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Frequently Asked Questions (FAQs) for NSF Regional Innovation Engines (NSF Engines)

This document summarizes frequently asked questions. To help navigate the wide-ranging list of inquiries, questions have been categorized into the following sections.

SUBMISSION REQUIREMENTS, LIMITATIONS, AND AWARD EXPECTATIONS

1. When does NSF expect the awards to be made?

2. How many proposals will be funded under the current NSF Engines program solicitation?

3. Is there a limit on the number of Letters of Intent (LOIs) that can be submitted by a Lead organization?

4. Is there a limit on the number of proposals on which an organization can be listed as a non-Lead core partner or subaward recipient?

5. How do you define "organization" (only one proposal per org)? At what point is a branch campus of a state university system considered part of or separate from that system?

6. Is there a limit to the size of the submitting team?

7. Does a proposer need to be registered in SAM.gov before the letter of intent deadline?

PI/CEO

8. The solicitation indicates that the Principal Investigator (PI) must be a senior member of the submitting organization's leadership and will also serve as the full-time CEO for the NSF Engine. At the time of proposal submission, this role may be filled by an interim CEO until a full-time CEO is named or recruited.

9. When should the CEO be named?

10. What would qualify a prospective PI/CEO to be considered a "senior member of the submitting organization's leadership" for the purposes of submitting to the NSF Engines program?

11. Does the principal investigator on a LOI or submitted proposal need to be employed at the lead organization?

ELIGIBILITY

12. Is the current NSF Engines competition limited to Development Award recipients or is the current competition open to all prospective teams or regions, including those teams that applied to but did not receive a Development Award in the previous round?

13. Can for-profit organizations such as startup accelerators, incubators, and venture capital firms submit proposals to the NSF Engines program?

14. Can an umbrella organization overseeing a group of IHEs, e.g, a university system, be a lead organization?

15. Our state has a central EPSCoR office that coordinates activities. Is this entity eligible to submit the proposal?

16. Will proposals with for-profit entities as lead organizations be reviewed differently than ones with non-profit entities as leads?

17. Can organizations that have not previously submitted to NSF serve as lead organizations?

18. How nascent do you expect the regions to be at the time of proposal submission? Is the NSF Engines program intended more to catalyze new industry, grow emerging regions, or strengthen existing regions?

19. May U.S.-based for-profit organizations participate in proposals responsive to the NSF Engines solicitation?

20. What is a "foreign entity of concern"?

21. The NSF Engines solicitation states that National Laboratories and Federally Funded Research and Development Centers may receive NSF funds as a subaward recipient; how are these defined?

LETTERS OF INTENT (LOIS)

22. Are the core partners on the NSF Engines LOI binding? Meaning, can core partners listed on the LOI change at the preliminary proposal stage?

23. Can the lead organization change after submission of the LOI but before submission of the preliminary proposal?

NSF ENGINE STRUCTURE

24. Does NSF recommend that awarded teams create a 501(c)(3) for the purpose of

operating an NSF Engine, as opposed to having the NSF Engine be operated by an existing entity?

MERIT REVIEW

25. Will there be any review feedback on submitted LOIs?

26. Will all submitted LOIs be published?

27. Will the entire LOI be published or just the title/topic?

28. What are the expectations of the pre-award site visit? What happens afterward?

29. How will NSF ensure that well-funded states do not get all the money?

DEVELOPMENT AWARD RECIPIENTS

30. The preliminary proposals ask us to include information on NSF Engine Development Awards. We are a partner receiving a subaward on a Development Award. Do we report this? Or only the leads?

31. Will NSF Engine Development Award recipients have any advantages or receive special treatment during the merit review process?

32. Are Development Award recipients encouraged to submit proposals in response to the current NSF Engines solicitation or wait for the next round?

33. Is a Development Award a prerequisite for submitting an NSF Engine proposal in response to the current NSF Engines program solicitation?

REGION OF SERVICE

34. Can a region receive more than one NSF Engine award?

35. When considering regional continuity, how do states and territories that are limited by physical geography (e.g., Alaska, Hawaii, Puerto Rico) build strong proposals? Do collaborators have to be exclusively located in the geographic region of service or can they be located elsewhere nationally or internationally?

36. If multiple teams from my region or state submit proposals, will that impact my team's likelihood of being selected?

37. How does the Engines program apply to U.S. territories? For example, Puerto Rico?

38. If my region has a strong innovation ecosystem in one topic area, can we still submit a proposal for an NSF Engine in another topic area?

39. Can a region submit multiple proposals?

40. How do you define a geographical region of service?

41. Can an NSF Engine be a rural community that partners with high-tech areas, universities, and/or other organizations?

42. Does the region need to be contiguous, or can it be composed of similar areas across the country that would contribute to, benefit from, and grow its ecosystem from the NSF Engine's focused activity?

PARTNERSHIPS

43. Does each core partner organization need to be physically located within the region or can they be doing business in that selected region?

44. Can a federal agency be a partner and/or can an individual from a federal agency be named as a co-PI or member of the leadership team?

45. My organization is not an R1 academic institution (Carnegie Classification). Can we be a competitive lead organization in the NSF Engines program?

46. Can an entity be a core partner on multiple proposals?

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50. Can an NSF Engine receive funds from local or national entities that may or may not have an existing footprint in the region of service?

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52. What is an appropriate topic area?

53. How broad must a topic area be?

54. Would NSF consider funding multiple NSF Engines in different regions that address the same topic or a similar topic?

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57. Can an NSF Engine proposal include support for Ph.D. students and/or postdoctoral fellows?

