



U.S. NATIONAL SCIENCE FOUNDATION  
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ALEXANDRIA, VIRGINIA 22314

## NSF 24-106

# Frequently Asked Questions (FAQs) for the Gen-4 Engineering Research Centers (ERC) Solicitation (NSF 24-576)

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The ERC solicitation ([NSF 24-576](#)) provides definitive guidance for preparing and submitting proposals. Additional information is available on the [ERC Program Website](#).

- ERC PD Consultation: A number of consultation time slots will be available starting in July 2024 at [this link](#).
- To volunteer as an ERC Reviewer, please send an email to [nsferc@nsf.gov](mailto:nsferc@nsf.gov) with "Reviewer" as the subject.
- The ERC Planning Grant competition is a separate competition, which should not be construed as a step towards an ERC proposal and is not required to submit a proposal to the [NSF 24-576](#) competition.

## GENERAL

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1. [When will the awards announcement for ERC solicitation NSF 22-580 and feedback for those proposals in the current competition be made?](#)
2. [Is it possible to schedule a consultation with one of the ERC Program Directors?](#)
3. [Must the Lead PI of a preliminary proposal eventually be the Lead PI of the ERC full proposal?](#)
4. [What are some of the lessons learned from the current competition that could be used as guidance for this round of Gen-4 ERC proposals? Are there specific issues/weaknesses that you would recommend to the community to pay specific attention to?](#)
5. [To what extent are you looking for prior collaboration among team members?](#)
6. [What are the chief differences between ERCs and Science and Technology Centers \(STCs\) or Industry-University Cooperative Research Centers \(IUCRCs\)?](#)
7. [Can societal impact be global or only U.S.?](#)
8. [How is convergence different from transdisciplinary or interdisciplinary approach?](#)

9. How do you provide evidence of trusted partnerships to NSF and review panel?
10. Given that engineering is being redefined on many campuses, how prominent must engineering departments and faculty be in the proposed ERC?
11. Can an NSF ERC include human clinical trials or animal testing and validation?
12. What percentage of effort do you recommend be directed towards non-science and engineering disciplines?
13. Can you explain the ERC 3-plane strategic diagram?
14. How should we incorporate societal impacts into the 3-plane-diagram?
15. Are there any defined documents (like the ones published by the National Academy of Engineering (NAE)) that provide definition of high risk/high payoff research approach that is acceptable to ERC?

#### **EWD (ENGINEERING WORKFORCE DEVELOPMENT)**

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16. Does the workforce development component have to have an entrepreneurship program, or can this be defined by the PIs?
17. Should the workforce development evaluation include evidence of expanding the workforce, upskilling, or both?
18. Is there a benefit to include workforce development that includes well positioned and qualified tech colleges?
19. How important is it for the workforce development to span from K-12 through continuing education or can it be more focused on certain educational stage?

#### **IE (INNOVATION ECOSYSTEM)**

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20. What is the ideal technology readiness level (TRL) range for ERCs?
21. Does the ERC program have common templates for partnership (university and/or industry) agreements, outlining policy/legal rights/responsibilities or does each center define its own agreement?

#### **MANAGEMENT AND RESOURCE**

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22. Do we need to submit a Mentoring Plan?
23. Is the diagram in the Flexibility in Management slide only meant as an example, or should the management structure follow the outline in the diagram?
24. Will funding resources be provided for evaluators?

25. Do we need to submit letters of commitment from deans of institutions of non-lead PIs? Is there a limitation to the number of these letters?

