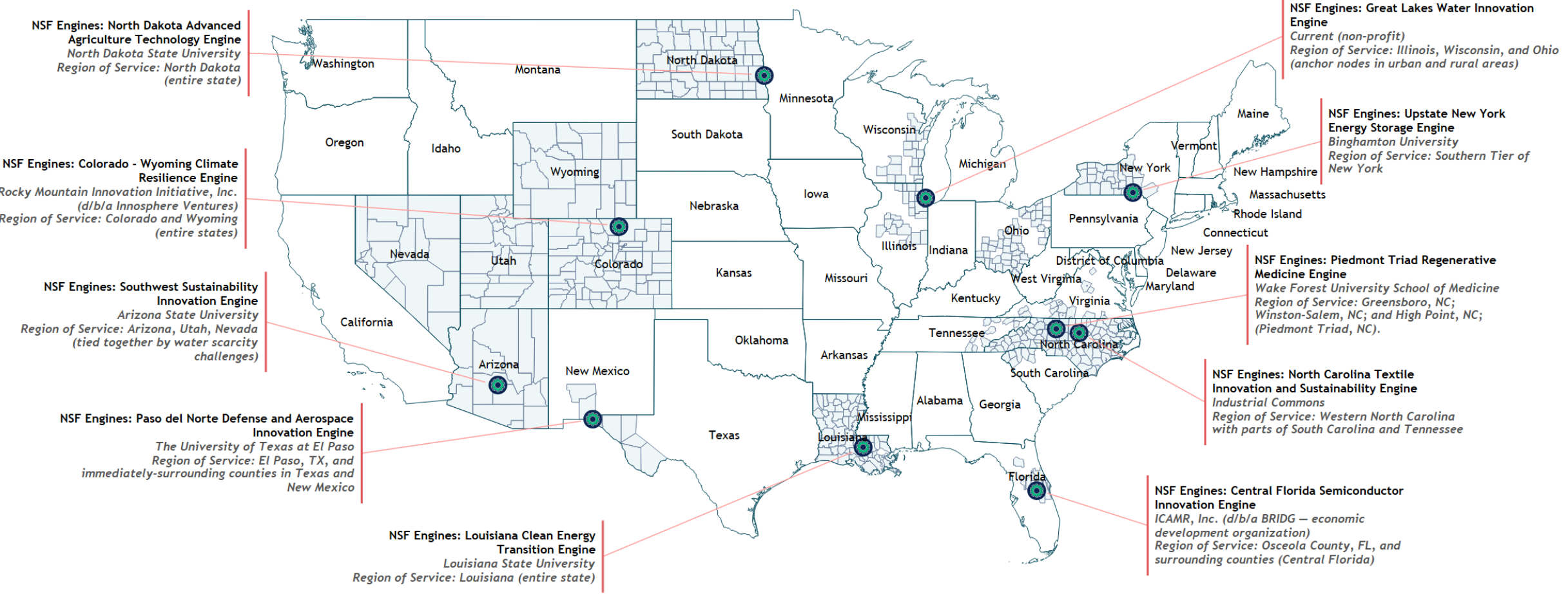
Match of NSF funds from corporate, philanthropic, and government sources.



**40%**

Lead orgs that are first-time NSF award recipients

# NSF Engines Inaugural Awards



# NSF Engines Inaugural Awards



10

Total Number of NSF Engines Awards



476

Total Number of Distinct Organizations



331

Total Number of Distinct Organizations Co-Investing

**Disclaimer:** These partnerships are at different stages of development and should not be viewed as finalized commitments.