OTHER INVESTMENTS AND SUSTAINABILITY

58. Can an NSF Engine leverage other preexisting NSF investments such as those for NSF research centers?

59. Does the NSF Engines team expect NSF funds to cover the full cost of an NSF Engine?

60. What kind of industrial and state leverage is expected?

61. What are the expectations for financial contributions or cost-share from industry/corporate partners?

62. How does NSF view "for-profit" entities' participation in the NSF Engines program? Can they receive funding for their engagement?

63. Can an NSF Engine use NSF funds as a seed fund for startups?

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65. Why are awards being made as cooperative agreements?

66. Does receiving an NSF Engine award guarantee that the NSF Engine will receive $160 million over the ten-year period?

67. What happens if NSF decides to end an award early?

68. How will NSF measure growth/increased strength of our region over the duration of the award?

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69. Are corporate/philanthropic matching funds required to have a strong proposal?

70. The NSF solicitation requires dollar value estimates of new and existing resources. Does this mean there must be a cost share?

71. If we are limited to six letters of collaboration at the preliminary proposal stage, how should we demonstrate commitments from any additional partners?

USE-INSPIRED R&D AND TECHNOLOGY TRANSLATION

72. How important is research and development for a proposed NSF Engine?

73. How is the technology innovation plan defined? Does the technology need to be new or one that already has a proof of concept?

74. Is it important to demonstrate how the R&D of technologies and technology commercialization will lead to new jobs? What are the evaluation criteria for how moving technology from the lab to the market will produce jobs in the next 10 years?

75. What Technology Readiness Level (TRL) levels are expected for NSF Engines R&D activities, and how does this relate to the U.S. Economic Development Agency (EDA) Tech Hubs program?

OTHER QUESTIONS

76. How does the NSF Engines program align with other programs in the NSF Directorate for Technology, Innovation and Partnerships (TIP)? Are you open to proposers leveraging more than one TIP or NSF program?

77. How aligned is the NSF Engines program with the EDA's Build Back Better Regional Challenge (BBBRC) applications? Would a good BBBRC application make a strong foundation for an NSF Engines proposal?

78. Regarding inclusive culture, is the focus on the active participants and stakeholders of the NSF Engine, or in terms of workforce development aspects, or both?

79. Who within an Institution of Higher Education (IHE) is eligible to serve as Senior/Key Personnel on an NSF Engine proposal?

80. A Microsoft Excel template was provided for the Consolidated Personnel List but I'm confused about the choices of personnel types provided: how should I select the appropriate type?

SUBMISSION REQUIREMENTS, LIMITATIONS, AND AWARD EXPECTATIONS

1. **When does NSF expect the awards to be made?**

   NSF anticipates making awards in late 2025, pending appropriations.

2. **How many proposals will be funded under the current NSF Engines program solicitation?**

   The number of awards will be determined by the number of high-quality proposals received and the availability of funds appropriated by Congress.

3. **Is there a limit on the number of Letters of Intent (LOIs) that can be submitted by**

a Lead organization?

Yes. An organization may submit no more than one Letter of Intent (LOI), one preliminary proposal, and one full proposal in response to this solicitation as the lead organization. If an organization exceeds this limitation, LOIs, preliminary proposals, and full proposals will be accepted based on earliest date and time of submission (i.e., the first proposal will be accepted, and the remainder will be returned without review). A lead organization on a proposal may be a sub-recipient on a different proposal. There is no limit on the number of proposals for which an organization can serve as a sub-recipient.

4. **Is there a limit on the number of proposals on which an organization can be listed as a non-Lead core partner or subaward recipient?**

No, there is no limit on the number of proposals for which an organization can serve as a sub-award recipient. However, the organization must be able to demonstrate that it has the capacity and resources to contribute to all NSF Engines for which it is listed as a core partner and sub-recipient.

5. **How do you define "organization" (only one proposal per org)? At what point is a branch campus of a state university system considered part of or separate from that system?**

Generally, if each campus or unit has a separate Unique Entity ID (UEI) and otherwise meets the eligibility requirements set forth in the NSF Engines program solicitation, then each campus or unit may be eligible to submit a separate proposal. The key factor in determining whether each campus or unit will be considered a separate organization is based on which unit receives and manages the funds. If all awards are being received, managed, and administered by one entity, then other related entities (despite having a separate UEI) would **not** be considered separate entities for the purpose of the NSF Engines program.

Below are a few additional notes to consider:

   A. An organization that has not previously received NSF funds would need to undergo a new awardee review and obtain an NSF Institution ID before a proposal may be submitted. Please see NSF guidance for prospective new awardees at https://www.nsf.gov/publications/pub_summ.jsp?ods_key=pnag.
   B. Proposals from different campuses or separate entities within a given university will be competing against each other during the proposal review process and presumably also for support within the region of service (e.g., industry, government support, regional buy-in, etc.). It is important that the lead organization demonstrates its full commitment to a regional-scale effort. If proposals from

related organizations are in related or overlapping technology areas, it would be wise to carefully explore opportunities to merge the concepts and define a singular cross-cutting focus area.

6. **Is there a limit to the size of the submitting team?**

No, there is no size limit. The size and membership of your team should be appropriate for the proposed NSF Engine's goals.

7. **Does a proposer need to be registered in SAM.gov before the letter of intent deadline?**

SAM.gov registration is required to submit a letter of intent (LOI) and full proposal. Registration of a new entity in SAM.gov can take many weeks.

PI/CEO

8. **The solicitation indicates that the Principal Investigator (PI) must be a senior member of the submitting organization's leadership and will also serve as the full-time CEO for the NSF Engine. At the time of proposal submission, this role may be filled by an interim CEO until a full-time CEO is named or recruited.**

   A. **Does this mean that, at the time of proposal submission, the PI can be a part-time interim CEO with other duties until the full-time CEO is named/recruited?**

   During the proposal preparation and submission process, the PI can have other duties. At the time of award, an interim PI is expected to be full time, given the workload.