## ELIGIBILITY

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26. Can an Authorized Organizational Representative (AOR) from a university submit a Letter of Intent (and subsequent preliminary proposal) from more than one PI at that university? Additionally, can a PI submit multiple Letters of Intent or preliminary proposals?
27. Do the non-lead PIs have to be faculty members?
28. Can industry representatives serve as a Non-Lead PI?
29. Are there any limits on the number of preliminary proposals per PI and co-PI?
30. The solicitation states "Only U.S. IHE ...that grant engineering degrees at the undergraduate, masters, and doctoral engineering level may submit proposals as the lead university." Does this requirement apply to partner universities?
31. Are there restrictions on the number of partners such as universities and industry members? What are the different types of partners?
32. With regards to the requirement that each ERC core partner institution have at least three faculty participating in the ERC, are there any requirements on the type of faculty appointment, e.g., tenure track faculty?
33. Is it preferred that the lead PI be a full professor? Does the ERC Director have to hold a terminal degree?
34. What qualifies as a minority-serving institution for the Gen-4 ERCs?
35. How does the Gen-4 ERC distinguish between the role of the ERC Lead PI and role of the ERC Center Director?
36. Can an institution with a current ERC submit a proposal to the Gen-4 ERC solicitation?
37. Can ERC PIs be research professors? Or can the lead PI be an Adjunct Faculty at the lead institution?
38. Can there be two equal lead PIs?
39. In lieu of independent PhD program, can the lead university have Joint Doctoral Program with a partner university?
40. Is it necessary that the ERC Director and/or Lead PI be from an Engineering School?
41. Can the ERC Director be hired specifically for that purpose, so would not be identified on the proposal?

42. Is there a difference between the ERC Director and ERC Administrative Director?
43. Does the Administrative Director need to be a faculty member?
44. Is there a limit on the number of PIs, or the number of PIs who are in engineering departments?
45. While multiple letters of intent (LOI) can be submitted from the same institution, can there be multiple full proposal submissions from that same institution?
46. What are the limits on international academic partner institutions?
47. What is the ideal number of partner universities on a center proposal?
48. Can the title of the ERC be changed after the LOI is submitted, at the time of the preliminary submission?
49. If we are a finalist in the current competition, how will this impact our proposal in the next competition, particularly the preliminary proposal phase?

#### **AWARD INFORMATION**

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50. What is the duration of an ERC award?
51. Can the contribution of the core universities be monetary and/or in-kind too?
52. For the cost share, what is the % for cash and in-kind?
53. Is cost share required for Years 6-10 of the ERC life?
54. How does EPSCoR fit into this program?

#### **PRELIMINARY AND FULL PROPOSAL SUBMISSION**

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55. For preliminary proposals, where should the Participant Table be located?
56. Can I use Research.gov, or Grants.gov for my proposal submission?
57. If companies and federal laboratories collaborate on the proposal, would their monetary contribution have to be included in the budget of the full proposal or should it be enumerated separately?
58. What documentation is required to submit in an ERC Preliminary proposal?
59. What level of technical detail is expected in the 10-page Project Description for the preliminary proposal? A 30,000- foot view of the center or more detailed description?
60. Should we be writing the preliminary proposal as if the ERC will last for 10 years, or for the first 5-year period only? I understand that the cost share needs to be for 10 years but what about the vision?

61. What is the rationale behind not including the industry in the preliminary proposal, especially one is developing the ERC idea closely with the industry?
62. Should the Project Description contain the Results from Prior NSF Support?
63. Will separately submitted collaborative proposals be accepted for this competition?

## REVIEW PROCESS

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64. Who will review the preliminary proposals? Will it be panels of our peers, or will it be managed by NSF itself?
65. How will the review panels be organized, give the broad spectrum of potential topics?
66. In your review process, how are you planning to balance between honoring conflicts of interest (COIs) and getting the most qualified reviewers? Because of the reputation of this ERC program, almost all research-active universities would probably submit a proposal or be part of a proposal.
67. During the review of preliminary proposals are the reviewers all engineers or will it be composed of interdisciplinary reviewers for example engineers, sociologist, biologist, economist, etc.?
68. What is the anticipated timeline for announcement of decisions from Preliminary Proposal reviews?
69. How are reviewers being prepared so that those who are familiar with pre-Gen-4 (as PIs and/or reviewers) are not evaluating new proposals according to the old standards/points of view? For example, I can imagine some pre-Gen-4 PIs will struggle with the culture of inclusion piece or the fact that a PI can be non-engineering or non-tenure track.

