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NSF 22-034

Frequently Asked Questions (FAQs) for the Addressing Systems Challenges through Engineering Teams (ASCENT) Program Solicitation (NSF 22-534) - FY 2022

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Email your questions to ascent@nsf.gov.

I. QUESTIONS ABOUT TOPICS

1. **What areas of research does this ASCENT solicitation intend to fund?**

The current (Fiscal year 2022) ASCENT solicitation has focus on two specific research themes: Future Semiconductor Technology (FST) and Sustainable Micro- and Nano-Electronics (SMN). The guidelines specified in the current ASCENT solicitation must be followed.

The ASCENT solicitation calls for innovative projects addressing those two challenging themes by interdisciplinary teams. Deep-integrated research approaches driven by cross-disciplinary expertise involving multiple research areas in [ECCS Division \(Core\) Programs](#), under CCSS (Communications, Circuits, and Sensing-Systems), EPCN (Energy, Power, Control, and Networks), and EPMD (Electronics, Photonics, and Magnetic Devices), are strongly encouraged.

2. **We are considering submitting an ASCENT proposal on a specific topic. Would that be in the scope of the ASCENT solicitation?**

Selection of at least one of the research themes in the current ASCENT solicitation is required for ASCENT preliminary and full proposal submissions.

3. **Why is this year's solicitation focusing only on two themes? Will there be other topics in the forthcoming years?**

The fundamental purpose of ASCENT is to bring together teams that can address various grand challenges in electrical engineering. Semiconductor technology and sustainable micro- and nano-electronics are two of the most critical areas that can drive transformative research in ECCS supported community from both academic and translational perspectives. ASCENT research themes and priorities are subject to changing in the subsequent years, budget permitting.

4. **The two research themes this year seem to be mostly device-centric, how do areas from CCSS and EPCN contribute to these themes?**

While it is true that semiconductors and micro-electronics require devices expertise, there are many open research problems related to these two themes that require inputs from sensing, communications, control, networking, and machine learning, covering a large majority of focus areas from both CCSS and EPCN. Power electronics, for instance, is one of the primary areas from EPCN that is closely related to advanced semiconductors and sustainable microelectronics.

5. Will the ASCENT solicitation fund applied research? If applied, what level of maturity is desired?

ASCENT funds ambitious and far-reaching fundamental engineering research projects. Fundamental research includes both basic and applied research. The ASCENT program is not intended to solely support technology translation; thus, proposals that are of developmental nature are not appropriate for ASCENT.

6. Where can one find some examples of ASCENT funded projects?

You can take a look at [ASCENT homepage](#) under "Awards Made Through This Program" or use the Advanced Award Search (<https://www.nsf.gov/awardsearch/advancedSearch.jsp>) to see what ASCENT projects have been awarded by ECCS.

II. QUESTIONS ABOUT BUDGETS AND AWARDS

7. What is the funding rate for ASCENT proposals?

The funding rate or "success rate" for invited ASCENT full proposals is anticipated to be similar to the average funding rate of the competitively reviewed proposals funded by ECCS.

8. Does ASCENT allow for the acquisition of equipment and if so, is there a maximum allocation of budget for it?

ASCENT does not have specific restrictions limiting acquisition of a specialized piece of equipment critically needed and fully justified for a project's success. It would be discouraged however, if a large percentage of the ASCENT proposal budget, e.g., greater than 20% of the average annual budget, is taken up by equipment. Instrumentation acquisition is more appropriate through larger centers and facilities and through specialized equipment programs in selected disciplinary fields.

9. What are the expected budget components for ASCENT? Is postdoc support or faculty salary allowed? Is any travel supported?

An ASCENT proposal can have the same budget components, including undergraduate and graduate students support, postdoctoral researcher support, and educational outreach, as a proposal submitted to any of the ECCS core programs. ECCS recommends no more than 1-month (2 months at RUI's) of senior person's regular salary in any one year and limits to no more than 2-months of their regular salary in all NSF funded projects in any one year. PIs should be careful in developing a realistic project budget that is consistent with the proposed activities, which ensures successful execution of the ASCENT project while remaining in the scope of the solicitation.