   B. **When a full-time CEO is named/recruited, does the new CEO then become the PI or could those roles be separated at that time?**

   Yes, the expectation is the CEO would then become the PI, as the primary person responsible for the NSF Engine award and responsible for interacting with NSF.

   C. **Is it possible for the proposing PI to remain as the CEO?**

   Yes, awarded teams should select a qualified individual to be the CEO, capable of executing on the proposed mission and galvanizing the region.

9. **When should the CEO be named?**

The CEO must be named within six months of the start date of the award.

10. **What would qualify a prospective PI/CEO to be considered a "senior member of**

the submitting organization's leadership" for the purposes of submitting to the NSF Engines program?

The underlying principle is that developing an NSF Engine proposal and potentially leading an awarded NSF Engine will require significant time commitment and a broad set of technical, management, and leadership skills by the lead PI/CEO. The PI/CEO must have the necessary skills and standing within the organization and region to lead an effort of the scope and scale of an NSF Engine.

    A. Generally, for institutions of higher education (IHEs), tenured faculty and relevant university administrators (e.g., Dean, Vice President of Research, etc.) are considered senior members of the IHE. If a non-tenured faculty member is planning to serve as PI, the IHE must demonstrate a commitment to the proposed effort and a plan to support the non-tenured faculty.

    B. For other organization types, individuals at the executive or management levels are considered senior members.

11. **Does the principal investigator on a LOI or submitted proposal need to be employed at the lead organization?**

While it is typical that the PI is employed by the lead organization, the NSF Engines program solicitation does not specify this as a requirement. The program recognizes that the PI may be associated with the lead organization but not employed by that organization. It is important to note that the lead organization is ultimately responsible for all award management/reporting and any other issues that may arise. Moreover, NSF will expect to interact directly with the PI with respect to awards requirements, including but not limited to evaluation, budgeting, and project revisions. As such, the PI will need to have the ability and authority to interact with NSF on behalf of the lead organization. It is important to note an NSF Engine CEO must be employed in a full-time role by the lead organization within six months of the award date.

ELIGIBILITY

12. **Is the current NSF Engines competition limited to Development Award recipients or is the current competition open to all prospective teams or regions, including those teams that applied to but did not receive a Development Award in the previous round?**

The current round of the NSF Engines competition is not limited to previous NSF Engines Development Award recipients and is open to all teams that meet the eligibility requirements as specified in the solicitation, including those that submitted proposals but did not receive a Development Award in the previous round.

13. **Can for-profit organizations such as startup accelerators, incubators, and venture capital firms submit proposals to the NSF Engines program?**

    All U.S.-based for-profit organizations are eligible to submit proposals to the NSF Engines program.

14. **Can an umbrella organization overseeing a group of IHEs, e.g, a university system, be a lead organization?**

    Yes, an umbrella organization may be the lead organization on an NSF Engine proposal.

15. **Our state has a central EPSCoR office that coordinates activities. Is this entity eligible to submit the proposal?**

    All state agencies, offices (including EPSCoR offices) and/or divisions that are specifically dedicated to innovation, entrepreneurship, economic development, and/or workforce development are eligible to submit proposals as the lead organization or to receive NSF funds through subawards.

16. **Will proposals with for-profit entities as lead organizations be reviewed differently than ones with non-profit entities as leads?**

    The NSF Engines program will hold all lead organizations to the same standard. The lead organization and associated management structure need to demonstrate the leadership ability and capacity to meet the goals of the NSF Engine.

17. **Can organizations that have not previously submitted to NSF serve as lead organizations?**

    Yes. An organization need not have previously submitted to NSF to serve as a lead organization for an NSF Engine. If recommended for funding, such an organization will have to take additional steps before an award can be made, consistent with NSF's guidance to prospective new awardees. As such, we strongly encourage potential proposers to understand the requirements well in advance of the submission deadline; please see the NSF guidance for prospective new awardees at https://www.nsf.gov/publications/pub_summ.jsp?ods_key=pnag.

18. **How nascent do you expect the regions to be at the time of proposal submission? Is the NSF Engines program intended more to catalyze new industry, grow emerging regions, or strengthen existing regions?**

    The NSF Engines program has a clear focus on expanding the geography of innovation and is particularly interested in increasing the nation's latent capacity in regions that

have been underrepresented and/or under-served during the technological booms of the last several decades. The proposal must describe how the proposed topic area can advance research and development, technology translation, and workforce development, and thus serve as the basis for a regional innovation ecosystem. Moreover, a proposing team must describe how the proposed region of service can substantially benefit from an infusion of NSF funding.

The NSF Engines program is a place-based innovation funding initiative, where the emphasis on "regions" expresses NSF's aim to stimulate innovation-driven economic growth within a particular place or region of service. The emphasis of the NSF Engines program further includes creating new business and economic growth in sectors that are critical to American competitiveness and in new regions.

19. **May U.S.-based for-profit organizations participate in proposals responsive to the NSF Engines solicitation?**

Yes. However, U.S. subsidiaries of foreign companies or primarily foreign-owned U.S. companies for which the foreign company and/or foreign ownership corresponds to a "foreign entity of concern" as defined in sections 10612(a)(2) and 10638(3) of the CHIPS and Science Act of 2022 (Public Law 117-167, Division B) are not eligible. This includes, among others, entities owned by, controlled by, or subject to the jurisdiction or direction of the government of the Democratic People's Republic of North Korea, the People's Republic of China, the Russian Federation, or the Islamic Republic of Iran.