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## GENERAL

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1. **When will the awards announcement for ERC solicitation [NSF 22-580](#) and feedback for those proposals in the current competition be made?**

For proposals still active in the [NSF 22-580](#) competition, all review materials will be released once awards are announced in late Summer 2024. Awards for the NSF 24-576 competition will likely be announced in late Summer 2026.

2. **Is it possible to schedule a consultation with one of the ERC Program Directors?**

Consultation time slots will be available starting in July 2024 from [this link](#).

**3. Must the Lead PI of a preliminary proposal eventually be the Lead PI of the ERC full proposal?**

Not necessarily. It is the Lead University that is required to be in binding commitment throughout the ERC competition process and hence, cannot be changed. It is up to the Lead University's discretion to select the Lead PI.

**4. What are some of the lessons learned from the current competition that could be used as guidance for this round of Gen-4 ERC proposals? Are there specific issues/weaknesses that you would recommend to the community to pay specific attention to?**

The major lesson is that the PIs should pay close attention to the current solicitation. More specifically, those PIs that are familiar with the Gen-3 ERC program should understand the differences in the Gen-4 ERC. Even Gen-4 Solicitations can include changes from year to year.

**5. To what extent are you looking for prior collaboration among team members?**

Prior collaborations may indicate credible team appropriateness for the proposed project but should not be used as a substitute for the deep expertise necessary for achieving the convergent research goals, nor strength across all four ERC foundational components. ERC Teams are advised to use a team science to assemble their teams and to keep in mind that ERCs should take a systems engineering approach.

**6. What are the chief differences between ERCs and Science and Technology Centers (STCs) or Industry-University Cooperative Research Centers (IUCRCs)?**

Appropriate solicitations, found on the relevant program pages for the [ERC](#), [STC](#) and [IUCRC](#) programs explain the important features of each program.

**7. Can societal impact be global or only U.S.?**

The ERC vision guides discovery and technology to uniquely transform US prosperity, health, and/or security in 10 years. The vision should describe the compelling new idea and how it relates to national needs. In this context, the vision can be either US-only or global if the best way to solve the problem is to address it from the context of the global community.

**8. How is convergence different from transdisciplinary or interdisciplinary approach?**

Convergence implies deep integration of disciplines, and the notion overlaps with transdisciplinary research approach. As stated in the solicitation: ERC convergent

research is a "deeply collaborative, team-based engineering approach for defining and solving important and complex societal problems. Convergence research blends scientific disciplines in a coordinated, reciprocal way and fosters the robust collaboration needed for successful inquiry and has the strong potential to lead to transformative solutions and new fields of study." Also, the solicitation has a link to more detailed discussion about convergent research approach, namely, the 2014 National Academies report, "Convergence: Facilitating Transdisciplinary Integration of Life Sciences, Physical Sciences, Engineering and Beyond" (<https://www.nae.edu/113283.aspx>).

**9. How do you provide evidence of trusted partnerships to NSF and review panel?**

The evidence of trusted partnerships among the ERC PI team members is evaluated in the proposal, in the way the four foundational components of GEN-4 ERC and the participation institutions' integration are described in the proposal. Potential for trusted partnerships is evidenced by the terms of the industry membership agreements and intellectual property agreements. The leadership and management structure, organization and approach are also evidence of partnership, which can be informed by team science.

**10. Given that engineering is being redefined on many campuses, how prominent must engineering departments and faculty be in the proposed ERC?**

As long as the leading institution can demonstrate that it offers engineering degrees at the B.S., M.S., and Ph.D. levels, all proposals will be on an equal footing. However, it's important to note that this is a proposal for an Engineering Research Center.