Proposed budgets must include funds for travel by at least one PI or co-PI and at least

one graduate student or researcher to attend a biennial one-day grantees' meeting in the Washington, DC area, held within the first two years of the award and two years thereafter.

10. Can I submit an ASCENT proposal as well as a core program proposal, assuming that the research topics in the proposals are sufficiently distinct?

Yes, the only restriction is that a PI cannot be involved in more than one ASCENT proposal (as a PI, co-PI, or senior personnel) in a given review cycle.

11. Can a team write and submit a proposal with a duration less than four years?

All ASCENT projects are expected to have a period of performance of four years.

12. Can our team resubmit a proposal that was not recommended for funding under the previous ASCENT solicitation?

Yes, your team may submit a new ASCENT preliminary proposal based on a revised prior submission. Note ASCENT research themes and priorities are subject to changing thus any submission must follow the guidelines specified in the current ASCENT solicitation.

13. Are there specific instructions given on COVID-19 impact on proposal submission or project management?

Requirements defined in the ASCENT solicitation remain unchanged unless announced by NSF. PIs are advised that NSF may provide temporary guidance for proposals submitted or due during the ongoing COVID-19 pandemic. Links to the impacted solicitations and a brief description of the change(s) can be found at [NSF's "Coronavirus Information" web site](#). Proposers are encouraged to check NSF's website regularly.

III. QUESTIONS ABOUT TEAMS

14. Are interdisciplinary teams preferred? Are there specific expectations about what a competitive ASCENT team would be like?

ASCENT projects are interdisciplinary and the makeup of the team should reflect that.

15. The solicitation also referred to convergent engineering research. Can you explain the relation between interdisciplinary and convergent research?

NSF identifies Convergence Research as having two primary characteristics:

- a. research driven by a specific and compelling problem. Convergence Research is generally inspired by the need to address a specific challenge or opportunity, whether it arises from deep scientific questions or pressing societal needs.
- b. deep integration across disciplines. As experts from different disciplines pursue

common research challenges, their knowledge, theories, methods, data, research communities and languages become increasingly intermingled or integrated.

ASCENT project teams are envisioned to solve compelling research problems that demand a connected portfolio of multiple integrated ECCS research areas, which is characteristic of convergent engineering research.

16. Do all PIs/co-PIs have to be from ECCS core areas, or can they come from different disciplines (physics, materials science, e.g.)?

ASCENT program supports interdisciplinary engineering research teams, and the integration of disciplinary expertise not typically engaged in ECCS-funded projects is allowed.

17. Is it necessary to have the PI/co-PIs each represent one area of device, circuits, and systems?

Each field of research, such as devices, circuits, and systems, hosts many disciplinary areas and it is not necessary that all three areas must be represented in every proposal. The PIs and co-PIs, however, are expected to have complementary, distinguished, and synergistic knowledge and skill set that represents the needed expertise for the proposed multidisciplinary research. Proposals for which the research topic or the set of skills of the PIs is primarily within one research area are not appropriate for ASCENT.

18. Is there an expectation that the three PIs will be from different Institutions of Higher Education (IHEs)?

No. Collaborative proposals can be from a single IHE or from multiple IHEs. The proposing team, however, must be interdisciplinary.

19. Are early career PIs/co-PIs encouraged in teaming and considered in evaluation? Is a mix of senior and junior faculty preferred?

The proposing team should have the appropriate expertise to execute the project. Reviewers for all NSF proposals are asked to consider how well qualified the individual, team, or organization is to conduct the proposed activities. The solicitation has no specific expectations with regards to PI/co-PIs' professional career stages or seniority.

20. Is the predominant outcome of ASCENT supposed to be the development of new groups which get early results then to go on to pursue larger funding opportunities?

The ASCENT solicitation encourages forming collaborative teams, but team forming is not the end goal. Successful ASCENT research projects may result in sustained interactions across multiple communities, which could strengthen competitiveness for the team in seeking future funding opportunities.