20. **What is a "foreign entity of concern"?**

Sections 10612(a)(2) and 10638(3) of the CHIPS and Science Act of 2022 (Public Law 117-167, Division B) define a "foreign entity of concern" as:

"a foreign entity that is:

  A. designated as a foreign terrorist organization by the Secretary of State under section 219(a) of the Immigration and Nationality Act (8 U.S.C. 1189(a));
  B. included on the list of specially designated nationals and blocked persons maintained by the Office of Foreign Assets Control of the Department of the Treasury (commonly known as the SDN list);
  C. owned by, controlled by, or subject to the jurisdiction or direction of a government of a foreign country that is a covered nation (as such term is defined in section 4872 of title 10, United States Code);
  D. alleged by the Attorney General to have been involved in activities for which a conviction was obtained under:
      i. chapter 37 of title 18, United States Code (commonly known as the Espionage Act);

ii. section 951 or 1030 of title 18, United States Code;

iii. chapter 90 of title 18, United States Code (commonly known as the Economic Espionage Act of 1996);

iv. the Arms Export Control Act (22 U.S.C. 2751 et seq.);

v. section 224, 225, 226, 227, or 236 of the Atomic Energy Act of 1954 (42 U.S.C. 2274, 2275, 2276, 2277, and 2284);

vi. the Export Control Reform Act of 2018 (50 U.S.C. 4801 et seq.); or

vii. the International Emergency Economic Powers Act (50 U.S.C. 1701 et seq.); or

E. determined by the Secretary of Commerce, in consultation with the Secretary of Defense and the Director of National Intelligence, to be engaged in unauthorized conduct that is detrimental to the national security or foreign policy of the United States.

21. **The NSF Engines solicitation states that National Laboratories and Federally Funded Research and Development Centers may receive NSF funds as a subaward recipient; how are these defined?**

The 17 National Laboratories are listed in 42 USC 15801 (https://uscode.house.gov/view.xhtml?req=(title:42%20section:15801%20edition:prelim); and the Federal Funded Research and Development Centers are found on this Master Government List of Federally Funded R&D Centers (FFRDCs): https://www.nsf.gov/statistics/ffrdclist/.

LETTERS OF INTENT (LOIS)

22. **Are the core partners on the NSF Engines LOI binding? Meaning, can core partners listed on the LOI change at the preliminary proposal stage?**

The list of core partners on the LOI is not binding. A primary reason for asking for the list of core partners on the LOI is to help the program team get a head start on preparation for the merit review process, including management of potential conflicts of interest. The set of core partners can evolve over time across the LOI, preliminary proposal and full proposal stages.

23. **Can the lead organization change after submission of the LOI but before submission of the preliminary proposal?**

Yes, the lead organization may change after submission of the LOI but prior to submission of the preliminary proposal. As a team is refining its regional mission, developing its management and overall leadership structure, and growing its stakeholder/partnership network, numerous strategic decision points will occur. The NSF Engines program wants to provide maximum flexibility to regional teams to select

the most appropriate lead organization prior to submission of its preliminary proposal, and the NSF Engines program team will provide special submission instructions should this scenario arise. Please contact engines@nsf.gov if you believe this situation applies to you.

NSF ENGINE STRUCTURE

24. **Does NSF recommend that awarded teams create a 501(c)(3) for the purpose of operating an NSF Engine, as opposed to having the NSF Engine be operated by an existing entity?**

NSF makes no specific recommendation. The primary reason for creating a separate entity to lead the NSF Engine would be to ensure independence of the NSF Engine governance from that of the lead organization; however, the lead organization might provide other mechanisms to provide this independence.

Please note that forming a new entity could complicate the pre-award financial review process by which NSF will need to determine whether the new entity will be able to manage a large award. We strongly encourage potential proposers to understand the requirements associated with NSF's review of prospective new awardee organizations well in advance of the submission deadline. Please see the NSF guidance for prospective new awardees at https://www.nsf.gov/publications/pub_summ.jsp?ods_key=pnag.

MERIT REVIEW

25. **Will there be any review feedback on submitted LOIs?**

LOIs do not undergo merit review. No feedback will be provided for submitted LOIs. NSF primarily uses LOIs to help program staff gauge the size and range of the competition, enabling earlier selection and better management of reviewers and panelists. In addition, the information contained in an LOI is used to help avoid potential conflicts of interest in the review process.

26. **Will all submitted LOIs be published?**

NSF will publish a summary of each submitted LOI. This information will be available on the NSF Engines program website.

27. **Will the entire LOI be published or just the title/topic?**

For a list of the information to be published, see the Mandatory Disclosure under preparation instructions for LOIs which can be found in Section V. Proposal Preparation and Submission Instructions of the NSF Engines program solicitation.

28. **What are the expectations of the pre-award site visit? What happens afterward?**

The proposing team will be given the opportunity to respond to weaknesses identified by the review panel, as well as answer additional questions from NSF program staff. Proposers will be asked to elaborate on other aspects of their proposals, including but not limited to the participation levels of regional stakeholders, research and development and translation efforts, available assets, and governance structures.

After the visit, NSF Engines program staff may ask a proposer to submit up to a ten-page reply, integrating proposal changes based on feedback from their site visit. Final NSF Engines funding decisions will factor in the results of all stages of the merit review process.

29. **How will NSF ensure that well-funded states do not get all the money?**

An explicit goal of the NSF Engines program is to expand the geography of innovation and catalyze regional innovation economies in regions of the country that have not fully participated in the technology boom of the past several decades.

DEVELOPMENT AWARD RECIPIENTS

30. **The preliminary proposals ask us to include information on NSF Engine Development Awards. We are a partner receiving a subaward on a Development Award. Do we report this? Or only the leads?**

Only the lead organization representing the Development Award should include the required information, specifying the Development Award information.