**11. Can an NSF ERC include human clinical trials or animal testing and validation?**

The ERC program seeks to fund Centers that provide unique value and do not replicate efforts supported by other federal agencies. **Early-stage human and animal studies** may be appropriate but **clinical trials are typically not supported by NSF funds**. Please refer to NSF PAPPG for guidance regarding proposals involving vertebrate animals and proposals involving human subjects.

**12. What percentage of effort do you recommend be directed towards non-science and engineering disciplines?**

There are no set percentages. The ERC team has to make the case in the proposal about the vision and plans for the four foundational components of the Gen-4 ERC, and how they will be integrated. ERCs should be driven by the defined engineered system, and all disciplines needed to address barriers.

**13. Can you explain the ERC 3-plane strategic diagram?**



The ERC 3-plane diagram reflects the expectation that the Center will be driven by an engineered system based on overarching vision that aims to address a significant societal challenge.

- The top plane of the diagram represents the engineered system, including proof-of-concept system-level testbeds.
- To enable the engineered system and the testbeds, technological advances will be required to overcome the barriers, and they are represented in the middle plane.
- The technological advances will require cutting-edge, use-inspired fundamental research, represented in the bottom plane.

A more comprehensive discussion can be found here: <https://erc-assoc.org/content/strategic-planning-research-3-plane-chart>.

**14. How should we incorporate societal impacts into the 3-plane-diagram?**

Given the societal impact that motivates the Gen-4 ERC, it is naturally reflected in the top plane. However, elements of societal impact may appear in the other planes as appropriate. For example, given that the societal impact is a driver, some projects may include ethics, policy, or social science research in the middle or bottom plane. ERC teams may modify the 3-plane chart to include key aspects of their proposed ERC beyond the framework provided.

**15. Are there any defined documents (like the ones published by the National Academy of Engineering (NAE)) that provide definition of high risk/high payoff research approach that is acceptable to ERC?**

NSF has a site that discusses "high-risk/high-payoff" or "potentially transformative" concept - see: [https://www.nsf.gov/about/transformative\\_research/](https://www.nsf.gov/about/transformative_research/).

**EWD (ENGINEERING WORKFORCE DEVELOPMENT)**

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**16. Does the workforce development component have to have an entrepreneurship program, or can this be defined by the PIs?**

Entrepreneurship training may be appropriate for Engineering Workforce Development and Innovation Ecosystem components of an ERC but are not required. This can be defined by the ERC team, consistent with the vision of the Center.

**17. Should the workforce development evaluation include evidence of expanding the workforce, upskilling, or both?**

The purpose of ERC evaluation is to provide feedback on progress towards meeting Center's goals. It should be consistent with the vision of the Center.



**18. Is there a benefit to include workforce development that includes well positioned and qualified tech colleges?**

A proposed evidence-based program for human capacity development for the future engineering and technical workforce must be described. It should be consistent with the vision of the Center.

**19. How important is it for the workforce development to span from K-12 through continuing education or can it be more focused on certain educational stage?**

It should be consistent with the vision of the Center, and consistent with the goals of the ERC solicitation: "A proposed evidence-based program for human capacity development for the future engineering and technical workforce must be described."

**IE (INNOVATION ECOSYSTEM)**

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**20. What is the ideal technology readiness level (TRL) range for ERCs?**

The ERC's efforts are expected to be use-inspired basic research, rather than prescribed by TRLs.

**21. Does the ERC program have common templates for partnership (university and/or industry) agreements, outlining policy/legal rights/responsibilities or does each center define its own agreement?**

No. Each Center defines its own agreement. ERC teams may refer to Best Practices for ERC Industrial Collaboration and Innovation: <https://erc-assoc.org/content/chapter-5-industrial-collaboration-and-innovation>, but keeping in mind that these were developed for Gen-3 ERCs.