9 of 10 NSF Engines include partners in **EPSCoR Jurisdictions**



6 of 10 NSF Engines include partners **NEW to NSF Funding**



10 of 10 NSF Engines include **Community College** as partners



5 of 10 NSF Engines include **Other Federal Agencies** as partners



9 of 10 NSF Engines include **Minority-Serving Institutions (MSI)** as partners



5 of 10 NSF Engines include **Hispanic Serving Institutions (HSI)** as partners



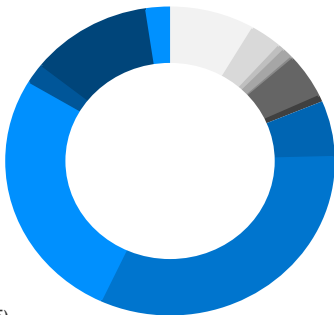
1 of 10 NSF Engines include **Tribal College/University** as partners



3 of 10 NSF Engines include **Historically Black College/University (HBCU)** as partners

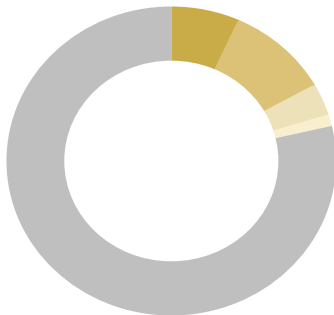


81% of All Organizations are **Non-Academic Organizations**



Organization Type  
 ■ Institution of Higher Education (IHE)  
 ■ Non-Academic Organization

22% of All IHE Organizations are **Minority Serving Institutions (MSI)**



MSI Type  
 ■ Yes, HBCU  
 ■ Yes, HSI  
 ■ Yes, Tribal College  
 ■ Yes, Other  
 ■ No, Not an MSI



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# NSF 24-565: NSF Engines – A New Funding Opportunity

## Up to \$160 million per award over 10 years

Letter of intent deadline:

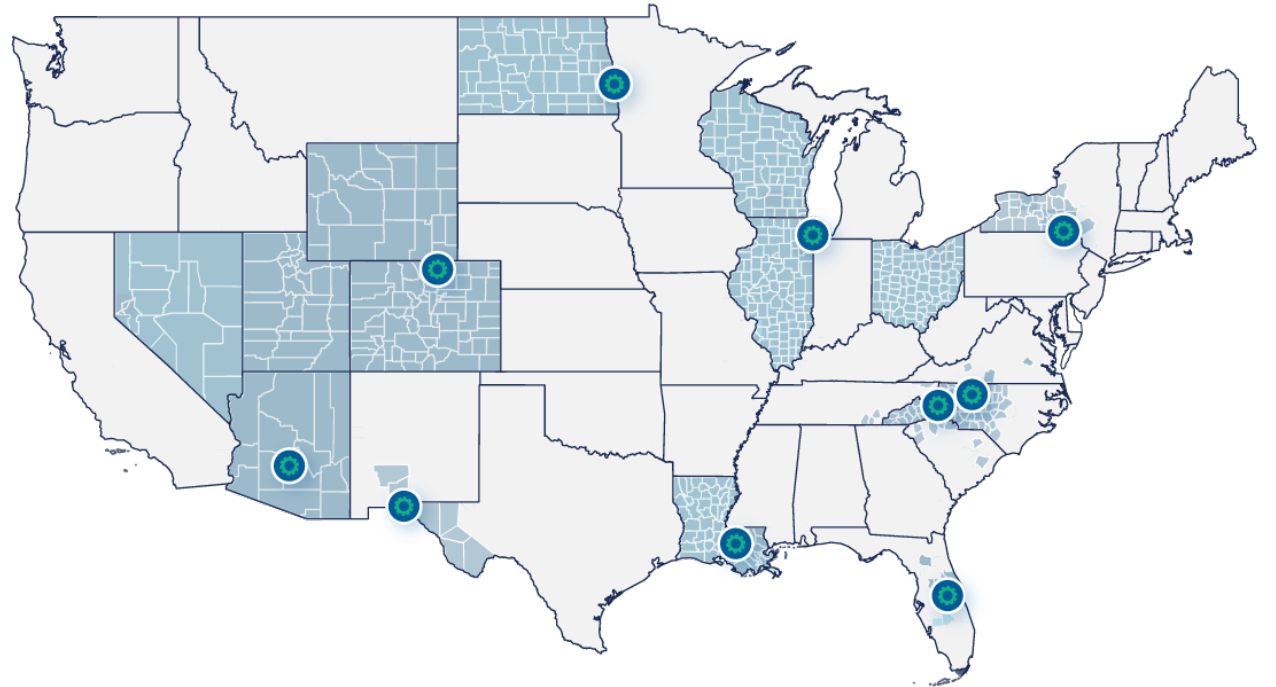
**June 18, 2024**

Preliminary proposal deadline:

**August 6, 2024**

Full proposal deadline:

**February 11, 2025**



NSF Engines is one of the largest broad-based R&D and economic development programs in the history of the federal government.

# Who is Eligible to Submit Proposals?

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## **Eligible to serve as the lead organization or subaward recipient**

- Institutions of Higher Education (IHEs)
- Non-profit, non-academic organizations
- For-profit organizations
- Tribal Nations
- State and local governments

## **Eligible to serve only as a subaward recipient**

- Federally Funded Research and Development Centers
- National Laboratories



# The NSF Engines Model: Foundational Elements

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## Building a Foundation: Strategic Decision Points

- Topic Area and Regional Vision
- Region of Service
- Strategic Plan
- Choice of Lead Organization

## Support Infrastructure

- Lead Organization
- Chief Executive Officer (CEO)
- Core Management Team
- Core Partners
- Governance Board

# 7 Key Drivers of Ecosystem Change

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Proposals should highlight a team's competitive advantages and strengths among the key drivers and explain plans to address gaps with particular attention to those areas that could benefit most from the NSF Engines award.

NSF Engines are expected to develop an interconnected set of initiatives, efforts, and action plans, spanning the **seven key drivers**:

1. Cross-sector Partnerships and Stakeholder Alignment
2. Use-inspired Research and Development (R&D)
3. Translation of Innovation to Practice
4. Workforce Development
5. Inclusive Engagement
6. Strategic Regional Investment and Demonstrable Sources of Sustainable Capital
7. Governance and Management



# Region of Service

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**NSF Engines will have a proposed region of service as follows:**

- A **geographically contiguous area** impacted by the NSF Engine's efforts and activities.
- The proposed region of service must be tightly interconnected (in vision and stakeholder alignment) and the proposed topic area is supported by a multi-sector regional coalition.
- **The choice of the region of service and how the proposal explains the reasons for its selection will be part of the merit review criteria.**
- **A large region of service** could dilute the effects of place-based economic indicators used for impact assessment, and therefore **could raise serious concerns in the merit review process.**
- A geographically large region of service can limit meaningful collaboration between partner institutions and stakeholders.

# Inclusive Engagement

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**NSF Engines are expected to incorporate plans for the following into their approach:**

- Delivering **economic opportunities for everyone** in the region of service, regardless of background, socioeconomic status, location, or any other factors.
- Leadership and stakeholders who are **broadly representative of the region of service.**
- Periodic assessment of the team's efforts to **improve diversity** and **enable equitable prosperity.**
- **Deep, intentional, and persistent approaches** to building inclusive teams and broadening access.
- Attracting individual new participants from underrepresented groups into NSF Engine efforts **AND** expanding prosperity into new communities and geographies.

# Strategic Regional Investment and Demonstrable Sources of Sustainable Capital

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**NSF Engines are expected to incorporate the following into their approach:**

- **New, NSF Engine-specific investments:** Meaningful **net new investment** in the region **AND** investment directed specifically for the proposed topic area and activities.
- **Large, secured or contingent co-commitments:** New and significant regional co-commitments from a diverse set of stakeholders, i.e., operating and project-specific funds from state and local governments, Tribal nations, industry, philanthropy, universities/colleges, and other key stakeholders in the region and nationally.
- **Plans for new sources of funding:** Plans for securing **specific, actionable, and time-bound commitments from capital co-investors**, including federal, state, local, and Tribal, philanthropic, corporate, institutions of higher education, and capital markets.
- **Sustainable revenue model:** Specific plans for how the proposed NSF Engine will develop models that harness licensing cash flows, equity stakes, co-ownership of assets, and other shared **revenue models** that complement the proposed strategy.