31. **Will NSF Engine Development Award recipients have any advantages or receive special treatment during the merit review process?**

Proposals submitted by Development Award recipients will not receive any special treatment during the multi-stage merit review process. All submitted proposals will undergo the same merit review process, as outlined in the NSF Engines solicitation. As part of the Development Award phase, each Development Award team was given the opportunity to participate in various training and informational activities to help further refine and develop their vision and overall strategy.

32. **Are Development Award recipients encouraged to submit proposals in response to the current NSF Engines solicitation or wait for the next round?**

All teams are encouraged to submit if they are prepared to address the regional vision, scale, and scope of work as outlined in the current solicitation. NSF cannot comment on the possibility of future solicitations.

33. **Is a Development Award a prerequisite for submitting an NSF Engine proposal in response to the current NSF Engines program solicitation?**

    No, having a Development Award is not a prerequisite or eligibility requirement to submit a proposal in response to NSF Engines solicitation NSF 24-565.

REGION OF SERVICE

34. **Can a region receive more than one NSF Engine award?**

    NSF seeks to harness the geography of innovation that exists across the Nation, and therefore seeks to diversify the portfolio of NSF Engine awards geographically. At the same time, NSF is seeking to fund the most meritorious proposals in regions that have not fully benefited from the technology boom of the past several decades. As such, it is possible that a single or overlapping region could receive more than one NSF Engine award, in different topic areas. Nevertheless, the NSF Engines program strongly encourages regional teams to work together to identify a shared vision that can be supported by and benefit the entire region of service.

35. **When considering regional continuity, how do states and territories that are limited by physical geography (e.g., Alaska, Hawaii, Puerto Rico) build strong proposals? Do collaborators have to be exclusively located in the geographic region of service or can they be located elsewhere nationally or internationally?**

    The NSF Engines program is a placed-based innovation funding initiative, where the emphasis on "regions" expresses NSF's aim to stimulate innovation-driven economic growth within a particular place or region of service. The NSF Engines program encourages teams to focus on a defined geographical region of service, where the NSF Engine will drive significant innovation and economic impact. It is important to note that NSF Engine partners are not limited to the region of service; partners can be in other parts of the country if the impacts of the NSF Engine's efforts are focused within the region of service.

    International partners are not permitted to be included as part of a proposal submitted to NSF pursuant to this solicitation. However, after an award has been made, an international partner/collaborator may be added in accordance with the procedures outlined in the solicitation. No international partners may receive funding from the NSF award.

36. **If multiple teams from my region or state submit proposals, will that impact my team's likelihood of being selected?**

    NSF seeks to harness the geography of innovation that exists across the Nation, and

therefore seeks to diversify the portfolio of NSF Engine awards geographically. That said, it is possible that more than one award could be made in a single region or state.

37. **How does the Engines program apply to U.S. territories? For example, Puerto Rico?**

Organizations in U.S. territories may participate in and lead NSF Engines proposals. The geographical region of service for an NSF Engine proposal may include U.S. territories.

38. **If my region has a strong innovation ecosystem in one topic area, can we still submit a proposal for an NSF Engine in another topic area?**

Yes. However, the NSF Engines program will prioritize funding for regions across the Nation without well-established innovation ecosystems.

39. **Can a region submit multiple proposals?**

Yes. There is no restriction on the number of proposals that can be submitted by the same or overlapping regions. A given region is encouraged to identify its strengths and emerging competitiveness and develop a cohesive proposal that represents a shared regional vision.

40. **How do you define a geographical region of service?**

A region of service is the contiguous geographical unit of analysis to be served by an NSF Engine, i.e., the geographical area impacted by the NSF Engine's efforts and activities. Currently defined examples include commuting zones, labor market areas, metropolitan statistical areas, and ecological or geological boundaries. For the NSF Engines program, a region of service may include multiple contiguous geographical units of analysis (e.g., multiple adjacent commuting zones). A proposal needs to demonstrate that the proposed region of service is tightly interconnected (in vision and stakeholder alignment) and has either expressed clear intent from a multi-sector regional coalition that includes regional leadership or has already previously demonstrated the capacity to collaborate, align priorities, and coordinate as a cohesive region.

41. **Can an NSF Engine be a rural community that partners with high-tech areas, universities, and/or other organizations?**

Yes, a rural community can partner with organizations in high-tech areas to build an Engine. The proposal for such an NSF Engine should demonstrate that the outcomes of the NSF Engine's efforts will result in significant growth and economic benefits within the region of service.

42. **Does the region need to be contiguous, or can it be composed of similar areas across the country that would contribute to, benefit from, and grow its ecosystem from the NSF Engine's focused activity?**

    The goal of the NSF Engines program is to create region-centered innovation economies. While an NSF Engine may have partners outside of a defined region, they should be in service of the goal of building a regional innovation economy. The economic benefits of an NSF Engine should span and strengthen the entire region of service. NSF will want to understand how you determined your region of service if it includes non-contiguous geographies.

PARTNERSHIPS

43. **Does each core partner organization need to be physically located within the region or can they be doing business in that selected region?**

    While participating organizations in each NSF Engine should largely comprise organizations from within the NSF Engine's region of service, partners from outside of that geographical area could be appropriate to augment the resources available within the region of service. All partnerships should be relevant to the goals of the NSF Engine and their roles in the region of service must be justified. For example, mentoring from experienced organizations is encouraged, and organizations operating in existing mature innovation ecosystems are welcome to partner with lead organizations that are based in the region of service to provide support if the benefits of such partnerships remain within the NSF Engine's region of service.

44. **Can a federal agency be a partner and/or can an individual from a federal agency be named as a co-PI or member of the leadership team?**

    Federal agency partners can be named on a proposal, and specific personnel can be highlighted in the core leadership team. However, NSF funding cannot flow to other federal agencies and any named personnel cannot receive any funding in their official federal capacities.