**MANAGEMENT AND RESOURCE**

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**22. Do we need to submit a Mentoring Plan?**

Effective May 20, 2024, each NSF proposal that requests funding to support postdoctoral scholars or graduate students must include a mentoring plan.

**23. Is the diagram in the Flexibility in Management slide only meant as an example, or should the management structure follow the outline in the diagram?**

The management structure diagram is provided as an example, and it is flexible. However, the centers are required to include the Council of Deans, Student Leadership Council, and Advisory Board(s) as appropriate.

**24. Will funding resources be provided for evaluators?**

No. The evaluators should be supported from the ERC's budget. New ERCs will typically receive training on strategic planning, logic models, and ERC program required data collection and reporting.

**25. Do we need to submit letters of commitment from deans of institutions of non-lead PIs? Is there a limitation to the number of these letters?**

Yes, letters of commitment should be provided by the lead institution, core partner institutions, and any participating member organizations, as described in the "Letters" section in the solicitation. There is no limit on the number of these letters.

## **ELIGIBILITY**

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**26. Can an Authorized Organizational Representative (AOR) from a university submit a Letter of Intent (and subsequent preliminary proposal) from more than one PI at that university? Additionally, can a PI submit multiple Letters of Intent or preliminary proposals?**

Yes, both universities and PIs can submit more than one Letter of Intent (LOI) or preliminary proposal. Note, however, that the lead PI must be a faculty in the lead university and the Dean of Engineering of the lead university must chair the required Council of Deans.

**27. Do the non-lead PIs have to be faculty members?**

Non-lead PIs do not need to be a faculty member. University and institutional policy should be followed as to who may serve as a PI.

**28. Can industry representatives serve as a Non-Lead PI?**

Yes.

**29. Are there any limits on the number of preliminary proposals per PI and co-PI?**

No. An individual may be listed as a PI or co-PI on multiple preliminary proposals.

**30. The solicitation states "Only U.S. IHE ...that grant engineering degrees at the undergraduate, masters, and doctoral engineering level may submit proposals as the lead university." Does this requirement apply to partner universities?**

No, this requirement is only for the Lead institution.

**31. Are there restrictions on the number of partners such as universities and industry members? What are the different types of partners?**

No. The table below summarizes the types of participation.

ERC Role	Type	Requirements	Mode of Engagement
Lead University	Academic	<p>Only U.S. Institutions of Higher Education (IHEs) accredited in, and located in the US, that grant engineering degrees at the undergraduate, masters, and doctoral engineering level may submit proposals as the Lead university. The Lead submits the proposal, and the award is made to the Lead University. Cost Share is required.</p> <p>If an institution has two active ERC awards as lead university, it does not qualify to submit an ERC proposal as a Lead.</p>	<p>The lead university accepts the overall management and financial responsibility for the Center. Lead and core partner institutions function as an integrated whole with shared research goals and shared elements of the 4 ERC foundational components.</p>
Core Partner Institution	Academic	<p>To qualify as a Core Partner university, they must have at least three faculty and at least three students participating in the ERC; postdoctoral scholars may not be counted as students. Core Partners are included in the Cost Sharing requirements</p>	<p>Core Partners bring significant expertise in at least one area important to achieving the Center's vision. They must be engaged with and contribute to shared elements of the 4 ERC foundational components. This holistic participation is expected to continue over the lifetime of the Center.</p>

and on the Council of Deans.