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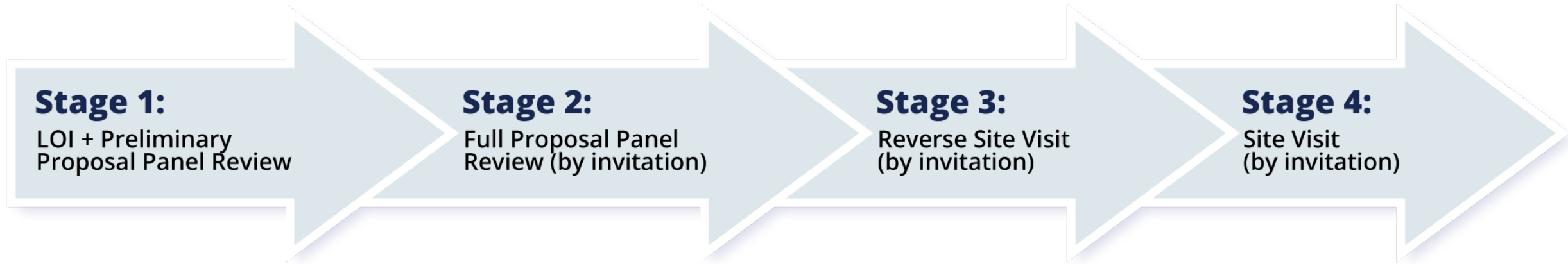
**4. Proposal Submission and Merit Review Process**

# Merit Review Process



# Merit Review Process for NSF Engines Competition

The NSF Engines competition will include a four-stage review process:



- Teams submit application materials at each stage, only preliminary proposals are open to all teams.
- After Stage 1, a subset of the most meritorious proposals will advance to the next stage.
- Based on the number and quality of proposals, NSF reserves the right to modify the number of review stages.

# Required and Invited Submissions

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- **Letters of Intent:** Must be submitted via Research.gov
- **Preliminary Proposals:** Must be submitted via Research.gov, even if full proposals will be submitted via Grants.gov.
- **Full Proposals (by invitation):** May be submitted via Research.gov or Grants.gov (with a strong recommendation that teams use Research.gov)

Invited full proposals submitted in response to this solicitation may be submitted via Research.gov or Grants.gov, however due to the complexity of this program, use of Research.gov is strongly recommended.

# Prospective New Award Recipients

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**Prospective New Award Recipients:** organizations that have never received an award from NSF or who have not had an active award over the past five years.

## **Prospective New Award organizations should:**

- Look into the requirements for submitting the various application materials well in advance of the submission deadlines;
  - Lead org in the LOI must have a UEI and fully registered at sam.gov at the time of LOI submission
  - Personnel designated as a PI or co-PI must have an NSF ID at the time of LOI
- Confirm registration and UEI in the federal government's System for Award Management (sam.gov);
- Review NSF's Prospective [New Award Recipient Guidance](#);
- Review the PAPPG (noted on the previous slide); and
- Familiarize themselves with the recommended research.gov system in advance of deadlines.



# Application Materials



# Application Materials Submission Timeline

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Document	Deadline
Letter of Intent (1-page synopsis)	June 18, 2024
Preliminary Proposal (10-page project description)	August 6, 2024
Full Proposal (30-page project description, invitation only)	February 11, 2025
Reverse Site Visit (invitation only)	TBD
Site Visit (invitation only)	TBD

# Letter of Intent (LOI)

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**LOIs are required to be eligible to submit an Engine proposal.**

- Submitting an LOI does not obligate a potential proposer to submit a preliminary proposal.