45. **My organization is not an R1 academic institution (Carnegie Classification). Can we be a competitive lead organization in the NSF Engines program?**

    There is no requirement that an NSF Engine be led by an R1 IHE, nor by any IHE for that matter. The NSF Engines program welcomes and encourages proposals from organizations that have not historically engaged as lead organizations for NSF funding opportunities. While IHEs are invited and encouraged to submit as leads, the NSF Engines program hopes to see a broader swath of organization types (including for-profit and non-profit organizations) submitting as leads, as well as potentially new

models and entities created specifically for the purpose of the NSF Engines program (though please do consider the answer to question #25 above). An NSF Engine could be led by a Minority-Serving Institution (MSI), non-profit organization, economic development agency, for-profit, Tribal Nation, or even a new innovative organizational structure that partners with regional academic institutions for the research component of the NSF Engine.

46. **Can an entity be a core partner on multiple proposals?**

    Yes, but if an organization is a core partner on multiple successful proposals, it must be prepared to explain in writing how it will be able to effectively sustain multi-year engagement and/or financial support across multiple projects.

47. **Can an entity outside a proposed region of service engage with the Engine as a core partner?**

    Yes, as long as all the activities of this entity are relevant to the goals of the NSF Engine and clearly benefit the NSF Engine's region of service.

48. **Can international organizations be partners on NSF Engine proposals or receive subawards?**

    International partners are not permitted to be included as part of a proposal submitted to NSF pursuant to this solicitation. However, after an award has been made, an international partner/collaborator may be added in accordance with the procedures outlined in the solicitation. No international partners may receive funding from the NSF award.

49. **Can a non-profit be the lead organization and have partners in the private sector?**

    An NSF Engine can be led by a non-profit organization. Partner organizations may include private sector partners. See question #52 below for additional information.

50. **Can an NSF Engine receive funds from local or national entities that may or may not have an existing footprint in the region of service?**

    An NSF Engine may receive funds from domestic entities irrespective of their footprint in the region of service.

51. **Does an NSF Engine have to include all the following as partners: institutions of higher education, for-profits, non-profit, and state/local governments or Tribal Nations?**

    There is no requirement that an NSF Engine have all the listed types of organizations as partners. Proposers should meaningfully engage partners who span the multiple and

necessary sectors represented by the stakeholders in the region of service needed to achieve the multi-faceted objectives of the NSF Engines program.

TOPIC SELECTION

52. **What is an appropriate topic area?**

    The NSF Engines solicitation includes guidelines in Section II.B.1 on selecting a topic area. Teams should consider the underlying goals of the NSF Engines program when selecting their topic area. For example, the topic chosen must address a compelling national, geostrategic, or societal challenge. A topic area must also be a good fit for that region, meaning that it must reflect the capabilities of the region: for example, by leveraging existing research or industrial activity: and address regional needs.

    It is equally important that the topic be use-inspired and that the activities to be funded: ranging from research and development to workforce development: have the potential to make tangible progress with respect to addressing the topic area and in creating new business opportunities that lead to the region's economic growth.

53. **How broad must a topic area be?**

    The goal of the NSF Engines program is to advance key technologies and tackle bold, national, geostrategic, societal, and/or economic challenges that will likely cross traditional definitions of industry clusters. Proposers should not limit their thinking to creating a single key technology cluster but instead think about how disruptive research and development (potentially spanning multiple industries and technology areas) can make tangible progress towards addressing the specific topic area. It is not necessary for an NSF Engine to address all aspects of the topic area. However, the problem scope should be clearly defined.

54. **Would NSF consider funding multiple NSF Engines in different regions that address the same topic or a similar topic?**

    Yes, as long as there is no overlap in the region of service.

PROPOSAL BUDGET

55. **Can NSF Engines budgets support academic-year salaries?**

    Yes, when adequately justified. For example, faculty at institutions with high teaching loads may need academic-year support to fully participate in an award. When adequately justified against the workload of all activities with which an individual is tasked within the NSF Engine, such support may exceed the limit of two months of salary that NSF normally requires from participating personnel. (See the NSF *PAPPG*

for the policy and proposal budget preparation instructions on senior personnel salaries and wages).

56. **Why is NSF only requesting a two-year budget for submitted proposals? How should the budget for years three and beyond be addressed?**

Budget requirements, submitted annually, are for a "rolling" two-year period. Given the duration of NSF Engines awards and the expectation that award recipients will adapt to changing conditions and new opportunities, the two-year NSF budget structure provides flexibility to the award recipients while ensuring adequate award oversight.

57. **Can an NSF Engine proposal include support for Ph.D. students and/or postdoctoral fellows?**

Yes. However, the budget justification should clearly describe how their work will contribute to the activities and goals of the NSF Engine.

OTHER INVESTMENTS AND SUSTAINABILITY

58. **Can an NSF Engine leverage other preexisting NSF investments such as those for NSF research centers?**

An NSF Engine may leverage existing NSF investments as partners or collaborators to strengthen the NSF Engine's mission. Having an existing NSF research center does not necessarily make a team more competitive. A proposing team from an existing center will be expected to explain how that center will be effectively leveraged to benefit the proposed NSF Engine.

59. **Does the NSF Engines team expect NSF funds to cover the full cost of an NSF Engine?**

No, NSF expects that NSF Engines will need to obtain a significant amount of outside capital from state, federal, philanthropic, and corporate sources, among others, to achieve their full ambitions. NSF funds should be used to build institutional capacity; pilot and catalyze initiatives; and provide leverage to launch large-scale programs. NSF Engines should be built with an intentional focus on longer-term sustainability from the outset. As noted in the solicitation, the NSF Engines program is a catalyst for sustainable growth of regional innovation ecosystems, and NSF funds are not intended to be the sole source of support. The assessment of an NSF Engine's ongoing performance will factor in the ability of the NSF Engine to leverage additional funds and resources beyond the NSF award.