STEM-MSI	Academic	The lead or at least one of the core partner universities must be a STEM-MSI university as defined by the Department of Education.	
Collaborating Partner Institutions	Academic or Non-academic	<p>In some cases, ERC funds are provided to the affiliated institutions, faculty members, or students. In these cases, funds go to the collaborating institutions through a sub-award from the lead institution. Any potential sub-awardee must meet NSF eligibility requirements as described in the NSF PAPPG: <a href="https://new.nsf.gov/policies/pappg">https://new.nsf.gov/policies/pappg</a>.</p> <p>* Students from the Collaborating Partner Institutions supported by the ERC are expected to participate across shared elements of all the 4 ERC foundational components.</p>	Other potential partners may include universities that contribute affiliated faculty, federal laboratories, private-sector or non-profit organizations, educational partners (such as precollege, technical and community colleges), and/or foreign collaborating universities or institutions. While not considered core partners, the involvement of such partners should be justified to help the Center in achieve its vision.
Industrial/Practitioner Partners	Typically, Non-	An organization that satisfies all	ERCs should engage members from sectors such

	academic requirements for membership according to the Center's membership agreement which may include financial support (cash or in-kind).	as the Federal, State or local government, quasi-government research, industry, industry association, public policy organization, regulatory agency, medical facility, private foundation, nonprofit, economic development, venture capital, community organizations, professional/trade union, and other stakeholders as appropriate.
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**32. With regards to the requirement that each ERC core partner institution have at least three faculty participating in the ERC, are there any requirements on the type of faculty appointment, e.g., tenure track faculty?**

No. There are no specific requirements. It is up to the ERC to make that decision.

**33. Is it preferred that the lead PI be a full professor? Does the ERC Director have to hold a terminal degree?**

There is no specific requirement. It is up to the ERC to make that decision.

**34. What qualifies as a minority-serving institution for the Gen-4 ERCs?**

For the [NSF 24-576](#) solicitation, [STEM-MSI](#) is defined by the Department of Education as institutions of higher education enrolling populations with significant percentages of undergraduate minority students, or that serve certain populations of minority students under various programs created by Congress.

**35. How does the Gen-4 ERC distinguish between the role of the ERC Lead PI and role of the ERC Center Director?**

It is up to each ERC team to determine what model of leadership will best meet the goals of the Center. The ERC Lead PI and Center Director may be filled by the same person or split among personnel. In instances where more than one person fills these roles, the ERC PIs will determine the responsibilities of the Center Director.

**36. Can an institution with a current ERC submit a proposal to the Gen-4 ERC solicitation?**

Yes, a university that leads a single ERC from Classes 2017-2024 is eligible to submit as a Lead university for this competition. However, Universities leading two active ERCs are not eligible to submit a proposal as the Lead Institution. There is no limitation to how often a university can participate as an ERC Core Partner.

**37. Can ERC PIs be research professors? Or can the lead PI be an Adjunct Faculty at the lead institution?**

The solicitation requires that the Lead PI be a faculty member at the lead institution. Lead university policy should be followed as to who may serve as a PI.

**38. Can there be two equal lead PIs?**

No.

**39. In lieu of independent PhD program, can the lead university have Joint Doctoral Program with a partner university?**

Yes, but the Dean of Engineering of the lead university must serve as the chair of the Council of Deans.

**40. Is it necessary that the ERC Director and/or Lead PI be from an Engineering School?**

No, they are required to be from the leading university, but no requirement to be from the engineering school of the lead university.

**41. Can the ERC Director be hired specifically for that purpose, so would not be identified on the proposal?**

Yes, the Director, if different from the Lead PI, can be named after the person is hired, post-award.

**42. Is there a difference between the ERC Director and ERC Administrative Director?**

Yes. The role of the ERC Administrative Director is stated in the solicitation. The specific role of the ERC director is up to the proposing ERC PI team to define.

**43. Does the Administrative Director need to be a faculty member?**

No. Typically the ERC Administrative Director is a full-time staff member that may be named at the time of award.

**44. Is there a limit on the number of PIs, or the number of PIs who are in engineering departments?**

The number of PIs and co-PIs is limited by the number of names that can be listed on the Cover Page in Research.gov, irrespective of department.

45. **While multiple letters of intent (LOI) can be submitted from the same institution, can there be multiple full proposal submissions from that same institution?**

Yes.