**LOIs are used for internal planning purposes only and do not undergo merit review.**

- Proposers will not receive any feedback on their LOI other than a message confirming receipt of the LOI.
- A lead organization can only submit one LOI and one preliminary proposal.
- The composition of the team can change between the LOI and preliminary proposal, and again for the full proposals.

The NSF Engines solicitation specifies what information to include in a LOI

# Preliminary Proposals

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- Preliminary proposals are required.
- Project Description
  - Length = up to 10 pages
  - Must contain the following sections with these headings:
    - Vision and Scope
    - Technology Innovation Plans
    - Region of Service
    - Strategy to Address Ecosystem Gaps
    - Key Partners and Stakeholders in the Region of Service
  - Submitting teams will either be invited or not invited to submit full proposals based upon review of the preliminary proposal.

The NSF Engines solicitation specifies what information to include in a preliminary proposal

# Full Proposals (Invite Only)

# Proposal Project Description

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**The proposal project description is a key component of the full proposal and should be written as a narrative.**

- Guidance on the required sections and content to be covered is in the solicitation.
  - Length = up to 30 pages.
  - Content must include:
    - Overview, Vision, and Rationale
    - Proposing Team and Organizational Structure
    - Strategic and Implementation Plans (centered around drivers of ecosystem change)
    - Evaluation Plan
- Teams are encouraged to also look at the additional review criteria as they develop their narrative.

# Preliminary and Full Proposals: Other Key Documents

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**The below sections are additional opportunities to amplify the strength of your partnerships and the proposed NSF Engine vision. Note that the full list of required documents is in the solicitation.**

- Existing and New Resources to be Made Available for the Project
- Letters of Commitment and Collaboration
- Region of Service Map

# Merit Review Criteria for Submitted Proposals

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- Proposal reviewers will be asked to consider:
  - what the proposers want to do
  - why they want to do it
  - how they plan to do it
  - how they will know if they succeed; and
  - what benefits could accrue if the project is successful.
- As specified by NSF's National Science Board, review centers around Intellectual Merit and Broader Impacts
  - **Intellectual Merit:** The Intellectual Merit criterion encompasses the potential to advance knowledge; and
  - **Broader Impacts:** The Broader Impacts criterion encompasses the potential to benefit society and contribute to the achievement of specific, desired societal outcomes.
- Additional Review Criteria



# Additional Review Criteria For Submitted Proposals

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**Preliminary proposals will be reviewed by an external panel based on these criteria.**

- Vision and Scope
- Technology Innovation Plans
- Region of Service
- Key Partners and Stakeholders
- Strategy to Address Ecosystem Gaps

**Full proposals (invited only) will be reviewed by an external panel based on the criteria above AND these additional criteria.**

- Leadership Team
- Workforce Development Plans
- Resource and Investment Capital
- Inclusive Culture
- Risk Assessment and Mitigation

# Thanks for attending!

If you have additional questions, join our Q&A webinar or email [engines@nsf.gov](mailto:engines@nsf.gov).

# Who Cannot Serve as an NSF Engine Partner?

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- **International partners:** Not permitted to be included as part of a proposal; after an award has been made, an international partner/collaborator may be added, although they may not receive funding from the NSF.
- **Not eligible to serve as partners or otherwise participate:** Organizations on the Department of Commerce's Bureau of Industry and Security (BIS) Entity List; Any entity identified under section 1260h of the [William M. \(Mac\) Thornberry National Defense Authorization Act](#) (NDAA).
- **Foreign Entities of Concern:** Cannot participate as defined in section 10638(3) of the Chips and Science Act of 2022 (Public Law 117-167, Division B).
- **Unaffiliated Individuals.**

*An organization that is not eligible to be an NSF Engine partner or to receive NSF funds is not eligible to submit a proposal in response to this solicitation or to otherwise participate in this program.*

Direct questions about this to the NSF Engines Program at [engines@nsf.gov](mailto:engines@nsf.gov).