60. **What kind of industrial and state leverage is expected?**

There is no expectation of a specific level of leverage; however, one of the review criteria listed in the NSF Engines solicitation specifies consideration of the plan to raise additional outside funds to launch and scale the proposed NSF Engine's efforts. The NSF Engines program expects that some of this work will already be underway to develop a sustainable capital stack.

61. **What are the expectations for financial contributions or cost-share from industry/corporate partners?**

The NSF Engines solicitation **prohibits** voluntary committed cost-sharing. There is no expectation of a specific level of leverage; however, one of the review criteria listed in the NSF Engines solicitation specifies consideration of the plan to raise additional outside funds to launch and scale the proposed Engine's efforts. The NSF Engines program expects that some of this work will already be underway to develop a sustainable capital stack.

62. **How does NSF view "for-profit" entities' participation in the NSF Engines program? Can they receive funding for their engagement?**

For-profit organizations are permitted to receive funds under the NSF Engines solicitation. A for-profit organization is permitted to serve as the lead organization or as a partner receiving a sub-award. For-profits may not receive profit or fees for their engagement as a subaward recipient in an NSF Engine.

63. **Can an NSF Engine use NSF funds as a seed fund for startups?**

No. An NSF Engine may not use NSF funds for such activities.

64. **Can an NSF Engine take an equity stake in a startup?**

An NSF Engine aiming to pursue this approach as part of its business model must consult with NSF before implementing this strategy.

AWARD MANAGEMENT

65. **Why are awards being made as cooperative agreements?**

Cooperative agreements are used by NSF when substantial involvement is anticipated between the government (in this case, NSF) and the recipient during performance of the contemplated activity. Cooperative agreements will enable NSF to tailor project-specific requirements and performance metrics for the NSF Engines, while taking on an active role in oversight of award activities. Expected outcomes for NSF Engines in terms of workforce development, translation to practice, and business development will involve an ongoing collaboration between NSF staff and recipients to ensure that the NSF

Engines have the greatest opportunity to build thriving regional innovation ecosystems.

66. **Does receiving an NSF Engine award guarantee that the NSF Engine will receive $160 million over the ten-year period?**

   No, such funding is not guaranteed. However, proposers will not need to submit new proposals to receive additional funding toward the potential $160 million total. NSF will release funding as NSF Engine award recipients achieve mutually agreed-upon milestones, subject to Congressional Appropriations. Each NSF Engine award recipient must develop a comprehensive self-evaluation plan, negotiated with NSF, that establishes appropriate milestones (including criteria, goals, and indicators of success) befitting the vision of the NSF Engine. Recipients will be monitored and assessed on a regular basis including annual project reports and targeted site visits. Failure to comply with the terms and conditions of the award may result in early termination of the award. Similarly, awards that no longer effectuate programmatic goals may also be terminated early by NSF.

67. **What happens if NSF decides to end an award early?**

   Prior to a determination to end an award early, NSF may work with the recipient on a mitigation plan, including a possible ramp-down in funds.

68. **How will NSF measure growth/increased strength of our region over the duration of the award?**

   All performance indicators/metrics will be developed by the recipient, in close collaboration with NSF, as part of a self-evaluation plan.

RESOURCES COMMITMENTS

69. **Are corporate/philanthropic matching funds required to have a strong proposal?**

   Regional growth and sustainability are key expectations for an NSF Engine. Funding from various sources, including capital investments, is an important component in the effort to build a sustainable, competitive innovation ecosystem. NSF will ask for detailed information on your new financial co-commitments that come to fruition through the proposal merit review process. The more detailed and actionable the commitments, the better. NSF recognizes that each region has a different capital environment; indeed, this local-level context is one reason why NSF will work with each recipient to develop and implement a self-evaluation plan (see questions #66 and 68 above).

70. **The NSF solicitation requires dollar value estimates of new and existing resources. Does this mean there must be a cost share?**

Proposals must include the values of resource commitments (cash or in-kind). These commitments are not a form of cost share as defined by NSF. Rather, the NSF Engines program recognizes that each region has a unique starting point and NSF needs to understand the current levels of regional support.

71. **If we are limited to six letters of collaboration at the preliminary proposal stage, how should we demonstrate commitments from any additional partners?**

    For the preliminary proposal stage, teams are encouraged to demonstrate the breadth and depth of cross-sector partnership collaborations. Merit review will consider whether the "necessary" expertise is solidly involved in the planning and execution of the proposed NSF Engine efforts.

USE-INSPIRED R&D AND TECHNOLOGY TRANSLATION

72. **How important is research and development for a proposed NSF Engine?**

    Use-inspired research and development (R&D) and translation of innovation to practice are two of the seven drivers of NSF's model of ecosystem change. A successful NSF Engine proposal must necessarily include clearly defined use-inspired R&D and translation objectives aimed at addressing a significant challenge of national, geostrategic, and/or societal importance.

73. **How is the technology innovation plan defined? Does the technology need to be new or one that already has a proof of concept?**

    While the technology does not need to be "new," it may be difficult to demonstrate a competitive advantage that involves simply adopting existing technology. The NSF Engines program's goal is to develop thriving innovation ecosystems in which innovation drives the creation of new businesses/products/services leading to the creation of good-quality, good-wage jobs.

74. **Is it important to demonstrate how the R&D of technologies and technology commercialization will lead to new jobs? What are the evaluation criteria for how moving technology from the lab to the market will produce jobs in the next 10 years?**

    It is necessary to have a plan for commercialization that will lead to the creation of jobs. Yes, your proposal will be evaluated on the case that you make in this plan.