46. **What are the limits on international academic partner institutions?**

There is no limit.

47. **What is the ideal number of partner universities on a center proposal?**

There is no prescribed number of partner universities.

48. **Can the title of the ERC be changed after the LOI is submitted, at the time of the preliminary submission?**

Yes.

49. **If we are a finalist in the current competition, how will this impact our proposal in the next competition, particularly the preliminary proposal phase?**

There is absolutely no impact. These are independent competitions.

## AWARD INFORMATION

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50. **What is the duration of an ERC award?**

ERCs generally operate for ten years, with an initial award for the first five years and a second award based on performance and satisfactory review of a renewal proposal. However, the awards can be terminated earlier based on multiple factors including the outcome of an Annual Site Visit or mismanagement of the award.

51. **Can the contribution of the core universities be monetary and/or in-kind too?**

Yes. Cost sharing of lead and core partner institutions can be monetary and/or in-kind.

52. **For the cost share, what is the % for cash and in-kind?**

There is no prescribed split between cash and in-kind contributions to the cost-share.

53. **Is cost share required for Years 6-10 of the ERC life?**

Yes. Cost sharing is required for the entire duration of the ERC. It is understood that the availability of financial resources may present significant challenges for committing to



ERC cost sharing for some smaller universities and colleges and universities that do not have a high level of research activity. Therefore, the ERC cost sharing requirements are graduated and vary by the basic classification categories of universities and colleges defined by the "Carnegie Foundation's Classification of Institutions of Higher Education" as **described in the solicitation**.

**54. How does EPSCoR fit into this program?**

The EPSCoR status does not affect the review of the ERC proposals.

**PRELIMINARY AND FULL PROPOSAL SUBMISSION**

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**55. For preliminary proposals, where should the Participant Table be located?**

This table should be included as a **Supplementary Document**. It should include all committed ERC personnel: (1) Name of the Lead PI (and ERC Director, if different from the Lead PI) and Non-Lead PIs, (2) Institution(s), (3) Department(s), (4) Most Relevant Field(s) of Expertise, and (5) all committed senior/key personnel. The Team Table should include only personnel who would receive NSF funds. Do NOT identify members of advisory boards.

**56. Can I use Research.gov, or Grants.gov for my proposal submission?**

LOIs and preliminary proposals must be submitted through Research.gov (not Grants.gov). Invited full proposals must be submitted via Research.gov or Grants.gov.

**57. If companies and federal laboratories collaborate on the proposal, would their monetary contribution have to be included in the budget of the full proposal or should it be enumerated separately?**

No, the ERC full proposal budget is only for the NSF funding. Note, however that voluntary cost sharing is not allowed. Please refer to the cost sharing section in the solicitation for more information.

**58. What documentation is required to submit in an ERC Preliminary proposal?**

Refer to the [NSF 24-576](#) for all required preliminary proposal sections. It is important to note that Biographical Sketches should only be included for Lead PI, Center Director (if different from the Lead PI) and up to four co-PIs and should not be included for any other Senior/Key Personnel. Other typical sections of an NSF proposals that should not be submitted in a preliminary proposal include Current and Pending (Other) Support, Synergistic Activities, Facilities, Equipment, and Other Resources, Data Management and Sharing Plan, Mentoring Plan, Budget, and Budget Justification.

- **Supplementary Documents** should only include the Participant Table and the

required letter from the Dean of Engineering at the Lead Institution.

- **Single Copy Documents** should only include COA information for all ERC personnel who would receive NSF funds, and ERC Preliminary Proposal Institutional Conflict information as [described in the solicitation](#).

**DO NOT SUBMIT** other documents, including Letters of Commitment or Collaboration from the domestic partner universities, prospective industrial members, or other future partners.