21. **Can an ASCENT team include a collaborator based outside the United States?**

The ASCENT program does consider proposals involving international collaborations, though NSF generally provides support only to U.S.-based organizations. The PAPPG contains important information regarding eligibility of submitting organizations (PAPPG Chapter I.E) and specific requirements regarding cooperative projects involving support for U.S. and foreign organizations.

Please note that an unfunded collaborator does not count as one of the three PI/co-PIs on the proposal as required by the ASCENT solicitation.

22. **Can an ASCENT team include a collaborator from a National Lab?**

Collaboration with National Labs is encouraged. However, as ASCENT submission eligibility is limited to IHEs, the National Lab collaborator will not be financially supported and does not count as one of the three PI/co-PIs on the proposal as required by ASCENT solicitation.

23. **Can an ASCENT team include an industrial collaborator?**

Research collaboration with industries is encouraged and may be documented (in full proposal submission only) by Letter of Commitment. However, as ASCENT submission eligibility is limited to IHEs, the industrial collaborator does not count as one of the three PI/co-PIs on the proposal as required by ASCENT solicitation, except for Grant Opportunities for Academic Liaison with Industry (GOALI) proposals (see below).

If the industry participant provides critical research expertise, without which the likelihood for success of the ASCENT project would be diminished, the GOALI type of proposal may be used in conjunction with this solicitation. Special to ASCENT:GOALI proposal: the industrial Co-PI with complementary expertise must serve as one of the minimum three PI/Co-PIs required. See the ASCENT solicitation and PAPPG Chapter II.E.5 for additional information and guidance.

IV. QUESTIONS ABOUT THE PRELIMINARY PROPOSAL

24. **What is expected from a preliminary proposal?**

Preliminary proposals should demonstrate the responsiveness to the solicitation, including the **focus emphasized on specific research themes**, the identified fundamental research problem and intended impact of the research. Equally important for a preliminary proposal is to establish its scientific soundness and document the team's ability to carry out the proposed work. Given the 5-page limitation for the Project Description, review of the preliminary proposals will have emphasis on the potential transformative nature and impact of the proposed idea on solving a pressing engineering systems challenge related to the selected theme.

25. What feedback will I receive for my preliminary proposal?

After preliminary proposals are reviewed by a panel and/or by *ad hoc* reviewers, the PI will receive individual reviews as well as a panel summary (if available). You are strongly advised to take this feedback into account in full proposal preparation, if your team is invited. Note, however, that preliminary proposal and full proposal reviews will be conducted independently.

26. After receiving feedback for the preliminary proposal, can we make changes to the subject of research or composition of the team?

You may include recommended or elected changes in your full proposal submission, as long as the research theme, the lead institution, the lead PI, and the scope of the project remain intact as reviewed.

27. If our preliminary proposal is not recommended for invitation, can we still submit a full ASCENT proposal?

No, ASCENT full proposal submission is by invitation only.

V. QUESTIONS ABOUT THE REVIEW PROCESS

28. How will ASCENT proposals be reviewed?

Both Preliminary and Full Proposals submitted in response to this program solicitation will be reviewed by Ad hoc Review and/or Panel Review.

29. What will be the evaluation criteria for ASCENT proposals?

All proposals, including ASCENT proposals, submitted to the NSF are evaluated for their Intellectual Merit and Broader Impacts according to merit review criteria approved by the National Science Board and described in the PAPPG. Additional solicitation-specific review criteria as described in the ASCENT solicitation are also used by the reviewers/panel to assess the project scope, the commitment of the investigators, the composition of the team, and the justification for ASCENT support.

30. I am not planning to submit an ASCENT proposal in this cycle, but I would like to contribute to the proposal review process. How do I get engaged?

ECCS welcomes qualified peer reviewers from the academic, industrial, and government sectors. If you are new to this process, please send an email to ascent@nsf.gov to introduce yourself and identify your areas of expertise. A short bio-sketch with current affiliation and contact information would be valuable.

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