75. **What Technology Readiness Level (TRL) levels are expected for NSF Engines R&D activities, and how does this relate to the U.S. Economic Development Agency (EDA) Tech Hubs program?**

EDA's Tech Hubs are explicitly aimed at the later TRL stages, whereas NSF funding for the research component of an NSF Engine includes support for earlier-stage activities. More importantly, an NSF Engine is expected to provide a path for translation of innovation to practice. A successful NSF Engine should have an innovation "pipeline" with later-stage research being translated to practice and early-stage research feeding the pipeline. Furthermore, all of the NSF Engine's R&D is expected to be use-inspired; e.g., the research agenda should be driven by the needs of industry and other regional stakeholders in the innovation ecosystem.

OTHER QUESTIONS

76. **How does the NSF Engines program align with other programs in the NSF Directorate for Technology, Innovation and Partnerships (TIP)? Are you open to proposers leveraging more than one TIP or NSF program?**

    The NSF TIP directorate advances U.S. competitiveness and societal benefits by nurturing partnerships that *drive and accelerate diverse innovation ecosystems, technology translation and development, and workforce development. TIP cultivates diverse innovation ecosystems throughout the U.S. to advance use-inspired research and innovation in key technologies and to address societal and economic challenges; advances U.S. competitiveness in critical and emerging technologies by developing and translating innovations and addressing national challenges; and grows a diverse and inclusive next-generation talent base and workforce around key technology and challenge areas, building expertise in necessary technical skills, use-inspired research and innovation, entrepreneurship, and translation.*

    While TIP programs create pathways for researchers, startups and institutions to move ideas from the lab to the market and society, the NSF Engines program is unique in its ambition to implement this entire progression in a regional context to focus on use-inspired, innovation-driven solutions for a specific national, geostrategic, societal and/or economic challenge.

    Proposers should consider the full range of programs that the TIP directorate and other NSF directorates have to offer and consider submitting proposals to them, as appropriate. It is NSF's desire that the NSF Engines work collaboratively with other NSF-funded activities and avail themselves of research, innovation, and workforce development efforts (funded by NSF and non-NSF sources) being currently conducted in their aligned topic areas.

    Concretely, an NSF Engine may tap into the NSF Innovation Corps (NSF I-Corps™) Hubs in its region; encourage new startups emanating from the R&D work of the NSF Engine pursuing America's Seed Fund powered by NSF [the Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) programs]; and leverage

the NSF Entrepreneurial Fellowships powered by Activate, among other NSF TIP initiatives.

77. **How aligned is the NSF Engines program with the EDA's Build Back Better Regional Challenge (BBBRC) applications? Would a good BBBRC application make a strong foundation for an NSF Engines proposal?**

Applying to or receiving funding from the BBBRC or Tech Hubs programs does not make a team ineligible for an NSF Engines award. We expect that a team will leverage funds from many different sources to grow and scale the impact of an NSF Engine. However, the merit review process for the NSF Engines program is unique to NSF, and a proposal submitted to the NSF Engines program should specifically address the NSF Engines solicitation.

The BBBRC, Tech Hubs and NSF Engines are complementary, not competitive. All these initiatives provide patient, long-term investment to drive regional capacity and national competitiveness. Through the NSF Engines program, NSF wants to create pathways into complementary programs that can speed up innovation, commercialization, and economic-growth cycles. One or more NSF Engines could potentially overlap with one or more BBBRC and/or Tech Hub awardees, which would drastically scale up a region's ability to commercialize its technologies and cement its region of service as the world leader in that technology space.

78. **Regarding inclusive culture, is the focus on the active participants and stakeholders of the NSF Engine, or in terms of workforce development aspects, or both?**

Both.

79. **Who within an Institution of Higher Education (IHE) is eligible to serve as Senior/Key Personnel on an NSF Engine proposal?**

Like other NSF programs, within an institution of higher education, tenure-track and research faculty can serve as senior/key personnel. Additionally, administrative staff in leadership roles at a university can serve as NSF Engine senior personnel if their and their office's work is central to an NSF Engine's mission. Potential examples of non-traditional senior/key personnel include executives in the tech transfer, community and economic development, and provost offices, as well as university leadership teams at affiliated entrepreneurship centers, incubators, and accelerators.

80. **A Microsoft Excel template was provided for the Consolidated Personnel List but I'm confused about the choices of personnel types provided: how should I select the appropriate type?**

A. **Senior Personnel**: Those listed as primary investigator or project director (PI/PD) or co-PI/PD (max is four), all of whom should be members of the core leadership team. The PI/PD is responsible for all communications between NSF program officials and the project, relating to the aspects of the project, including, but not limited to, scientific, technical, workforce development, research translation, economic development, and budgetary aspects of the project. The PI/PD and any identified co-PIs/PDs, however, will be jointly responsible for submission of the requisite project reports. These individuals will be listed on the cover page. Research.gov allows a max of four individuals to be added as PI/PD and Co-PI/PD.

B. **Other Senior Personnel**: Key members of the project identified as part of the leadership team but not listed on the cover page as Senior Personnel (see A. above). This includes core members of the leadership team not listed on the cover page and other senior personnel with key roles in carrying out the NSF Engine's mission. This could include individuals leading the key components of the NSF Engine such as, workforce development, translation to practice, use-inspired research, entrepreneurship, partnership development, etc.

C. **Other Personnel**: These are funded members of the project that are making key contributions but are not part of the leadership structure. This could include faculty, scientists, engineers, post docs, professional staff, students.

D. **Subawardee Personnel**: Key personnel at subaward organizations not already listed above.

E. **Collaborator Personnel**: Key personnel from partner/collaborating organizations. This could include personnel from organizations that are not receiving NSF funds but are contributing resources to the project.