**59. What level of technical detail is expected in the 10-page Project Description for the preliminary proposal? A 30,000- foot view of the center or more detailed description?**

At this stage of the competition, we are looking for ideas addressing an engineering challenge that has potential to be transformative if successful. With a 10-page limit on the preliminary proposal Project Description length, there is not enough space to provide sufficient technical details on a complex engineered system to allow the reviewers to evaluate its technical feasibility. In the solicitation, specific review criteria are listed, therefore the emphasis should be clearly defining an engineered system and giving sufficient detail to pique the curiosity of the reader/reviewer and compel an invitation for a full proposal submission. It is up to the PI to strike a balance between presentation of the vision and the 3-plane chart and including other important review criteria.

**60. Should we be writing the preliminary proposal as if the ERC will last for 10 years, or for the first 5-year period only? I understand that the cost share needs to be for 10 years but what about the vision?**

The preliminary proposal should provide the vision for the entire 10 years of the center. Since the budget is not requested at this stage, do not bring in cost-share etc.

**61. What is the rationale behind not including the industry in the preliminary proposal, especially one is developing the ERC idea closely with the industry?**

At the preliminary proposal stage, reviewers on the panel cannot be affiliated with institutions involved in the competition. Industry is excluded from preliminary proposals to widen the pool of available reviewers by avoiding conflict of interest (COI). The Project Description in the preliminary proposal, limited to only 10 pages, should focus on the overall vision and plan. Details such as stakeholders, including industries, are required only in the full proposal.

**62. Should the Project Description contain the Results from Prior NSF Support?**

"Results from Prior Support" is NOT a required section of the preliminary proposal.

However, it is a required section for the full proposal and should follow the formatting in the NSF PAPPG.

**63. Will separately submitted collaborative proposals be accepted for this competition?**

No.

## REVIEW PROCESS

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**64. Who will review the preliminary proposals? Will it be panels of our peers, or will it be managed by NSF itself?**

All proposals will be reviewed according to NSF's merit review process. All preliminary proposals will be reviewed by panels of experts. The members of a specific panel will be researchers, educators, and practitioners from the community outside the NSF, with relevant knowledge to evaluate the proposals assigned to that panel.

**65. How will the review panels be organized, give the broad spectrum of potential topics?**

The proposals are clustered in groups (panels) with related topics, so that panel members can be brought in for a specific panel focused on thematic topic(s).

**66. In your review process, how are you planning to balance between honoring conflicts of interest (COIs) and getting the most qualified reviewers? Because of the reputation of this ERC program, almost all research-active universities would probably submit a proposal or be part of a proposal.**

NSF has been successful in recruiting qualified reviewers who are not conflicted. In every competition many research-intensive universities choose not to submit proposal(s) for a given competition. Reviewers are tapped from government and industry research labs and international reviewers may be brought in as necessary.

**67. During the review of preliminary proposals are the reviewers all engineers or will it be composed of interdisciplinary reviewers for example engineers, sociologist, biologist, economist, etc.?**

All appropriate and necessary experts are brought in reviewing all aspects of the proposal, including appropriate research expertise, workforce development, innovation ecosystem, and diversity and culture of inclusion. One should not assume that only engineers will be reviewing the proposals. Suggested reviewers may also be included as detailed in the NSF PAPPG.

**68. What is the anticipated timeline for announcement of decisions from Preliminary**

## **Proposal reviews?**

There is no set date to release the result of preliminary proposal reviews, but the NSF ERC program will ensure to provide adequate time to prepare full proposals.

69. **How are reviewers being prepared so that those who are familiar with pre-Gen-4 (as PIs and/or reviewers) are not evaluating new proposals according to the old standards/points of view? For example, I can imagine some pre-Gen-4 PIs will struggle with the culture of inclusion piece or the fact that a PI can be non-engineering or non-tenure track.**

The reviewers are prepared through webinars, dedicated training sessions, and explicit instructions to respond to solicitation specific review criteria so that they are in-tune with the expectations of Gen-4 ERC program (as reflected in the solicitation).